Teacher change in Bangladesh:
A study of teachers adapting and implementing active learning into their practice

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
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Ontario Institute for Studies in Education
University of Toronto

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Abstract

The purpose of this study is to investigate the teacher change process and extend our understanding of how variability in the ways that primary school teachers in Bangladesh implement innovative pedagogical practices, such as active learning, reflects variations in their understanding, attitude, experience, and skill in the use of those pedagogical approaches.

Multiple forms of data gathering were employed based on the concerns-based adoption model (CBAM) including an open-ended statement of concern, interviews, and class observations from a purposive sample of ten teachers working in ten different schools. Additional interviews were also conducted with staff responsible for the teachers' professional development. Five main findings emerged from the research. First, there was a split between novice teachers who were committed to following the prescriptive lesson plans and more experienced teachers who adapted their lessons to accommodate differences in student readiness and performance. Second, the majority of teachers appeared to be satisfied with their use active learning methods and the mandated lessons with little projected variation in how they will implement the innovation in the future. Third, the class observation findings indicate that the majority of teachers were rated as ideal users of active learning methods in the classroom. Fourth, findings indicate that professional development and a commitment to building networks among teachers and support staff helped facilitate teachers' confidence and competency. Fifth, among the most influential factors shaping teachers' use of active learning methods were the availability of supplementary learning and teaching resources. Implications for professional development and support for teachers, the applicability of CBAM-based research in low-income country contexts like Bangladesh, as well as future areas of comparative, international, and development education research are discussed in light of those findings.
Dedication

This dissertation is dedicated to the teachers who participated in my doctoral study. I am extremely grateful for their cooperation, support, and kindness during each school visit.
Acknowledgements

The completion of this doctoral study would not have been possible without the people who helped support me along the way. First, I'd like to thank my supervisor, Professor Stephen Anderson, for his invaluable patience, professional guidance, and work on teacher development and school improvement in South Asia and East Africa, which inspired me to research and write about teacher change in Bangladesh. Second, I'd also like to acknowledge and thank Professor Clare Kosnik, who sat on my dissertation committee, for her constant encouragement, constructive feedback, and constant moral support throughout my doctoral studies. And third, Professor Sarfaroz Niyozov has provided much needed advice and direction on teacher development issues from an international perspective and has also been a huge supporter of my research throughout the doctoral journey. I look forward to learning and working with you all well into the future.

Various teachers over the years have influenced and inspired me to pursue my doctorate in ways that are not always apparent but certainly significant. I am truly indebted and thankful to Professor Joe Farrell who first introduced me to innovations in non-formal education in low-income countries thus leading me down a road in comparative, international, and development education that has now spanned more than a decade. I wish also to acknowledge Professors Vandra Massey, Ruth Hayhoe, Karen Mundy, John Richards, and Carolyn Brown. In Dhaka, Bangladesh, I would like to thank my colleagues and friends at the Institute of Educational Development, BRAC University including Dr. Manzoor Ahmed, Dr. Erum Mariam, Dr. Monica Gomes, and Dr. Sudhir Sarker. Their cooperation, advice, and support over the past eight years have been vital to my understanding and passion for educational development in Bangladesh.

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Chapter 1: Introduction

Introduction

The purpose of this study is to increase the understanding of how primary school teachers with a local non-governmental organization (NGO) in Bangladesh adapt and implement active learning methods in their classrooms. In many low-income countries there has been a shift in the educational priorities of their governments and international donors towards educational reforms that aim to achieve a conceptual shift in teachers' pedagogical knowledge and skill from a didactic approach to more constructivist-oriented active learning strategies. In Bangladesh, primary school teachers and change leaders are faced with large-scale curriculum reforms at the policy level that encourage teachers to implement active learning methods. Unfortunately, low quality teaching and professional development initiatives are struggling to instill lasting pedagogical changes at the classroom level (Ahmed & Williams, 2008).

Recently, we have started looking more closely at the way teachers teach and at what is going on inside classrooms (Barrow, et al., 2007; Leu & Price-Rom, 2006). Although little empirical research has been conducted in low-income country contexts that directly addresses the complex process of change in teachers and teaching in relation to pedagogical innovations such as active learning\(^1\), consensus exists among policy makers and school change experts recognizing the teacher as the primary unit of innovation, adoption, and the centrepiece of educational change and school improvement (Cochran-Smith & Zeichner, 2005; Datnow, Hubbard, & Mehan, 2002; Farrell, Hargreaves & Fullan, 1992; Hanushek, 1994; Lee & William, 2005; Spillane, 1999; Verspoor, 2004). Similarly, within the field of development education, research indicates the way teachers teach is of critical concern in any reform designed to improve quality (Niyozov, 2001; UNESCO, 2004).

Objectives of the study

As stated above, the focus of this study is the teacher change process and strives to better understand how variability in the ways that teachers implement new programs and innovative

\(^1\) Research addressing concerns in the implementation of student-centred approaches in developing country contexts is far less prevalent but has begun to emerge (Fuller & Clarke, 1994; Ginsburg, 2006; Guthrie, 1990; O'Sullivan, 2004).
pedagogical practices reflects variations in their understanding, attitude, experience, and skill in the use of those particular program and practices. Through this study my objective is to clarify three research gaps within the field of teacher change and teacher professional development in low-income countries: (a) to gain a deeper understanding of the nature of stages of concern that teachers in Bangladesh experience in relation to their use of a pedagogical innovation such as active learning, (b) to gain a deeper understanding how teachers' personal experiences influence and shape their teaching practice, and (c) to better understand the extent that contextual factors exert influence on teacher concerns, mastery, and patterns of classroom innovation use. To guide my thinking and data analysis I apply the Concerns-based Adoption Model (CBAM) and its various diagnostic dimensions while integrating social constructivist learning theory along with contextual factors as complementary tools for analysis to better understand how teachers develop and respond to the NGO's active learning mandate. I will also explore potential relationships between the three diagnostic dimensions of CBAM focusing on the implementation of pedagogical change among the teachers in the study, and attempt to broaden the applicability of the CBAM model by employing multiple measures of the framework in the low-income country context of Bangladesh.

**Research questions**

To respond to those research gaps, I focus on the following key questions and sub-questions:

1. How do primary school teachers in Bangladesh adapt and implement active learning methods in the classroom?
   a. What concerns do teachers express about implementing active learning methods in the classroom?
   b. How do teachers use active learning approaches in the classroom?
   c. What does active learning "look like" when it is in use?

2. How do primary school teachers in Bangladesh understand the concept and practice of active learning?
   a. How do teachers' prior experiences shape their understanding and use of active learning?
   b. How do teachers' current experiences shape their understanding and use of active learning?
3. What role does context play in shaping the implementation of active learning in the classroom?
   a. How does the ecology of the school shape and influence a teacher's use of active learning in the classroom?
   b. How does the culture of the school shape and influence a teacher's use of active learning in the classroom?

Conceptual framework

A conceptual framework provides the main theoretical concepts used by me to inform the collection and analysis of data. In my dissertation I predominantly draw upon the Hall and Hord's (2006) and others' Concerns Based Adoption Model (CBAM). CBAM is widely used as a theory and research methodology for studying the process of implementing educational change by teachers. I also draw upon social constructivist theory as an additional lens to analyze how teachers adapt, adopt, or completely ignore messages about implementing active learning methods in their classrooms. In addition to the application of CBAM and social constructivist theory, I also consider the role of context in shaping the variability in teachers' implementation of active learning methods.

I employ those lenses to explore the process of pedagogical change experienced by primary school teachers implementing active learning methods from the perspective of rural Bangladeshi primary school teachers and a number of the NGO's supplementary support staff (education program officers, teacher trainers, curriculum developers, school supervisors). My findings from the teachers participating in my study confirm, to some extent, what is already known in the literature, i.e., that most school improvement initiatives and professional development supports for teachers result in a high degree of variability in the innovation implementation process. However, much still needs to be learned about why this is the case. Through this study I aim to better understand the processes associated with teachers' changing classroom practice and identify some of the challenging aspects facing teachers. This study is particularly relevant to low-income countries like Bangladesh where the percentage of trained teachers continues to decline (UNESCO, 2008). My conceptual framework and study outcomes lead me to contemplate what can be learned from the study to enhance our understanding of the teacher change process and thereby enable the design and development of more meaningful and
appropriate professional development supports for teachers working in similarly challenging contexts.

**Research methodology**

For this study, I collected multiple forms of qualitative data, including a self-administered questionnaire, an open-ended concerns statement, semi-structured interviews, and classroom observations from ten teachers working in ten different rural primary schools operated by a NGO in the Sylhet region of Bangladesh. I also conducted interviews with NGO staff working for the primary education program. Data analysis occurred at multiple levels including comparisons across teachers involved in the study.

**Positioning the researcher**

My background and connection to the study is strong. My first trip to Bangladesh was in 1998 and since then I have spent over 10 years working in a variety of jobs including teacher, school principal, teacher educator, education specialist, and most recently as a university lecturer. Initially, I worked as a school principal in the city of Sylhet, which is located in northeast Bangladesh. During my time in Sylhet I was introduced to the Executive Director of a Sylhet-based NGO that operated a primary education program. Later, while working for a private university in the capital, Dhaka, I had frequent opportunities to visit the NGO's schools and learn more about their education programme. In 2006 and 2007, I was hired by one of the NGO's major financial donors to support a strategic planning mission for the NGO. While working on this consultancy, I became increasingly interested in learning more about the NGO's primary education programme and was encouraged by the Executive Director to focus my doctoral research on their program. With the NGO's support and cooperation, I returned to Sylhet and conducted my data collection from September 2009 until August 2010. Having lived in Sylhet for over four years, I had a relatively strong connection with the region and established many friendships over the years. My knowledge and personal experience with the challenges of primary education provision in the region enabled me to perhaps more easily connect and empathize with other educators than someone who had not spent time in Sylhet. Furthermore, my professional and personal relationship with the NGO where I conducted my study ensured a high degree of cooperation, access, and support throughout the data collection process. During the
research process, the NGO allowed me to develop and conduct my study in a manner I felt most appropriate (see Chapter 3 for more details).

**Background to the study**

Beginning in the 1980s, a vast number of school effectiveness research studies were done focusing on characteristics of particularly *effective schools* as the appropriate unit of analysis for understanding teachers' responses to pedagogical change (Stoll & Fink, 1996; Teddlie & Reynolds, 2000). At that time, Marsh (1987) stated that curriculum development projects typically involve large amounts of funds being directed to the planning and production of new instructional products and processes, with a disproportionately small amount of focus (and funds) directed to the matter of implementation. As the 21st century began, the literature shifted focus and the *teacher* was increasingly recognized among policy makers and school change experts as the primary unit of innovation, adoption, and the centrepiece of educational change (Cochran-Smith & Zeichner, 2005; Datnow, Hubbard, & Mehan, 2002; Hanushek, 1994; Lee & William, 2005; Spillane, 1999; Verspoor, 2004). A strong argument in support of research on teachers as the unit of change comes from Datnow, Hubbard, and Mehan (2002) who contend that when teachers are directly involved in the change process, there is a stronger possibility that “novel ways of illuminating and solving problems will arise” (p. 71). Further support for the argument that teachers are key comes from Hattie (2009) who states, "Teachers are among the most powerful influences in learning" (2009, p. 238).

Despite recognizing the importance of teachers, there is also growing agreement and understanding on the part of education practitioners, researchers, policy-makers, and national governments around the world that didactic teaching does not ensure meaningful student learning and it is often blamed for low levels of student attainment and education quality (O'Sullivan, 2004). As a result of consistently poor student results on high-stake accountability exams and in the present curriculum reform environment, many low-income countries are advocating for innovation in the classroom. There is also an increasing focus on the role of teachers to implement more constructivist, active learning methods. Those methods are considered to be an effective response to the prevalence of teacher-centred didactic classroom practices (Farrell & Hartwell, 2008; Ginsburg, 2009; Leu & Price-Rom, 2006; Menon, 2008; O'Sullivan, 2004; Tabulawa, 2003).

In Bangladesh, generally low quality classroom teaching and professional development
continues to characterize much of the current education system. Sir Fazle Hasan Abed (2011), the founder of the largest national NGO in Bangladesh states

[t]here is a general agreement that the [education] system cannot achieve its goals with the current number of teachers, methods of preparation and professional development and level of salary and incentives. New ways of thinking about teachers and pedagogy are needed (p. xv).

Progress is being made in improving access to education in Bangladesh but questions around quality remain. Such problems include the education of teachers and the quality and relevance of teaching methods (Policy and Operations Evaluation Department (IOB) of the Netherlands Ministry of Foreign Affairs, 2011). Considering Bangladesh’s commitment to meeting the Education For All (EFA) targets for 2015, the education system will require a rethinking of approaches to achieving its educational goals. Similarly, Leu and Price-Rom (2006) note that “[m]any [low-income] countries are simultaneously implementing reforms based on more active approaches to teaching and learning, further challenging education systems and, especially, teachers” (p. 2).

With the advent of competency-based primary school curriculum in Bangladesh, teachers are required to abandon the current "chalk and talk" mode of teaching and move towards more student-centred, active learning environments envisaged in national policy directives. NGOs offering basic primary education programmes potentially play a significant role providing quality technical support and viable pedagogical alternatives related to many of Bangladesh's primary education sector challenges. NGO education providers have been described as "seedbeds of innovation" and are often a major source of distinct child-centred pedagogical models that "have moved, in one way or another, to one degree or another, away from the traditional age-graded egg-crate pedagogical model" of education (Farrell & Hartwell, 2008). The task facing education providers will be overcoming the challenges associated with teachers with minimal preparation that are already struggling to implement elements of new pedagogical approaches in classes that are often over-crowded and under-resourced.

Although much has been learned since the 1980s in low-income countries when education improvement initiatives advocated the "innovation adoption and implementation" approach to change, scholars have continued to call for research that explores how teachers learn and change their practice (Anderson, 1997; Darling-Hammond, 2005; Hall & Hord, 2006). This research
provides insights into how teachers' interpret and incorporate progressive teaching methods like active learning into their teaching repertoire and practice.

**Organization of dissertation**

This dissertation consists of ten chapters. In this introductory chapter, I provided the purpose of the study, conceptual framework, objectives, research questions, and my position as the researcher. I also provided background to the research and identified gaps in the literature. In Chapter 2 the relevant literature pertaining to active learning and teacher change is reviewed and theories related to CBAM, teacher experience, and context, that underpin the dissertation are discussed. In Chapter 3 the research design and methodology as well as my theoretical framework are outlined and pragmatist epistemologies and research methodologies are justified as suitable groundings from which to collect and analyze multiple forms of data. In Chapter 4, I present the national context of the study including a brief overview of the land and people of Bangladesh and the Sylhet division, followed by a summary of the current state of primary education in Bangladesh and Sylhet. Chapter 4 ends with a description of the NGO and its primary education program which was the research site for the study. In Chapters 5, 6, 7, 8, and 9, I present the qualitative findings. Specifically, in Chapter 5, I analyze the teachers' concerns using active learning methods in their classrooms. In Chapter 6, I assess the implementation level of active learning methods of the teachers participating in my study. In Chapter 7, I analyze class observation data to assess the degree to which the kinds of teaching and learning behaviours advocated by the developers of the NGO's primary education program were being put into practice by the teachers in my study. Chapter 8 presents my analysis of how teachers' past and present experiences in the classroom shape their understanding and use of active learning methods. In Chapter 9, the role of contextual factors are analyzed to better understand how teachers adopt, adapt, and implement the NGO's active learning mandate. In Chapter 10, I draw conclusions based on the research findings, discuss implications for teacher change and ongoing teacher development in Bangladesh, and offer suggestions for future research.

**Chapter summary**

Although many studies around the world have endorsed the use of active learning, student-centred pedagogies (Darling-Hammond & Bransford, 2005; Hopkins, 2002), very little research has been conducted on how primary school teachers in low-income countries with
minimal formal training and limited resources learn to adopt and adapt Western pedagogical approaches. Consequently, I am interested in gaining insights into the developmental process in attitudes, behaviours, and understanding as teachers attempt to implement new ideas and pedagogical practices in their classroom.
Chapter 2: Overview of the Literature

The purpose of this chapter is to review the scholarly literature that relates to the research questions and to discuss the theoretical underpinnings of the dissertation. In Chapter 1, I briefly introduced research relating to "quality teaching", which refers to aspects of what teachers do in the classroom and identified gaps that existed in what is understood about teacher attitudes and the specific behaviours that contribute most to teaching. In this chapter, I situate the topic and research questions in the broader field of teacher change research. The chapter is organized into three main sections. First, because the dissertation explores teachers' understanding and use of innovative pedagogy, I discuss current issues regarding active learning methods with a focus on research and practice in low-income country contexts. Second, I review research on developmental stage theories of teacher change. I draw upon Hall and Loucks' and others' (1977) Concerns-Based Adoption Model, as well, I draw upon theories of experience and contextual considerations to better understand how teachers develop their teaching practice.

Promoting active learning internationally

Recently, several initiatives were taken by the Bangladeshi government, donors and NGOs to promote active learning, an approach which places strong emphasis on children taking an active part in the lesson, through asking questions, working collaboratively with others and speaking out if they do not understand (Policy and Operations Evaluation Department (IOB) of the Netherlands Ministry of Foreign Affairs, 2011).

International aid agencies have played a key role in the diffusion of active learning principles across low-income countries in Africa and Asia. Among the earliest international policy documents advocating for active and participatory [instructional] approaches to teaching and learning was the document ratified by the "World Conference on Education for All (EFA): Meeting Basic Learning Needs" jointly organized by UNDP, UNESCO, UNICEF, and the World Bank in Jomtien, Thailand in 1990 (Inter-Agency Commission, 1990). A decade later, at the World Education Forum in Dakar, Senegal most governments and EFA partners including Bangladesh, reaffirmed their commitment to achieving education for all (EFA). At that time,
several elements were identified for quality education, among them, well-trained teachers using active learning techniques (UNESCO, 2000). International donor agencies like the Canadian International Development Agency (CIDA) have also been advocating for child-centred education as an appropriate methodology that will hopefully lead to increased quality and more democratic classroom environments (CIDA, 2009).

Focusing on Bangladesh, international non-governmental organizations such as UNESCO, national non-governmental organizations, various international donor agencies like CIDA have had an influence on the government's educational policy and planning. Farrell identified BRAC (Building Resources Across Communities), the largest national non-government organization in Bangladesh, as a successful alternative model of primary education that had adopted a child-centred pedagogy that focused on active rather than passive learning. According to Farrell, BRAC's program demonstrates that an active learning pedagogy "works". He argues that "It can be done, and where done, it generally produces remarkable learning gains among even the poorest and most 'disadvantaged' children" (Farrell, 2002, p. 256). Within the formal education sector, the Government of Bangladesh recently published the National Education Policy 2010, which illustrates the government's favourable commitment to focus on teaching strategies that "promote more interactive teaching methods to develop the creative faculties and skills of children" as well as research initiatives to explore "appropriate methods for innovation of effective teaching" (Ministry of Education, p. 15).

**Philosophical and theoretical foundations of active learning methods**

The idea of an active learning environment is not new. To more fully understand the pedagogy and the concept of “active learning” within classrooms in low-income countries, it is necessary to look at the theoretical influences of pedagogical thinkers including Paolo Freire (1970) and H.S. Bhola (1990) whose philosophies have been instrumental in shaping and guiding teaching and learning practice. Paolo Freire, a Brazilian educator known for his philosophies of social and educational reform, stressed that educational practices must work towards ending the polarity of the student-teacher relationship and support a classroom environment akin to a learning organization in which all present in the classroom are both learners and teachers (Freire, 1970, p. 66).

Despite widespread claims of the effectiveness of active learning pedagogies, according
to Alexander (2008), "there is less consensus on what ‘quality’ actually entails, especially when we move from the conditions for quality (infrastructure, resources, teacher supply and of course access, enrolment and retention) to the pedagogy through which educational quality is most directly mediated" (p. 1). Furthermore, Alexander argues that claims about what constitutes "best practice" in teaching and learning such as "'teacher-centred' vs. 'student-centred' are rarely discussed, let alone evaluated against hard evidence, with the result that they rapidly acquire the status of unarguable pedagogical truth and become transmuted into policy" (2008, p. 2).

Recent research including Hattie's (2009) exhaustive quantitative study of effective teachers around the world provides some contradictory evidence on the advantages and impact of active learning versus direct teaching and rote memory-oriented pedagogies. The interest of various aid agencies and international donors in learner-centred pedagogies like active learning has led some to point out discrepancies in the literature and research on the advantages as well as the proper definition of active learning pedagogy (Ginsburg, 2009; Tabulawa, 2003). As early as the 1980s, Guthrie (1980) argued that there was no causal relationship between the assumptions of equating change in the quality of teaching with the change in teaching styles. Therefore, before embarking on further discussions about teachers' understanding and use of active learning it is necessary to try and define active learning and provide both behavioural and cognitive dimensions on which active learning pedagogies can be contrasted with formal or direct instruction practices (see Abadzi, 2006; Hattie, 2009; Walberg & Paik, 2000).

**Defining active learning**

To lesser and greater extents, all learning is active, but some kinds of learning involve learners active participation more than others. According to Stern and Huber (1997), active learning has two definitions: (i) it means the learners use opportunities to decide particular aspects they wish to study, and (ii) it refers to the degree to which the learners are challenged to use their mental abilities while learning. Active learning may also be described as a theory, in that it has evolved generalized principles about the nature of teaching and learning, but it is also closely associated with the implementation of practical teaching methodologies (Kane, 2004, p. 276). Moderate forms of active learning are defined as being more participatory and democratic.

In an active learning classroom, the physical arrangement of desks, tables, and chairs is organized in a way that allows for students to work together in pairs or groups. Some of the
observable measures of this model include more or equal student talk and questions, more individual and moderately sized cooperative group instruction, varied instructional materials, and evidence of student choice and organization of content (Altinyelken, 2010; Cuban 1983; Schuh 2004). The more participatory forms of active learning discourages a less passive role for students, instead encouraging them to take more responsibility for the decisions about what they learn, when they learn, the types of learning goals and activities they like, and they help to assess their own progress (Kane, 2004; Mayer, 2011; Niemi, 2002; Reynolds, 1998; Stern & Huber, 1997).

**Defining active learning in a low-income country context**

As noted above, a review of the literature indicates moderate consensus in defining terms such as active learning or child-centred teaching methods in developed country contexts. Coming to a common agreement on a definition for active learning appears to be equally if not more complex in low-income country contexts (Abadzi, 2006). According to Farrell and Hartwell's (2008) report on successful alternative forms of schooling in low-income countries,

[w]e do not yet seem to have practical and theoretical language, which adequately represents terms such as 'child-centred', 'active pedagogy', or 'constructivist teaching and learning'. The terms do not fit well with what we are seeing. They are based upon an experience of teaching and learning rooted in the long history or, and assumptions undergirding, formal schooling as we have come to know it (p. 37).

Judging by research that looks at teachers' implementation of active learning or child-centred teaching approaches, a substantial gap exists between the theory, policy, and practice in many low-income country contexts, with the term "active learning" being frequently used in the relative sense.

In theory, active-learning, student-centered pedagogies can be characterized as involving “minimal teacher lecturing or direct transmission of factual knowledge, multiple small group activities that engage students in discovery learning or problem solving, and frequent student questions and discussion” (Leu & Price-Rom, 2006, p. 19). That said, in many low-income countries, active learning pedagogy lies somewhere on a continuum between authoritarian teacher-led "chalk and talk" instruction and unstructured discovery learning (Barrett, et al., 2007).
Research indicates that many initiatives in low-income countries that claim to be "learner-centred" share many similar characteristics with more direct instructional approaches (Barrett, et al., 2007; Ginsburg, 2006; Menon, 2008). This raises a fundamental question for primary education providers that promote an active learning pedagogy. Is it 'better' to invest time and training resources in the promotion of child-centred active learning methods, which often appear to be very challenging for teachers to internalize and efficaciously apply, or might resources be better directed toward improving teachers' use of more traditional didactic instructional approaches (Guthrie, 1990)? The extensive research on the possibilities and the realities of interactive, child-centred classroom practices in low-income countries across Africa, Latin America, and Asia (Alexander, 2000; Anderson, 2001; Fuller & Snyder, 1991; Ginsburg, 2006; Niyozov, 2009) has provided an eclectic variety of approaches have evolved to define teachers' understanding and use of active learning pedagogy around the world.

Often, active learning classrooms include a more structured pedagogy with carefully planned lessons with the following characteristics: (a) a clear introduction, (b) use of a range of instructional strategies including talking to the entire class from the front, (c) question and answer activities involving the whole class and led by the teacher, (d) independent exercises or reading tasks, and (e) whole class discussions and practical activities (Barrett et al., 2007, p. 12). In this approach, the teacher generally decides the learning intentions and success criteria, makes them transparent to the students, demonstrates them by modeling the activity at the beginning of the lesson, evaluates students to determine if they understand what they have been told by checking for understanding, and re-telling students what they have told by tying it all together with closure at the end of the lesson (Cooper, 2006; Hattie, 2009). In spite of the different dimensions of active learning, particular behavioural and cognitive dimensions exist on which active learning pedagogy can be contrasted with formal or direct instructional approaches (Ginsburg, 2009). In the next part of this chapter, I will identify the different philosophical and theoretical concepts attributed to active learning pedagogy.

**Behavioural dimension**

The behavioural dimension of active learning pedagogies focuses on the degree to which instructional strategies enable students to engage experientially in verbal or physical behaviour during class (Ginsburg, 2009). The focus on experiential learning is closely related to John
Dewey, who nearly a century ago, argued against standard teaching practices that promoted learning as “passive absorption” asserting, “education is not an affair of ‘telling’ and being told, but an active and constructive process” (1916, p. 38). In other words, “knowledge” is not something that is “out there” that we need to grasp or obtain; rather, it is something that we ourselves build and eventually modify based on our own background, experiences, prior understandings, and the data before us (Hatton, 1987, p. 57; Reagan, 2005, p. 8). For Dewey, meaningful education must provide experiential learning for each child by introducing real-life problems in the classroom (Kumar & Sarangapani, 2004). With his appreciation for the ways that experiences help to shape a person's attitudes and beliefs, Dewey also recognized the importance of social interaction. According to Dewey (1938), social interaction is a key component of experience and without experience there is no learning.

An experience is always what it is because of a transaction, taking place between an individual and what, at the time, constitutes his [or her] environment, whether the latter consists of persons with whom he [or she] is talking about some event of topic, the subject talked about being also a part of the situation; or the toys with which he [or she] is playing; the book he [or she] is reading; or the materials of an experiment he [or she] is performing. The environment, in other words, is whatever conditions interact with personal needs, desires, purposes, and capacities to create the experience which is had. (p. 43-44)

That much of the contemporary discourse on active learning is informed by the ideas of Dewey has also meant that the behavioural dimension has been linked with interests in fostering democratic citizenship in schools (Ginsburg, 2009). Although the terminology has evolved, Dewey (1966) conceptualized a democratic learning environment in which learning occurred when student activity was carried out in a social context that engaged students in cooperative group activities. The principles developed by Dewey related to a theory of experience have helped further inspire and shape social constructivist perspectives on learning theories (Piaget; 1969; Rogers, 1969; Vygotsky, 1962; 1978; Wittrock, 1979).

**Cognitive dimension**

The cognitive dimension largely addresses the discourse on child-centeredness and is generally traced to the work of Jean Piaget and Lev Vygotsky. According to Piaget, the growth of
knowledge is the result of individual constructions made by the learner. Piaget (1952) viewed the human mind as a dynamic set of cognitive structures that help us make sense of what we perceive. These structures grow in intellectual complexity as we mature and interact in the world. According to Piaget, knowledge is instrumental in people's lives: "Learners construct ways to make sense of experiences, and will continue to use those constructions as long as they work" (Vadeboncoeur, 1997, p. 23).

Another source of influence is the work of Vygotsky, who explored social learning and the importance of language in the cognitive development of children. According to Vygotsky, learning is a socially interactive and constructive activity in which both society and individuals play essential roles in shaping a child's understanding. In other words, knowledge is constructed as a result of social interactions and then internalized by the individuals. Both perspectives highlight the importance of peer interaction and cooperation in promoting children’s learning (Dockett & Perry, 1996).

Highlighting the central role of the learner, Wittrock (1979) explains, "learners have active roles in ... learning. They are not passive consumers of information" (p. 10). In an attempt to relate active learning pedagogy with the cognitive dimension of learning, Alexander (2008) contends that the interaction which many children experience in classrooms is far from the kind that will maximize cognitive development and growth. According to Alexander (2008), distinctions in the different styles of dialogue and discussion can promote greater and lesser levels of cognition, interest, and engagement in students (p. 33-34).

**Challenges implementing pedagogical innovations**

Despite educators’ best intentions, policies in support of progressive pedagogies like active learning can give rise to a host of problems. For instance, teachers frequently regard such imposed changes as unworkable, unintelligible, and incompatible with pedagogical views firmly entrenched in low-income countries (e.g., see Alexander, 2000; Coombs & Ahmed, 1974; Hargreaves, 1994; Heyneman, 1984; O'Sullivan, 2004; Tabulawa, 1997). Speaking more generally about change in schools, Anderson and Kumari (2007) state,

... educators in most schools are remarkably impervious to recurrent efforts to introduce change in traditional schooling arrangements and practices and that even
when changes appear to have taken place, they often revert back to previous forms and norms of practice over time (p. 3).

As Fullan and Hargreaves claim, “[h]owever noble, sophisticated or enlightened proposals for change and improvement might be, they come to nothing if teachers don’t adopt them in their own classrooms and if they don’t translate them into effective classroom practice” (1992, p. 13). Brodie, Lelliott, and Davis (2002) also highlight the difficulty of pedagogic transfers:

While ideas about learner-centred teaching have a long history internationally, teacher-centred practices have been particularly resistant to change. It is often the case that when these concepts are implemented, teachers exhibit evidence that they embrace the form rather than the spirit and content of the ideas (p. 541).

Further discussion of the challenges of implementing change comes from Bascia and Hargreaves (2000) who comment that most reform efforts do not understand or acknowledge the depth, range, and complexity of what teachers do (p. 4). Consequently, education reformers fail to adequately grasp what teachers need to help them implement change in the classroom. Second, there is often confusion at the epistemological level about key concepts such as active learning and learner-centredness. Third, there is often a cultural gap between progressive educationalists and conservative communities. Fourth, the capacity to deliver a new innovation may be heavily constrained by change messages mediated through current teacher training approaches, which are largely not having the expected impact on classroom processes and student outcomes (Dyer et al., 2004, p. 40). Other challenges include: minimal pre-service training, large class sizes, time constraints, limited teaching resources, high stakes exams, and limited pedagogical content knowledge (McGrath, 2008; Mohammad, 2004; Wilson, Shulman, & Richert, 1987).

Non-traditional models of instruction such as active learning methods in the classroom often entail significantly new roles and responsibilities for teachers and students as well as new styles of interaction between them. Cohen and Spillane (1992) elaborate further on the challenges teachers face in trying to implement active learning methodologies:

Even if teachers knew all they needed, the reforms propose that students become active, engaged, and collaborative. If so, classroom roles would have to change radically. Teachers would have to rely on students to produce much more instruction, and students would have to think and act in ways they rarely do.
Teachers would have to become coaches or conductors and abandon more familiar and didactic roles in which they “tell knowledge” to students (p. 30-31).

Establishing these new modes of instruction requires students, teachers, and school leaders to change the structure and dynamics within the school context, further challenging educational systems and teachers (Barrow, et al., 2007).

**Approaches to teacher change**

Teacher change is generally described in terms of learning, development, socialization, growth, improvement, competency, innovation implementation, behavioural and cognitive change, and self-study. The focus also extends from pre-service teacher education students through to expert teachers with many years of experience in the classroom. The topic of teacher change is, consequently, vast, involving a multitude of research traditions (Richardson & Placier, 2001). In this section, I focus on research that examines individual cognitive and behavioural change processes that occur when teachers attempt to implement change in their classroom practice.

Implementation is a complex process that refers to what classroom teachers actually do with a new curriculum innovation or process (Marsh, 1987). Studies of implementation of new curricular and pedagogical innovations have been extensively addressed (Hord & Huling-Austin, 1986; Leithwood, 1981). Beginning in the 1970s, scholars like Goodlad (1970) and Sarason (1982) argued that curricular innovations were not finding their way into the classroom: the “black box” of implementation required opening (Goodlad et al., 1970). Around that time, numerous scholars reconceptualized teacher implementation of curriculum change as a developmental process in education (Berman & McLaughlin, 1976; Fuller, 1969; Leithwood, 1982). Similarly, a number of developmental stage theories were proposed and studied within the education context to specifically describe teachers’ progress and learning through their careers (Berliner, 1994; Fullan, 2008; Fuller, 1969; Hall & Hord, 2006; Spillane, 1999). In much of the research, there was an emphasis on "intended outcomes" (Marsh, 1987, p. 476). Therefore the success of innovation adoption was gauged according to the fidelity or faithfulness with which teachers reproduced the intended outcomes initially devised by the program or curriculum developers.
Prominent stage theories include analyses of developmental stages and descriptions of research on the trajectory of teachers’ development, stages of development within specific programs or contexts, and movement from one stage to another (Berliner, 1994; Darling-Hammond & Bransford, 2005; Richardson & Placier, 2001; Vaughan, 2002). Among the many stage theories that have guided teacher education decisions, Francis Fuller’s theory is regarded as a classic interpretation. Fuller (1969) proposed that new teachers develop through phases during which they focus initially on themselves and their teaching — for instance, their ability to control the classroom — and then eventually on concerns related to student learning. A well-known adaptation of Fuller's theory is Hall and Loucks' (1977) early work on teachers who are implementing innovations in the classroom. In the following sub-section I review research by Hall and associates with specific attention to the Concerns Based Adoption Model, which is a widely applied theory and research methodology for studying the process of implementing educational change by teachers.

**The Concerns Based Adoption Model (CBAM)**

Acknowledging the extensive literature, research, and the influence of earlier studies of the change process, the developers of CBAM provided a structure and set of tools to illustrate the developmental process in attitudes and behaviours for individuals attempting to put new ideas and practices into use (Hall & Hord, 1987; Hall & Hord 2006; Hall & Loucks, 1977; Hall, Loucks, Rutherford, & Newlove, 1975; Hall, Wallace, & Dossett, 1973; Hord, Rutherford, Huling-Austin, & Hall, 1987; Loucks & Hall, 1977).

According to Hall and Hord (1987), “for teachers to change, there must be appropriate and promising practices and procedures (i.e., innovations) that they develop or adopt and, when necessary, adapt” (p. 5). To better understand how teachers implement new innovations, the developers of CBAM have hypothesized that developmental stages and levels exist. Although not necessarily a linear progression, the developers of CBAM contend that teachers and others move through a set of stages as they become increasingly sophisticated and skilled in utilizing new programs and procedures in class and that this development is shaped by supports provided.

CBAM “centres attention on the dynamics of the individual innovation user within the larger organizational context of innovation and adoption” (Hall & Loucks, 1977, p. 12). Three aspects of change form the basic frame of reference of the model: (a) the concerns that
individuals experience about an innovation or change, (b) how the innovation is actually used, and (c) the ways in which the innovation is adapted to the needs and styles of particular individuals (Loucks-Horsley & Stiegelbauer, 1991). In order for the model to be useful, several assumptions must be observed concerning change within a school system: (a) change is a process, not an event, (b) change is a highly personal experience, (c) change involves developmental growth in feelings and skills, and (d) change can be facilitated by interventions directed toward the individuals, innovation, and contexts involved (Anderson, 1997; Hall & Hord, 2006; Loucks-Horsley, 1996).

CBAM is premised on the assumption that change is an ongoing, personal experience, the effectiveness of which is mediated by the extent that training is matched to the needs and concerns expressed by individual trainees (Hall & Loucks, 1978). Miller and Seller (1990) contend that curriculum implementation models (like CBAM) allow curriculum workers and teacher trainers to identify particular areas of difficulty in implementation and to develop strategies to deal with them. Additionally, CBAM may provide useful information on the reasons why some innovations stagnate or fail and others flourish (Sevilla & Marsh, 1992). A graphic representation of the model and a brief description of its different components are included in Appendix 1. The three key diagnostic dimensions of CBAM include: (a) Innovation Configurations, (b) Stages of Concern, and (c) Levels of Use. A more detailed description of the three dimensions is given below. Each dimension is an essential tool for documenting the rate and extent of implementation undertaken by individual teachers and will play an important part in the focus of my study.

**Innovation Configurations**

The CBAM concept of Innovation Configurations (IC) came about because of the acknowledgement that teachers rarely implement an innovation in the classroom in exactly the same way. According to Anderson (1997), it may even be questionable if the practices that teachers describe are valid examples of the intended innovations. To address these discrepancies the developers of CBAM eventually devised the concept of ICs to help overcome those discrepancies in terms of measurement and support for teacher implementation of new programs and practices. The concept of ICs attempts to describe the various operational forms of an innovation for different teachers in different contexts and situations (Hord & Huling-Austin,
1986). With this concept, the major operational components of an innovation are identified and defined usually along a continuum of "ideal" to "less than ideal". These different configurations are then summarized on an IC Map. According to Hall (1979), the IC Map provides "word pictures" of how the innovation is being implemented from the individual perspective. In the process of developing an IC Map, Hall and Hord (2006) suggest three key questions to help guide the development of word pictures and operational forms of the innovation: (a) What does the innovation look like when it is in use? (b) What would I see in classrooms where it is used well (and not as well)? (c) What will teachers and students be doing when the innovation is in use? (p. 126).

Once an IC Map is developed it can have a variety of applications including research and evaluation studies, and professional development. Evidence of studies that applied the concept of ICs for research and evaluation purposes are numerous (Alquist & Hendrickson, 1999; Anderson, Stiegelbauer, Gérin-Lajoie, Partlow, & Cummins, 1990; Bridge, 1995; Crandall, Bauchner, Loucks, & Schmidt, 1982; George, Hall, & Uchiyama, 2000; Javeri & Persichitte, 2007; Mills & Tincher, 2003). According to Hall and Hord (2006), a problem in most research and evaluation studies has been the failure to reliably document the implementation of an innovation before judgments about the impact of particular programs and innovations are made. The use of an IC Map as an evaluation tool can provide a means to record the actual extent and quality of what has been implemented (Hall & Hord, 2006).

Another application of IC concepts relates to professional development and implementation support. Various studies, including this dissertation, utilize findings from IC Maps as a diagnostic tool to assess implementation while planning future training and teacher development. The information collected with an IC Map can provide teacher trainers, principals and other change facilitators with guidelines and specifics about what to look for during class observations. More focused observations may make it more possible to identify those components where implementation of an innovation is going well and any components where implementation might be lagging (Hall & Hord, 2006). Examples of studies that have utilized IC Maps for the purpose of implementation assessment and professional development include Anderson and Nderitu's (2002) study of the Mombasa School Improvement Project that was initiated in 1994. Although Anderson and Nderitu provided an evaluation critique at the end of the report, their use of IC checklists of child-centred teaching methods provided a useful
assessments of teaching practices that could help focus professional development needs and ultimately strengthen the nature of professional community in the schools (2002).

Finally, the IC concept can also be utilized to plan professional development. It creates a mental image of the innovation and provides a “vision” toward which the user is moving. For example, Hord, Hirsh, and Roy's (2005) development of a book of IC Maps for the National Staff Development Council (NSDC) provided a clearer picture of the NSDC Standards Staff Development to help guide educators in increasing the quality of staff development to improve the overall quality of student learning. Whatever the application, the IC Map has the potential to result in an instrument that describes an innovation, a new process, role, or way to do things. Thus, the IC Map provides a tool or "set of mental images of the innovation" that enables individuals to take the initial steps in implementing new policies, programs, or processes (Hord, Stiegelbauer, Hall, & George, 2006).

**Stages of Concern**

Teacher concerns theory, including Fuller's (1969) classic stage theory of professional development, has greatly enhanced our understanding of teachers' stages of professional development (Richardson & Placier, 2001). Hall and his colleagues later extended the concept of concerns to teachers who are implementing an innovation (George, Hall, & Stiegelbauer, 2006; Hall & Hord, 2006; Hall & Loucks, 1978). The Stages of Concerns (SoC) is a second key component of the Concerns Based Adoption Model. According to Hall and Hord (2006), teachers directly involved in the implementation of an educational "innovation" will have concerns. Although the term "concern" may come with negative connotations, in this context, concerns are broadly defined as the perceptions, feelings, motivations, frustrations, and satisfactions about the innovation and the process of change. These concerns will vary in type and intensity depending on their knowledge about and experience with the innovation, the characteristics of the change, and the different forms of implementation support provided to the teacher.

As operationalized by the developers of CBAM (Hall & Hord, 2006), the specific stages of concern are: (0) Awareness (the teacher has little knowledge about or interest in the innovation), (1) Informational (the teacher indicates an awareness and interest in learning more about the innovation), (2) Personal (the teacher is concerned about his or her ability to use the innovation and the personal costs of getting involved), (3) Management (the teacher focuses on
the processes and tasks of using the innovation and the best use of information and resources, 4) Consequence (the teacher's concerns centre upon the impact on students), (5) Collaboration (a concern about cooperating and coordinating with others in the school), and (6) Refocusing (a concern on evaluating and possibly making modifications to the innovation).

According to Anderson (1997), the seven Stages of Concern (SoC) are referred to as "stages" because they represent developmental progression. That is, teachers implementing a change may have concerns of varying intensity at various points in the change process. The possible but not necessary progression of teacher concerns begin with intense self-oriented concerns, shifting to concerns about management of the task, and eventually to student-impact focused concerns (Anderson, Rolheiser, & Bennett, 1995). A second factor of potential confusion for researchers applying the CBAM SoC tool is that teachers are likely to experience and express concerns that link simultaneously to more than one "stage" in the model (Anderson, 2008). "It is the relative intensity of their concerns related to one or more stages that distinguishes teacher attitudes towards a particular change they are involved with, not the mere presence or absence of concerns" (Anderson, 2008, p. 3).

Techniques for assessing Stages of Concern

Research on the concept of SoC initially focused on the development of a reliable and valid research tool for assessing concerns (Hall, George, & Rutherford, 1979). Subsequent research with the concept of the SoC is extensive and spans 35 years. George, Hall, and Stiegelbauer (2006) suggest two ways that the SoC can help researchers: (a) as a tool to evaluate and understand a change process and support the implementation process, and (b) as a means to develop, focus, and support professional development (p. 58). The developers of CBAM created three diagnostic instruments for assessing concerns during innovation adoption. The most frequently utilized instrument is the Stages of Concern Questionnaire (SoCQ), which was developed to provide a relatively efficient scoring measure of the seven SoC about an innovation. The SoCQ is a 35-item questionnaire that was developed to apply to all educational innovations. Without going into detail on the specifics of the questionnaire, Hall and Hord (2006) contend that the advantages of the SoCQ technique include strong reliability and validity, and the capability of using it to develop concerns profiles for individual users. A review of the literature indicates that studies that have incorporated the SoCQ are numerous. The applicability of CBAM to the study
of specific projects is quite varied, for example, in-service training for early intervention professionals (Baily & Palsha, 1992), math curriculum (Christou, Eliophotou-Menon, & Philippou, 2004), social studies curriculum (Marsh, 1987), and applying the SoC framework to study student engagement (Marsh & Penn, 1988). Although the majority of studies have taken place in North American contexts, large-scale projects of change in education using CBAM's SoCQ were also undertaken in Belgium and the Netherlands by Berg (1993; 2002).

The second way to assess concerns is the "one-legged interview" (Hall & Hord, 2006). This diagnostic tool allows a researcher to assess concerns in an informal and non-intimidating manner. The premise of the one-legged interview is that it tends to occur at random times and often entails a brief conversation between a change facilitator and a teacher about the use of the innovation. The advantages of this interview format include the unobtrusive nature of the research tool and it provides opportunities for the change facilitator to build a relationship and show support for what the teacher is doing. Examples of published studies that apply the One-Legged Interview technique often involve additional CBAM research tools. For example, Donovan, Hartley, & Strudler's (2007) study of teachers' concerns implementing a one-to-one laptop initiative first used the SoC Questionnaire followed by the one-legged interview. The data from the informal interviews was eventually used to complement and confirm findings from the SoC Questionnaire.

A third technique to measure teacher concerns, and the one used for my dissertation is the Open-Ended Statement of Concerns. This method is frequently used by staff developers to better understand teachers' concerns and involves asking teachers to write a description of their concerns, which are then content analyzed (Newlove & Hall, 1976). According to Hall and Hord (2006), the Open-Ended Concerns Statement has a number of strengths. One strength is that the concerns are in the respondents' own words and also this type of instrument can be used at almost anytime. A prominent study that incorporated the Open-Ended Concerns Statement with the Stages of Concern Questionnaire as research tools was Anderson, Rolheiser, and Bennett's (1995) multi-method study on the challenges of implementing cooperative learning. Findings from their study included a list of nine common areas of concern about cooperative learning followed by suggestions for staff responsible for supporting the implementation of active learning. Studies that have incorporated more than one CBAM component are quite common. For example, a study by Gershner and Snider (2001) examined classroom teachers' change in attitudes and behaviours
toward use of the Internet as an instructional tool. Interestingly, their study combined the SoC questionnaire and Levels of Use interviews. A closer look at CBAM's Levels of Use will be discussed in the next sub-section of the major research tools of the Concerns Based Adoption Model.

**Levels of Use**

Whereas the SoC addresses the general affective aspects of change, the Levels of Use (LoU) dimension refers to teachers' behavioural progression in knowledge and skills and asks what individuals are doing in response to the introduction of an innovation (Anderson, 2008; Hall, Dirksen, & George, 2006; Hall & Hord, 2006; Loucks-Horsley & Stiegelbauer, 1991). The purpose of the LoU instruments is to determine how performance changes as a teacher gains understanding and skill at using an innovation such as active learning. There are six LoU of an innovation and an absence-of-use level (Hall, Wallace, Dossett, 1973). According to Hall, Loucks, Rutherford, and Newlove (1975), "[Levels of Use] represents one part of the complex process of innovation adoption" (p. 56). A teacher's progression from one level to the next is marked by key decision points and corresponding behaviours in several domains related to the change (Hall, Dirksen, & George, 2006). The LoU goes beyond the root question of whether a teacher is or is not using an innovation; it provides a means for describing how performance changes as a teacher becomes more familiar with an innovation and more skillful at using it (Thornton & West, 1999). Similar to the SoC, the CBAM LoU schema represents a possible developmental progression in teacher behaviours as they prepare to use, begin to use, and gain experience implementing an innovation in the classroom (Anderson, 1997).

The LoU construct has many applications and as a result, numerous studies have been conducted using the LoU interview protocol. In general, many of the early studies focused on testing the LoU instrument for the purpose of refining the tool and assessing its validity (George & Rutherford, 1978; Hall & Loucks, 1977; Marsh, 1984). Research that combined LoU with SoC dimensions were also common during what Hall, Dirksen, and George (2006) described as the period of "foundational research". Studies that incorporated both CBAM tools determined that changes in LoU were anticipated by changes in SoC (George & Rutherford, 1978).

Other studies incorporating the LoU instrument focused on gaining a better understanding about the change process. By assessing the implementation of interventions and those that
examined how an innovation affected learning and other outcomes, researchers uncovered worthwhile information about the change process as a whole (Hall, Dirksen, & George, 2006). Several studies including Evans and Hopkins (1998) and Hall (1977) provided insights into teachers' progression with innovation adoption. A study by Hopkins in 1990, investigated teacher personality and school climate and found that that nature of the individual teacher had a significant impact on their implementation of new educational ideas. Similarly, there have been numerous studies utilizing the LoU instrument for the purpose of assessing both interventions and implementation of innovations. The LoU interview protocol has also been used by researchers to track and assess the implementation process of innovations such as instructional supports for teaching mathematics (George, Hall, & Uchiyama, 2000; Thornton & West, 1999), and integrating technology for pre-service teacher education programs (Dirksen & Tharp, 1997).

**Considerations for CBAM research**

Although an extensive body of research exists using CBAM and its various diagnostic dimensions, numerous recommendations for the future direction of CBAM-based research have been suggested by Hall and Hord (1987) and others. I have chosen to highlight particular recommendations for future CBAM research that have the most relevance to my doctoral study.

1. One suggestion involves integrating other developmental theories of learning with CBAM. Hall and Hord (1987) argue for a greater focus and more systematic examination of other developmental theories of learning and adult development. Integration of CBAM with theories of learning such as social constructivism, specifically as a tool for analysis, could contribute to our understanding of how teachers develop which has implications for those involved with supporting teachers' professional development.

2. A second area Hall and Hord (1987) encourage further exploration is the relationship between Soc, LoU, and ICs. Hall and Hord (1987) suggest that the three diagnostic dimensions of CBAM are independent of each other, but when combined, they can inform the policymaker, evaluator, and the teacher educator about a teacher's status in a particular change process and can provide clues for planning and disseminating interventions. In particular, the developers of CBAM encourage studies to try and find answers to questions such as: Do teacher concerns and use of an innovation move in parallel to each other? How does each relate to the Innovation Configurations? According to Anderson (1997), there has been little research focused on the
relationships between the three CBAM diagnostic dimensions in the implementation of specific pedagogical changes. In my review of literature, the majority of studies used the SoC component, followed by LoU. Few studies combined Soc and LoU components and none of the studies examined the relationship between the three CBAM measures.

3. Another major gap in the CBAM theory is the role of context. Since Hall and Hord's (1987) acknowledgment of the importance of context, a number of studies have attempted to examine the relationship between CBAM measures and contextual factors (Anderson, 1997; Datnow, 2002).

4. Hall and Hord (2006) also encourage the application of the CBAM model to a wider range of settings. The majority of studies using CBAM tools have occurred in North American public schools. CBAM studies in countries other than the United States and Canada include Marsh's (1987) study in Australia, Anderson and Nderitu's (2002) use of Innovation Configuration Maps as part of their evaluation of the Mombasa School Improvement Project, and the development of SoC instruments for use in the Netherlands, Belgium, and the United Kingdom in the 1980s by Berg (1993). In an effort to broaden the applicability of the CBAM model, further research employing multiple measures of the CBAM framework in a greater variety of countries is recommended (Anderson, 1997; Hall & Hord, 1987). To date, I have been unable to find any published studies of the CBAM model being using in low-income country contexts.

Following the call to supplement the CBAM model with other developmental theories of learning, the next section will review literature related to social constructivist theory and the importance of considering contextual factors in the teacher change process.

**Developmental learning and teaching**

To better understand the process of teacher development and change, it is important to acknowledge different theories of teacher development. For example, we can look to stage theories to better understand the developmental progression of teachers. Additionally, Hall and Hord (1987) note that the CBAM constructs of SoC and LoU are, in some ways, theories of the learning process teachers go through as they accumulate knowledge and develop skills in applying new pedagogical ideas and practices in the classroom. Building on Hall and Hord's suggestions, my study has attempted to integrate social constructivist theories of learning and teaching to increase the breadth and depth of our understanding about teacher change.
A review of recent research focusing on teacher implementation and the process of helping teachers improve their practice includes research on constructivist learning and teaching. According to Richardson and Placier (2001), constructivist literature may be divided into two types: (a) studies that describe attempts to help teachers create constructivist classrooms, and (b) studies that focus directly on the constructivist nature of the staff development and teacher education process itself. While I recognize the importance of helping teachers develop constructivist classrooms, a focus on the constructivist nature of the process of change in teachers' pedagogical practice has a greater bearing on how my dissertation has been conceptualized and research undertaken. Constructivism has become a significant element of the global education policy and practice scene (Richardson & Placier, 2001). Furthermore, constructivist approaches are finding their way more and more into national education policy documents of many low-income countries (Ginsburg, 2006; O'Sullivan, 2004).

If our schools are going to provide students with more learner-centred experiences, then teachers need opportunities to develop their professional practice based on emerging constructivist teaching theory. The foundation for constructivist theory, including variations such as social constructivism, has its roots in Dewey's (1938) early theories of experience. In his theory of experience and education, Dewey (1938) explains that prior experiences shape and modify our present and future experiences. Today, constructivist approaches to education are both common in educational circles, a point reflected in policy documents and teacher education programs that are designed to influence what and how things are learned in school classrooms (Richardson, 1997).

Teachers learn to teach in a constructivist manner by experiencing constructivist learning themselves (Falk, 1996). The challenge for most teachers trying to develop constructivist approaches will not be accomplished simply by adding new techniques to their current teaching repertoire (Fullan, Bennett, & Rolheiser-Bennett, 1990). Meaningful teacher change will require teachers to confront their old ideas or previous knowledge about the nature of learning and teaching with new data, ideas, and experiences. Nelson and Hammerman (1996) suggest that teacher change requires "a process of disequilibration of prior ideas and the reconstruction of more powerful ones" (p. 5). The movement towards conceiving of teaching as an intellectual, rather than technical pursuit, largely coincides with a social constructivist epistemological position:
Knowledge is considered to be the dynamic and conditional product of individuals working in intellectual communities, not a fixed body of immutable facts and procedures. Learning proceeds through the individual construction of understanding, not by accepting facts and rules from teacher or textbook; teaching is the facilitation of knowledge construction, not the delivery of information (Nelson & Hammerman, 1996, p. 4).

For the purpose of this study, I draw upon two key social constructivist ideas to better understand how teachers developed their practice. The first social constructivist principle states that individuals construct or develop new knowledge based on the vast range of past experiences, interactions, knowledge, and beliefs (Beck & Kosnik, 2006; Richardson, 1997). The second major principle focuses on teachers' current teaching practice and assumes that experience and social interactions contribute to teachers' knowledge and skills in the classroom (Beck & Kosnik, 2006).

**Individuals construct new knowledge based on past experience**

Teachers bring with them a wide array of experiences from their personal lives and from their time in school as students. Teachers' prior experiences have been identified as a profoundly important influence in the process of learning to teach (Coburn, 2005; Fletcher, 2011; Lortie, 1975; Loughran, 2006; Richardson, 1996; Zeichner & Gore, 1990). Teachers' prior beliefs and practices can present a challenge not only because teachers are unwilling to adopt new education policies but also because their existing understandings may interfere with their ability to interpret and implement the reform with a high degree of fidelity. Many of the beliefs or views that prospective teachers bring to the classroom focus on the affective qualities of teachers (e.g., caring, committed, kind), teaching strategies, and about the ways individual children learn, with little appreciation or understanding of the important role of social contexts, pedagogical knowledge and content knowledge (Richardson & Placier, 2001; Rowell, 1995). If these preconceptions are not properly addressed during pre-service and in-service teacher training, teachers may retain "problematic beliefs" throughout their time in the classroom (Feiman-Nemser, 1983; Hammerness, et al., 2001, p. 369). As Feiman-Nemser (1983) points out: The likelihood that professional study will affect what early experiences have inscribed on the mind and emotion will depend on its power to cultivate images of
the possible and desirable and to forge commitments to make those images a reality (p. 154).

Building on the social constructivist perspective, Spillane, Reiser, and Reimer (2002), explore what they refer to as "one key, though seldom explored, dimension of the implementation process: teachers' sense-making with regard to reform initiatives" (p. 388). In their review of the literature on the implementation of education policy, they emphasize that an individual's prior knowledge and experience, including tacitly held expectations and beliefs about how the world works, serve as a lens influencing what the individual notices in the environment and how the stimuli that are noticed are processed, encoded, organized, and subsequently interpreted (p. 393). Teacher educators need support to reflect on their past in order to recognize the ways in which it influences their perspective on teaching and learning. Developing a sense of their personal biographies and personal history from the inside and outside of schools can have a major impact upon what and how teachers teach (Knowles & Holt-Reynolds, 1991; Smyth, 1991). Therefore, the personal experiences of teachers are considered integral to understanding the teaching process (Clandinin & Connelly, 1996; Connelly & Clandinin, 1988).

Sociological theories of sensemaking suggest that teachers use their prior knowledge and experiences to construct new understandings. Sensemaking refers to how people make sense of the unknown and unfamiliar world around them (Weick, 1995). Additionally, Coburn (2005) recognizes that sensemaking is not solely an individual matter, but is also social in two key respects. First, it is collective in the sense that reforms are influenced and mediated by patterns of broader social interaction with colleagues. Second, Coburn (2001) contends, “sensemaking is social in the sense that it is deeply situated in teachers’ embedded contexts” (p. 147). Acknowledging the importance of teacher cognition can contribute to our understanding of implementation research within the field of teacher development.

Internationally, numerous studies have been conducted in Africa and South Asia that have explored the implementation of learner-centred approaches (Brodi, Lelliott, & Davis, 2002; Chisholm & Leyendecker, 2008; Mohammed, 2006; Nakabugo & Sieborger, 2001; O'Sullivan, 2004; Raina, 1995; Rowell, 1995; Tabulawa, 2003). In O'Sullivan's (2004) case study, she explored the introduction of learner-centred approaches in Namibia and the researchers highlighted the usefulness of an adaptive approach to teacher change. This approach is sensitive to the context of the individual school and background of the teachers (Hopkins, 2002). The
study examined the realities within which teachers work and acknowledged the link between teachers' existing knowledge and the necessary strategies to facilitate the restructuring of teaching strategies that better supported student learning. Findings indicated that teachers had problems understanding the concepts such as "facilitate" or "synthesize" related to "learner-centred" teaching. According to O'Sullivan, "... efforts to elicit from the teachers practical methods of implementing some of the ideas such as 'teachers should structure their lessons to facilitate this active learner role', were futile" (2004, p. 594).

Although there is not a unified definition of constructivism in teacher education, constructivist educators agree that teacher change requires learning opportunities that encourage the examination of theories and practices in light of teachers' beliefs as well as their past and present experiences if they are to develop new conceptual understandings related to progressive pedagogy (Tatto, 1999).

**Social interactions contribute to the construction of knowledge**

The principle that learning is social relates especially to social constructivism (Beck & Kosnik, 2006). Current conceptions on learning to teach have been heavily informed by theory related to learning communities (Cochran-Smith & Lytle, 1999; Hammerness, et al., 2001; Hord, 1997; Stoll, et al., 2006). In terms of the impact of social constructivism on our understanding of the dimensions of the teacher change process, Datnow and Stringfield (2000) contend, "reform adoption, implementation, sustainability, and school change more generally, are not processes that result from individuals or institutions acting in isolation from one another" (p. 199). Similarly, Beck and Kosnik discuss the important role of “learning communities” that exist within educational institutions (2006, p. 12). They argue that individual understanding can be extended by interaction with peers in collaborative learning communities. A well-developed community within a school setting can potentially provide strong social and emotional support, which enables others to take risks and develop a strong sense of ownership and accountability of their learning (Beck & Kosnik, 2006).

Few studies have been conducted that examine the link between collegial support and changing teacher classroom practices in low-income country contexts. One of the reasons for this may be that most research in low-income countries focus more on improving student behaviour, learning, and attainment, and pay less attention to the complexity surrounding the teacher change
process. Hardman, Abd-Kadir, and Smith (2008), conducted an investigation of classroom interaction and discourse practices in Nigerian primary schools. They found that attempts to change the teacher-centred, lecture-driven pedagogy were largely unsuccessful. The authors of the study emphasized the need to help teachers to explore their own beliefs and reflect on their teaching through discussions with colleagues and "expert practitioners" in an effort to bridge the gap between theory and actual classroom practice (Hardman, Adb-Kadir, & Smith, 2008). When teachers are provided with extended opportunities to think through new ideas and to try out new practices, ideally in a context where they can share and get constructive feedback from more experienced practitioners, researchers, and teacher educators, they are more likely to extend their repertoire of teaching skills and strategies (Fosnot, 1989; Hopkins, 2002; Joyce & Showers, 1995; Little, 1992; Nelson & Hammerman, 1996). Similar findings were reported by Tatto (1999) who viewed collaboration and collegiality among teachers "as needed in the process of developing and implementing an innovation", not as a distinct stage to reach after teachers have reach a particular level of competency managing an innovation (p. 25).

Taken together, the review of innovation and implementation research suggests that principles related to social constructivism can influence teacher learning and the teacher change process. The next section will review research that examines the role of context in shaping teacher concerns and innovation use in the classroom.

**Contextual considerations to teacher change**

Throughout low-income countries, the firmly entrenched tradition of teacher-centred instruction has embedded itself into the classroom culture and the mind-set of teachers, teacher educators and students. Yet, the relentless wave of student-centred reform efforts and trends in teaching and learning methodologies from internal and external sources face significant challenges to be accepted by teachers and effectively applied on a consistent basis in the classroom. Among international and comparative education researchers, Crossley (1999) states that "context matters" and he goes on to comment that it is the failure of many international development initiatives to give sufficient weight to the broad spectrum of theoretical insights, and to contextual and cultural issues, that lies at the heart of the dilemma (p. 256). Similarly, Liston and Zeichner (1991) argue that the current spate of school programmes and reform efforts give little attention to the social, political, and cultural context of local schools. Numerous studies
have noted that variation in the implementation of pedagogical change is often shaped through the interaction between the change and varying contextual conditions (Berman & McLaughlin, 1976; Boyd, 1992; Darling-Hammond, 1996; Datnow & Stringfield, 2000; Leu & Price-Rom, 2006; Rosenholtz, 1989; Tyack & Cuban, 1995). Hall and Hord (1987) also identified the important role of context as a significant gap in the CBAM theory and research.

According to Berman (1981), education change is an implementation-dominant process and the progress and outcomes of this process are heavily influenced by interactions of the innovation with local context factors. Richardson and Placier (2001) also recognize the important role of context:

The nature of teaching is complex and the effectiveness of which depends, in part, on the context in which one teaches ... Because teaching is complex, and contexts vary, teachers themselves need to make decisions and reflect on their situations and teaching in order to act appropriately in their classrooms (p. 914).

As defined by Anderson (2008), context factors include: perceived need and motives for change, quality of the innovation, fit with prior practices and teacher beliefs, external funding, sufficient resources and working conditions, quantity and quality of technical support, leadership, key stakeholders, and competing or complementary priorities and expectations. In terms of teacher change, Elmore observed, "improvement is more a function of learning to do the right things in the settings where you work" (2004, p. 73). In studies conducted by Datnow and Stringfield (2000), local context played an important role in the implementation and modification of reform models. This finding shows that "local educators actively engage in the construction of school reform, not just respond to external reform designs in a lockstep fashion, even when reforms are comprehensive and highly prescriptive (Datnow & Stringfield, 2000, p. 193).

Recognizing that the research and literature on the role of context in the teacher change process is immense, I have organized this brief literature review based on Boyd's (1992) definition of school context, which is comprised of (a) the school culture and (b) ecological factors or situational variables. These two dimensions interact to make up the context and they are difficult to separate in terms of their individual and collective effects during the change process. According to Boyd, each dimension is dependent upon the others and all parts react to changes in any of the other dimensions (1992).
The school culture

In order to understand how teachers change their instructional practice, a cultural analysis - "or the unwrapping of the black box of teaching and learning that reveals the different elements and complexity within" - is critical since teaching and learning form the foundation of every educational reform (Clarke, 2003, p. 39). The culture of a school can assist or act as an obstacle to teacher change. Boyd (1992) defines the school's culture as consisting of the attitudes and beliefs, school norms, and relationships within the classrooms, corridors, and in the community. Professional development, particularly in the developing world, involves transforming teachers' attitudes and beliefs. In order to facilitate changes in teachers' pedagogic practices, more effective teacher education programs are needed which address the realities of the classroom context and the needs of students (Feiman-Nemser, 2001; O'Sullivan, 2004). Looking specifically at the cultural appropriateness of innovative pedagogies like active learning, there are implied cultural notions related to teacher beliefs and attitudes of, among other things, adult-youth interactions and knowledge-learner relations. Alexander (2000) states:

[T]he notion of culture is paramount. ... Though there are undoubted cross-cultural continuities and indeed universals in educational thinking and practice, no decision or action which one observes in a particular classroom, and no educational policy, can be properly understood except by reference to the web of inherited ideas and values, habits and customs, institutions and world views which make one country, or one region, or one group, distinct from another (p. 5).

Just as teachers' attitudes and beliefs may facilitate or impede implementation of innovations in the classroom, the cultural norms and rules that govern behaviour can also exert a powerful influence on teacher change efforts. For example, researchers have found particular cultural norms that facilitate teacher change and school improvement include: norms of continuous critical inquiry, norms of continuous improvement, a shared sense of purpose, and norms of collaboration and collegiality (Boyd, 1992; Fullan, Bennett, & Rolheiser-Bennett, 1990). Within the school improvement literature, there has been an increased acknowledgement of the power of school culture and the importance of factors such as teacher collegiality to promote change (Fink & Stoll, 1998). Expanding on the idea of teacher collaboration and the sharing of ideas, Rosenholz (1989) mentioned that teachers who felt supported in their own
continuous learning and practice were more committed and effective. Others including Darling-Hammond (1996) and McLaughlin and Talbert (1993) have also stressed the importance of providing teachers with a context that supports their professional endeavours and nurtures a community of learners.

Focusing on the norm of continuous improvement, McLaughlin and Talbert’s (2002) longitudinal mixed-methods study examined links between district action and elements of school-level reform in California. Findings from that study determined that teachers' views of the district’s “professional culture” impacts their motivation, willingness, and capacity to engage in and trust a district-led reform agenda (p. 174). Building on the authors’ review of related literature, they also point to the strength and character of teachers’ school-based professional communities as an integral component to understanding teacher motivation and support for evolving instructional practice (p. 177). The authors contend that support for professional growth and school-based teacher communities can foster a teacher’s learning and instructional capacity through the sharing of knowledge with other teachers (p. 177). It may also nurture an environment that makes sense for teachers and values new ideas like risk taking, trust, and “mutual accountability for helping colleagues do their best” (p. 177). Given that aspects of teacher culture, generated from the working conditions of teachers, is plausibly the major obstacle to radical change, necessary and sufficient conditions for such change include transforming that particular teacher culture. Efforts to transform the teacher culture then require changes in the organizational and working conditions of teachers (Hatton, 1987). The next subsection will review literature that specifically focuses on teachers' working conditions or what I will define as the "ecology" of a school.

The school ecology

The resources available to teachers, the formal policies and rules, and the physical surroundings can have a significant impact on what teachers are able to accomplish. Focusing on teachers' working conditions in low-income countries, Hurst and Rust (1990) argue that the professional environment in which teachers are expected to function has a major influence on what teachers are able to accomplish. Hurst and Rust (1990) also note, "Trying out new ideas and practices is much more time and energy consuming than practicing what is familiar and routine" (p. 170). Other constraints facing teachers include large class sizes, limited opportunities for
collaboration, and autocratic managements styles that tend to subject teachers to stringent controls regarding what to teach and how to teach (Hurst & Rust, 1990). According to Fullan (1991), the physical arrangement and size of schools also play an important role in the feelings and attitudes of teachers and students. Depending on the physical layout of the school and opportunities or lack thereof for teachers to interact professionally may have an impact on teachers' sense of self-efficacy and capacity for innovation and continuous professional development.

In addition to the physical plan of the school, educational policies, particularly those following a top-down approach to decision making can present barriers or bridges to teachers' efforts to improve. In a review of the literature on top-down curricular reforms, Darling-Hammond (1990) concludes that policymakers have little understanding of teachers and are unwilling to invest in teacher learning at the school level that would be required to implement complex reforms. From an international perspective, the export, transfer, imposition or borrowing of educational policy and practice across the world continues (Crossley & Watson, 2003, p. 60; Steiner-Khamsi, 2006) - albeit there is a huge amount of variability on how this system “performs” in different cultural, religious, linguistic, and societal circumstances (Grigorenko, 2007, p. 182). For example, researchers and policy makers around the world have encouraged teachers to make a paradigm shift from the banking education pedagogical paradigm (Freire, 1970) to the learner-centred, activity-based paradigm (Ginsburg, 2006; Darling-Hammond and Bransford, 2005). Despite worldwide endorsements, shifting to this alternative paradigm is rarely achieved easily since the use of learner-centred pedagogies may be radically different from, and incompatible with, those firmly entrenched in low-income countries (e.g., see Alexander, 2000; Tabulawa, 1997). Among the challenges are: (a) the quantity and quality of pre-service and in-service professional development for teachers, (b) the material and physical conditions of the classrooms, (c) the inconsistency between the dominant information-memorization orientation fostered in curriculum and examinations and the constructivist notions of knowledge and understanding, and (d) the cultural appropriateness of the model of adult-child-knowledge and power relations on which learner-centred pedagogies are based (Ginsburg, 2006, p. 1).

Increasingly, the argument in both developed and low-income countries is that schools should become learning organizations “…where people continually expand their capacity to create results they truly desire, where new and expansive patterns of thinking are nurtured, where
collective aspiration is set free, and where people are continually learning to see the whole together” (Smith, 2001). In essence, schools need to find a way to work with or work around external policy.

A particularly interesting example of how policy is frequently modified to better support teacher development comes from Anderson and Kumari’s (2005) case study of a school improvement program at a secondary school in Karachi, Pakistan. According to the researchers, the school improvement and teacher professional development approaches were not rushed. The changes, as a whole, proceeded as a process of strategic policy adaptation to best meet the school's needs. This is an improvement over what is often witnessed in schools in low-income countries that adopt contextually inappropriate policies reflecting a “cargo cult” assumption about the transferability of Western policies and practices to local South Asian contexts (Cowan, 1999, p. 73). Through a process of constant reflection on school development and recognition of the importance of contextual and cultural issues, teachers and administrators at the school appeared to be in a strong position to profit from their professional development initiatives leading to a more sustainable program for improved student learning.

Similar findings can be found in Datnow and Stringfield's (2000) study in which local context played a very important role in the implementation of reform models. Findings from their study revealed that local conditions frequently led educators to modify policy. This finding points to the fact that local educators actively engage in the construction of school reform, not just respond to external policy mandates and reform designs in a lockstep fashion, even when reforms are comprehensive and highly specified. Teachers inevitably implemented reforms in terms of their own "pedagogical pasts" (Tyack & Cuban, 1995). In response to critics of centralized education policies, Richardson and Placier (2001) suggest that more attention should be given to the conditions of local implementation. Regarding the need for more professional development for teachers, Richardson and Placier (2001) state, "staff development can be a top-down or bottom-up strategy for teacher change and should be based on state or district priorities or teacher decisions" (p. 932).

In helping create a healthy context for teacher change, the physical environment of the classroom including variables such as the way in which the classroom is arranged, the equipment and materials that are available and the way in which students are seated can have a great influence on a teacher's effectiveness (Ainley, 1987; Bennett, 1987; Leu & Price-Rom, 2006).
According to Hall and Hord (2006), although it may seem obvious, the planning and provision of resources, along with policy implications, represent an important means by which implementers are enabled to initiate implementation and sustain the change process. As teachers become more skilled using an innovation, their resource requirements may also change. To illustrate the link between the quality of school facilities and the quality of schooling, Urwick and Junaidu's (1991) study of Nigerian primary schools found four aspects of teaching: (a) the extent to which teaching methods were student-centred, (b) the variety of activities organized during lessons, (c) the variety of methods of communication used during lesson delivery, and (d) the frequency with which assignments and homework were given, were affected by the provision of textbooks, teaching aids, along with writing materials and furniture. Other resource factors identified by Urwick and Junaidu (1991) included ancillary services such as toilets, clean drinking water, classroom cleanliness, textbook and furniture availability, as well as space.

Another important resource that can affect classroom learning conditions is the time required for learning activities to take place. Finding time to engage in activities is often cited as one of the key resources for teacher change most often lacking especially factors including time for planning, time for staff development, and time for sharing ideas (Boyd, 1992; Hall and Hord, 2006). In an effort to create a supportive context for teacher change, Hall and Hord (2006) recommend that school administrators and facilitators find or create sufficient time to devote to the change effort: "...scheduling time for teachers to meet together to discuss successes and problems during implementation has proved to be valuable to change efforts" (p. 191).

Chapter summary

In this chapter I reviewed the literature that situates the core concepts of this dissertation, focusing on research in the broad field of pedagogical innovations and teacher change, and applying important ideas to findings of studies on teacher development in low-income country contexts, when possible. Throughout, it became clear that teachers' understanding and use of innovative pedagogies like active learning are shaped by their classroom teaching and learning experiences. As well, the role of teachers' prior experiences, participation in a community of learners, and the context in which they work have a profound impact on their conceptions of teaching, learning, and schooling.
In the following chapter I outline the research methods used in this dissertation. Focus is directed toward: the context of the study, the methodological perspectives that frame the study, data gathering and analysis procedures, the ethical considerations, and the limitations facing the researcher while conducting research in Bangladesh.
Chapter 3: Research Design and Methodology

The purpose of this study is to broaden our understanding of how primary school teachers in Bangladesh adapt and implement educational innovations such as active learning in the classroom. This chapter will review the research questions, provide an overview of the research design, discuss the methodology, and present the participants, supplementary data sources, analysis and synthesis strategies, and the limitations of this study. This study was guided by the following three primary research questions:

1. How do teachers adapt and implement active learning methods in the classroom?
2. How do teachers understand the concept and practice of active learning in the classroom?
3. What role does context play in shaping the implementation of active learning?

Qualitative research rationale

For the purpose of this study, I chose the qualitative research paradigm because I believe that research on teacher change should take place in natural settings where human behaviour and events occur (Creswell, 2003). Corbin and Strauss (2007) state that perhaps the most important reason that a researcher chooses to do qualitative research is so that the world may be viewed vicariously from the perspectives of the research participants, with the hope of developing empirical knowledge from the discoveries. Qualitative research stresses that any phenomenon, including teaching, has meaning only within a context, which illuminates its history, development, complex interrelationships of causes and consequences that affect behaviours, underlying assumptions, current location and future trends (Goetz & LeCompte, 1984; Merriam, 1998, Niyozov, 2001; Schram 2003). A qualitative research strategy focuses on meanings and attempts to understand the culture of those being studied. It involves collecting and studying a variety of materials that describe participants' perceptions and experiences and the way they make sense of their lives (Denzin & Lincoln, 2003). Punch (1998) outlines that for qualitative researchers the range of possible sources of data may include observations, interviews, or documents, or what Wolcott (1994) refers to respectively as data gathered from experiencing, enquiring, or examining. Patton (2002) identifies some primary features of qualitative research studies:
Qualitative methods facilitate study of issues in depth and detail. Approaching fieldwork without being constrained by predetermined categories of analysis contributes to the depth, openness, and detail of qualitative inquiry. Qualitative methods typically produce a wealth of detailed information about a smaller number of people and cases [than in quantitative research]. This increases depth of understanding of the cases and situations studied but reduces generalizability (p. 14).

The features of qualitative research described by Corbin and Strauss (2007), Denzin and Lincoln (2003), Patton (2002), and Punch (1998) are useful when considering how the use of qualitative methods could add depth to our knowledge and understanding of teacher change.

My research is also located broadly within the field of comparative, international and development education, which particularly lends itself to qualitative inquiry. Among some of the earliest comparativists in education, Sir Michael Sadler’s benchmark lecture at the turn of the twentieth century led to increased recognition of the importance of cultural context in comparative education. As Sadler pointed out:

We cannot wander at pleasure among the educational systems of the world, like a child strolling through a garden, and pick off a flower from one bush and some leaves from another, and then expect that if we stick what we have gathered into the soil at home, we shall have a living plant (cited in Crossley and Vulliamy, 1984, p. 195).

Sadler’s seminal work embodied a combination of intellectual challenge and a concern for policy and practice that was both contextually sensitive and critical of the search for universal principles that was inspired by his more positivistic predecessors including French scholar Marc-Antoine Jullien (Crossley and Watson, 2003, p. 51). Subsequent comparativists including Isaac Kandel and Nicholas Hans, stressed the need to understand the cultural, social and historical setting of individual societies if they are to fully understand why education systems are the way they are, and the values they seek to transmit (Watson, 1999, p. 238). Recognition of the value of qualitative research in low-income countries was hinted to as early as 1989 by Fuller and Heyneman, who suggested:

Research in developing countries should provide more textured portraits of life in classrooms ... Anecdotes abound regarding the chalk-and-talk pedagogical method employed by many Third World teachers. But we have few concrete descriptions of how
teachers interact with pupils, how student exercises are structured and evaluated, and what forms of knowledge are communicated (p. 17).

Despite the tendency for research on education in low-income countries to focus more on discussion of policies and system-wide features, my study focuses on teacher practice and the realities of schooling at the classroom level; a perspective supported by numerous comparative, international and development education researchers (Crossley & Vulliamy, 1984; Hoffman, 1999; Vulliamy, Lewin, & Stephens, 1990).

Methodological perspectives

The purpose of this research is to understand how Bangladeshi schoolteachers adapt and implement active learning into their practice at the NGO's primary schools. Based on the purpose of the research and the research questions that were developed, I chose to adopt a pragmatist approach to the inquiry using multiple qualitative methods to gather data. The following section describes and justifies the philosophical underpinnings of the pragmatist approach for this study.

Rationale for choosing a pragmatist approach

Paradigms are the worldviews or belief systems that define ways of doing empirical research in social science (Kuhn, 1962). Since the 1960s, "paradigm wars" have debated the superiority of two major social science paradigms. These two paradigmatic assumptions or approaches being debated saw advocates of the interpretivists, or constructivist, paradigm (e.g., Lincoln & Guba, 1985), and the post-positivist, or post-empiricist, paradigm criticizing one another's beliefs and assumptions regarding worldviews, methods of study, and the validity of outcomes for research.

Proponents of the pragmatic position maintain that philosophical differences exist between various paradigms of inquiry but "pragmatism can overcome [such] seemingly logical contradictions" (Patton, 2002, p. 127). Punch (2009) contends, "the essential idea of pragmatism is to reject the either-or choices and metaphysical concepts associated with the paradigm wars, and to focus instead on 'what works' in getting research questions answered" (p. 291). The pragmatic stance acknowledges differences in paradigmatic views, but argues they are of little value in guiding practice (Tashakkori & Teddlie, 2003). In this situation, methodological decisions should be made that are most practical and maximize what is most suitable for a given
context. Thus, while recognizing the importance of different paradigms, I decided to adopt what Patton (1980) referred to as a "paradigm of choices", so as to not be limited or inhibited by allegiance to one research paradigm over another.

**Ethical considerations**

This study was subjected to ethical review, which was approved by the Ethical Review Board at the University of Toronto, on September 15, 2009 (see Appendix 2) and renewed on January 10, 2011 and September 9, 2011 (Ref: 24375). Approval for the project was also granted by the NGO that participated in the study on June 9, 2009.

This study followed the procedures required by the Ethical Review Board at the University of Toronto. To protect participants’ identities, I used pseudonyms for individuals, schools, and organizations. I also ensured that proper permission to study participants at research sites was received in writing from each participant as well as the executive director of the NGO (see Appendix 3). During the interview process and during the translation of data from Bengali into English, my translators were required to sign letters of confidentiality to ensure that participant’s identities were fully protected and that all data collected remained confidential (see Appendix 5). According to Fontana and Frey (2005), a qualitative researcher studying a culture other than his or her own should "find an insider - a member of the group being studied - who is willing to be an informant and act as a guide and translator of cultural mores and, at times, of jargon or language" (p. 707). In my case, two guides were provided by the NGO. They acted as my interpreter during school visits and interviews and also assisted with countless logistical tasks throughout the data collection process.

Throughout my time in the field, I tried to be cognizant of ethical issues relating to my position of power, authority and privilege, as a Western outsider and as a doctoral candidate. I involved participants collaboratively in the development of the Innovation Configuration Maps prior to conducting classroom observations. This helped to ensure teachers were fully aware what the focus of my classroom observations were during the course of the study. I tried to be honest and respectful throughout the research process, prioritizing participants’ feelings and needs over my own. This applied to several aspects of the process, including where and when interviews were conducted as well as the types of questions I asked and the manner in which I asked them.
Participant informed consent procedures

When approaching teachers to request their participation, I explained the nature and purpose of the study and how the data will be recorded and used. This included an explanation of the way in which confidentiality and anonymity will be ensured. I was particularly careful to ensure that participants clearly understood that no link could be made between a particular participant and the information a person provided. I explained the informed consent procedure in detail to anyone interested in participating in my study. Participants were provided with both English and Bengali versions of the letter of invitation to participate and the informed consent documents in order to ensure they fully understood all matters pertaining to their participation. To ensure my research was conducted in an ethical manner, I made it clear that participation in the study was voluntary and participants were free to withdraw at any time and without penalty. Participants were asked to read both documents and invited to ask any questions or share any concerns regarding their participation. Those questions/concerns were addressed before any data collection began.

Study context

The NGO's primary education program began in 1985 and at the time of this study was managing 112 primary schools for children in relatively remote rural communities in northeast Bangladesh. Each school is constructed on community-donated land. The school buildings are constructed using bricks based on a standardized design that includes three classrooms and a small office/meeting room (see Photo 3.1). According to the NGO, the primary education program aims to develop and demonstrate a high quality education model in an inclusive non-threatening classroom environment. Each of the NGO's schools offers a pre-school program (age 5) to grade five (approximately age 10). The NGO conforms to the government primary school curriculum from class one to class five. The schools also use the government-produced textbooks alongside supplementary materials designed by the NGO to make the curriculum more child-centred and user-friendly.
The NGO aims to provide quality education in all of its schools through the use of the most effective teaching methods available. Currently, these methods are grouped under the title “active learning”. The NGO defines active learning as “many varied teaching techniques, all of which follow the principle that the key to successful learning is being fully engaged and being an active partner in discovery, rather than a passive receiver of knowledge” (NGO, 2007).

According to a program document on curriculum and methodology, “the teacher who implements active learning methodologies in the classroom must have a solid understanding of active learning principles and goals. He or she needs to be a skilled practitioner and an active partner in delivering the curriculum” (NGO, 2007).

In 2009, the NGO received a large grant from international donors for their core programs, which include: adult literacy, livelihood support, and the primary education program. This additional funding enables the NGO to continue to support its existing 112 schools and gradually expand its primary education program to provide an additional 400 schools for disadvantaged communities in remote and often hard-to-reach rural areas of Bangladesh.

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2 Each school is made of brick and the roof is made of corrugated tin. Every school has three classrooms, a small office, toilets for boys and girls, and a hand pump for clean water. None of the schools have electricity. The local community or the NGO provides maintenance for the school. Staff and students are responsible for keeping classrooms and the surrounding area clean.
**Participants**

The participants for this study were selected through a pragmatic process involving their initial willingness to volunteer as participants in the study. In addition, I also purposefully selected those teachers whose results may provide the richest data, thus contributing to our understanding about how teachers adapt and implement active learning into their teaching practice.

**Principal participants**

The main participants for this study consisted of a selection of Bangladeshi primary school teachers working for the NGO’s primary education program. My participants volunteered their time, thoughts, and classroom for the purposes of this study for approximately 10 months. According to Crossley and Watson (2003), “to understand an education system other than one’s own in real depth ideally requires a long period of time spent within the ‘other’ context, or at least numerous repeated visits until the researcher has an instinctive feel for what makes that society tick” (p. 39).

The initial selection of participants or sampling procedure in the study involved probability sampling. Although probability sampling is more typical for collecting quantitative data, I believe it is important to be aware of the social context in which the participants live and work and take account of it in the selection of research participants. This approach is in line with Kirby, Greaves, and Reid, (2010) who argue, "no researcher wants to exacerbate existing social exclusions". As a medium-sized NGO, teachers come to the classroom with the same initial teacher training and participate in the same in-service professional development throughout the year. Furthermore, awareness among teachers about the study was high and I felt it was necessary to initially ensure all teachers felt they had an equal opportunity to be a participant in the study.

To ensure equal representativeness across the teaching population in the sample, a stratified random sampling strategy was used (Berg, 2001; Punch, 1998). At the time of the study there were 340 teachers working at one of the NGO's 112 schools, which are located across seven large geographic areas or school catchment areas across northeast Bangladesh. There are three teachers in each school, one whom also has head teacher/principal responsibilities. Stratifying the population of teachers was done by selecting a random but equal sampling fraction of teachers from each of the school's catchment areas. The outcome of the stratified random sample was the
selection of an initial cohort of 51 teachers. Among this sample of teachers an effort was made to ensure that approximately 25% of the teachers were male and no more than two teachers per school were selected.

During the first phase of the study, the cohort of 51 teachers was asked to provide a written statement and complete a questionnaire. In order to reduce the number of participants for phase two of the study, the next stage of sampling was done in a deliberate way and the selection of participants or sampling procedures involved stratified purposive sampling (Patton, 2002; Punch, 1998). The logic and power of purposive sampling lies in selecting “information-rich” cases for study in depth (Merriam, 1998, p. 61). Through a careful content analysis of both the written statements and the self-administered questionnaires completed earlier by the 51 participants, the final selection of 10 participants was accomplished.

The 10 research participants for phase two were selected based on an extreme case sampling strategy (Teddlie & Yu, 2007). Extreme case sampling involved selecting participants whose written statements represented optimal levels of pedagogical content knowledge, experience, and in-depth reflection regarding their concerns about using of active learning methods in their classrooms. Additional participant criteria considerations included identifying participants with varying levels of teaching experience, geographic location, and willingness to participate in multiple classroom observations and interviews during the second phase of the study. Among this sample of teachers an effort was also made to ensure that approximately 25% of the teachers were male and no more than one teacher per school was selected. Table 3.1 provides information regarding the final cohort of 10 teachers selected to participate in both phase one and phase two of the study. It should be noted that the information in this table is provided solely for contextual information for the reader.
As shown in Table 3.1, three participants hold two designations and all participants have two grade levels of teaching responsibility. Each school day is split into two shifts such that preschool, grades one and two are offered in the morning shift (10:00 AM to 12:30 PM) and grades three, four and five are held in the afternoon (1:00 PM to 4:00 PM). The same teachers are responsible for teaching during both shifts of school. Generally the most senior teacher is also the school 'Principal' and he or she will be responsible for the majority administrative matters in addition to his or her teaching responsibilities.
Secondary participants

Secondary participants, refers to a smaller group from the NGO’s primary education program that work as senior program officers, curriculum and learning material specialists, and teacher trainers. I applied specific criteria in selecting five participants beyond asking for their consent and willingness to be involved in the study (see Table 3.2). Furthermore, the selection of secondary participants endeavoured to overcome shortcomings of some studies that concentrate solely on teachers and therefore "fail to connect with other realities on the job and other 'voices' of a range of teachers, not to mention the voices of students, parents, and administrators" (Hargreaves, cited in Fullan, 1994, p. 7).

Table 3.2 Secondary participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Position at NGO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alam</td>
<td>Senior Administrator</td>
</tr>
<tr>
<td>Parvin</td>
<td>Senior Administrator with Primary Education Program</td>
</tr>
<tr>
<td>Azom</td>
<td>Senior Program Officer</td>
</tr>
<tr>
<td>Akash</td>
<td>Senior Program Officer</td>
</tr>
<tr>
<td>Shafiqah</td>
<td>Program Officer</td>
</tr>
<tr>
<td>Kaniz</td>
<td>Senior Program Officer</td>
</tr>
</tbody>
</table>

Research design

A two-phase multiple method qualitative research design was used in this study (see Appendix 6). Considering strengths and weaknesses inherent in different research methods, each participant completed an open-ended statement of concern about active learning and a self-administered questionnaire to collect necessary background information. Data from the open-ended concerns statements and questionnaire provided by the first cohort of 51 teachers was analyzed primarily for the purpose of identifying participants for phase two of the study. The initial analysis also provided some preliminary insights into common teacher concerns. The sampling procedure used to identify the final 10 participants was purposive. The sample was purposive in that there was “some purpose or focus in mind” when selecting participants (Creswell & Plano Clark, 2007; Punch, 2009, p. 162).
In the second phase of the study, three semi-structured qualitative interviews and between one and three classroom observations occurred with each of the participants. Additional individual semi-structured interviews took place with the secondary participants to better understand their general impressions and expectations about the implementation of active learning methods in the NGO's primary schools. Integrating data sources provided rich and diverse accounts of local (teacher) knowledge and practice of the active learning methodology complemented by alternative perspectives from other staff working with the NGO's primary education program. By using multiple research methods, the potential complementarity of different types of data allowed for clarification and elaboration of results during later data analysis (Caracelli & Greene, 1997).

Data collected during the first phase of the study specifically tried to address the research question: What concerns do teachers express about implementing active learning methods? In particular, teacher responses to an open-ended statement of concern based on the Stages of Concern (SoC) component of CBAM and a brief pre-interview questionnaire focusing on personal background information about each participant were collected, translated, and analyzed (Hall & Hord, 2006; Newlove & Hall, 1976). Information obtained from the statement of concern and the questionnaire offered insights also related to the other core research questions that address teacher cognition and the role that context plays in shaping the implementation of active learning. The initial assessment of the open-ended statements of concern helped guide the selection of teachers and principals for further in-depth study during the second phase of the study. Secondly, the initial analysis of the participants' open-ended concern statements highlighted potential themes or issues that were utilized to help guide and complement the semi-structured interviews and class observation process during the next stage of the study.

Phase two of the study involved additional qualitative research methods including multiple interviews, classroom observations, and the compilation of field notes. Specifically, two diagnostic dimensions of CBAM - the Levels of Use (LoU) interviews and Innovation Configuration (IC) Maps were employed to elaborate upon the results obtained from the open-ended concerns statements collected during the first phase of the study. To assess teachers’ LoU regarding active learning methods, I utilized one of CBAM's established qualitative interview instruments. Consistent with the pragmatist approach, the decision to use a modified version of
an existing CBAM instrument (i.e., Hall, Dirksen, & George, 2006) was made according to reasons proposed by Punch (2009), who states:

We would need good reason for passing over an already existing instrument, particularly if the variable is a central variable in a research area. For this type of variable, I would not recommend developing a new measure, especially if a reasonable instrument is already available (p. 243).

The LoU focused interview uses a branching technique, and depending on what the interviewee (teacher or principal) says, the interviewer asks questions from a particular branch of the interview protocol (Hall, Dirksen, & George, 2006). The focus of the LoU interview addressed one of the sub-questions of the study that asked, "How do teachers use active learning approaches in the classroom?" According to the developers of the LoU instrument, it can potentially give researchers a means to collect data, which, when complemented with other qualitative and quantitative measures, helps interpret the change process and assess the extent of implementation of an innovation such as active learning (Hall, Dirksen, & George, 2006). The SoC and LoU strategies together provide a powerful description of the dynamics of a teacher’s involvement in the process of pedagogical change: one dimension focuses on feelings and the other dimension focuses on behaviours. According to Hall, Dirksen, and George (2006), each teacher will have his or her own SoC and LoU of a particular innovation although groups of teachers may cluster into similar patterns.

A third major CBAM dimension applied in this study was the IC construct. While the IC construct does not focus on the individual teacher directly, it does attempt to describe the innovation in action. The IC refers to the “what” of change and the primary means of collecting qualitative data about this dimension are through repeated direct classroom observations (Hord, Stiegelbauer, Hall & George, 2006). The IC clarifies what the innovation or change actually looks like as it is made operational by the implementer (teacher or principal) along a continuum from high-quality implementation to least desirable practices (Hord, Stiegelbauer, Hall & George, 2006, p. 2). An integral part of this third CBAM dimension includes IC Maps. During this phase of the study an IC Map was developed with support of teachers, teacher trainers, and senior program officers involved with the primary education program at the NGO. Through an iterative process of collaboration, contributors to the development of the IC Map helped identify seven major components as well as multiple dimensions and variations of the active learning
methodology (see Appendix 7). The IC Maps or "checklists" were completed during each classroom observation. Due to the availability of teachers, three class observations and the corresponding IC Maps was completed for seven of the teachers, while two class observations and IC maps were completed for two other teachers, and one class observation and IC Map was completed for one teacher for a total of 26 completed IC Maps. The IC Map was used in conjunction with other CBAM diagnostic dimensions to describe variations in teachers’ implementation of active learning methods. According to Hord et al., (2006), whether an IC Map is used for research, for evaluation or professional development purposes “it creates a mental image of the innovation” and helps teachers better understand what it means when implemented in his or her classroom (p. 45).

In addition to the focused data collected using the CBAM instruments, additional semi-structured interviews with teachers, principals, and supplementary participants occurred during the data collection period. The researcher’s aim was to address the additional theoretical pieces of this study. The second round of semi-structured interviews with teachers and principals addressed social constructivist theory of understanding learning and focused on the cognitive side of teacher change by asking participants questions to help answer “How do teachers understand the concept and practice of active learning?” The third round of semi-structured interviews with principal participants focused on the role/influence of social and professional context shaping the teacher change process and asked participants questions to increase understanding about "What role does context play in shaping the implementation of active learning?"

Due to the sequence of data collection methods, which was consistent with a modified grounded theory approach, or emergent design, analysis of data from my interviews with teachers and principals aided in the development of interview items used with the secondary participants. A grounded theory approach to data gathering and analysis is discussed in more detail later in this chapter. This set of interviews provided further insights and elaboration of teacher's use of active learning methods from the perspective of various support personnel working with the NGO's primary education program.

**Data collection tools**

The following sections outline the methods used to collect data in the study. Several types of data collection were employed, using multiple methods including a basic questionnaire for
background information on each participant, writing samples in the form of an open-ended concerns statement, semi-structured interviews, and class observations.

**Questionnaire for background information on participants**

Basic background information on each participant was collected at the beginning of the data collection process. Each participant was asked to complete a pre-interview questionnaire containing nine questions (see Appendix 8). Participants were given a choice of completing the questionnaire in English or Bengali. All participants completed the Bengali version.

**Open-ended statements of concern**

During phase one of data collection, meetings were arranged at regional offices operated by the NGO in four different locations across northeast Bangladesh. A total of 51 teachers working with the NGO's primary education program who volunteered to participate in the study attended one of these initial meetings. With the help of my two translators, introductions and an explanation of the study took place along with completion of necessary participant consent formalities. Once teachers understood their role as participants, they were asked to complete the first diagnostic instrument of the Concerns Based Adoption Model (CBAM). According to the developers of CBAM, there are times when it is useful to have teachers describe in writing their feelings and perceptions or "concerns" (Fuller, 1969), about a particular innovation. The open-ended statement of concerns uses a standard format initially developed by Fuller and Case (1972) and subsequently used in research on the change process (Newlove & Hall, 1976; Anderson, 1997; Hall & Hord, 2006). Collecting information from teachers about their concerns was relatively straightforward. Participants were given a three-page handout written in Bengali (see Appendix 9). The first page provided the participants with basic information about privacy issues related to their participation; it also asked for participants' names, and an explanation as to how to properly complete the research instrument. The second page asked the open-ended question: "When you think about using active-learning, what are you concerned about?" The remainder of the page was left blank so that teachers could write a narrative of one or more sentences describing their concerns about using active learning. The third page collected additional personal data using the pre-interview questionnaire.
**Documents**

During the first phase of the study, background “archived” data was collected at the regional and central offices, school, and classroom levels (e.g., NGO primary education program plans, research reports, school reports, student achievement data). In grounded theory studies, documentary data may be collected in conjunction with interviews and observations and can be important in triangulation, where an overlapping set of different methods and data types is used (Punch, 1998). The content focus of the documents I collected contained specific and relatively detailed information about the primary education program and the NGO's conceptions, expectations of active learning and teacher training programs. I also managed to collect a number of small-scale reports that provided evaluations of particular instructional strategies including a reading scheme program and a new approach to group work implemented at a small number of the NGO's schools. However, before I made extensive use of any of the written documentation collected, informal checks were made with senior officers of the NGO as to the likely credibility and validity of such data (Mason, 1996).

**Interviews**

The second phase of the study involved three school visits to collect data using interviews, classroom observations, and field notes. While the purpose of conducting interviews is to learn about the lived experience of other people and the meaning they make of that experience, interviewing also provides access to the context of people's behaviour and thereby provides a way for researchers to better understand and appreciate the meaning of that behaviour (Seidman, 2006). There are different formats for interviews, which are usually described on a continuum of control from structured, semi-structured, to unstructured interviews, which may be conducted individually or in a focus group (Fontana & Frey, 2000; Kirby et al., 2010). Interviewing lends itself to subjectivity and experiencing the moment, and it was my intention to situate each participant's experience, and my own experience in the interview process within this particularly unique Bangladeshi context.

In my study, interviews were conducted with two groups of participants. A purposive sample of 10 teachers participated in a structured interview using a branching interview format and two semi-structured interviews utilizing an interview guide approach (Tashakkori & Teddlie, 2003). Near the end of the data collection process, five secondary participants individually...
participated in a semi-structured interview that also used an interview guide approach. All interview guides were first designed with a priori categories and later supplemented with emergent themes based on data collected from documents, the open-ended concerns statements, the pre-interview questionnaire, and informal ad hoc conversations with staff of the NGO. Each interview protocol underwent pilot testing with teachers working for the NGO but not directly involved in the study. Based on the accuracy and consistency of the results during pilot testing, some modifications were made to help refine the interview instruments.

**Levels of use interview**

During phase two of the study, the first round of face-to-face interviews with teachers involved a structured interview format that followed a focused interview protocol - devised by the CBAM developers - to determine a teacher’s levels of use (LoU) or non-use of active learning strategies in his or her classroom. The LoU dimension of CBAM is a “behavioural phenomenon presenting behavioural profiles of eight different approaches to using an innovation” (Hall, Dirksen, & George, 2006, p. 5). It does not deal with attitudes, emotions, or feelings nor does it focus on the quality of the innovation. Instead, the focus of the interview process is to determine what teachers are doing or not doing with the innovation (Hall, Dirksen, & George, 2006).

According to Punch (1998), in a structured interview the respondent is asked a series of pre-established questions, with pre-set response categories and there is minimal room for variation in response. The LoU focused interview uses a “branching technique, and depending on what the interviewee says, the interviewer asks questions from a particular branch of the protocol” (Hall, Dirksen, & George, 2006, p. 17). Once it was established that the participant was or was not a user of the innovation (i.e., active learning methods), the appropriate branches are followed and the appropriate LoU interview questions are asked. The basic branching-interview protocol used during the study is presented in Appendix 10, and the basic interview questions are also presented in Appendix 11. The interview is called a focused interview because it starts with more open-ended questions and proceeds with a sequence of questions that close in on a particular subject. Each of the branching questions in the protocol is followed by a series of probing questions that are based on a LoU matrix (see Appendix 12) developed based on a set of seven categories or dimensions that compose each LoU including: knowledge, acquiring information, sharing, assessing, planning, status reporting, and performing (Hall, Dirksen, & George, 2006).
Constructivism- and context-focused interviews

Following the LoU structured interview, all subsequent interviews with participants employed a semi-structured interview format. The semi-structured interview involves one-on-one interaction between the interviewer and the interviewee with some variation in the order and format of the questions. In semi-structured interviews the researcher identifies the broad categories to be investigated and generates questions. Probe or exploratory questions can be used to extend comments, provide explanations, give the rationale for practice, and explore responses more deeply (Kosnik, Cleovoulou, & Fletcher, 2009). All probing points were prepared in advance, or asked ad hoc during the interview process. In some cases, questions were added or altered in relation to the background or role of the particular participant. A key objective of this study was to conduct research with an interest in learning about other's stories and experiences relating to education and schooling, and interviews complement this interest (Seidman, 2006). Two semi-structured interviews took place with teachers over a period of two and a half months. The first semi-structured interview with teachers focused on social constructivist issues (see Appendix 17) and the second interview addressed contextual (professional, social, and cultural) conditions (see Appendix 18) impacting on teachers' professional practice. Apart from the interviews with teachers, a smaller group of five secondary participants individually took part in one semi-structured interview that addressed the impact that social constructivist and context issues have on the teachers' ability to adapt and implement active learning in their classrooms (see Appendix 19).

In each semi-structured interview, the development of research questions were generated based on a grounded theory approach to data collection and data analysis. Grounded theory can work particularly well when using semi-structured interviews as a data collection method because the flexibility of the grounded theory approach allows the researcher to develop questions and pursue areas of interest as they arise in the interview process (Kosnik et al., 2009). Using grounded theory to guide data collection can be beneficial because: (a) the researcher keeps looking across the whole data set, (b) the context of the research is considered, and (c) subsequent data gathering (e.g., additional interviews) are informed by the emerging theory (Kosnik et al., 2009). Furthermore, interviewing in four stages is particularly suited to a grounded theory approach because interview questions can be guided by theoretical developments that
emerge from analyses of previous data; this continues until “theoretical saturation” is achieved (Punch, 1998, p. 167).

Classroom observations and Innovation Configuration Mapping

As a multiple method study, the inclusion of classroom observational data is seen as extremely important. Rea-Dickins and Germaine (1992) suggest that classroom observations provide opportunities to observe teachers' actual instructional practices. By combining observations with other measures, including documents, questionnaires, and interviews, the researcher should be able to gather relatively “objective first-hand” information (Johnson & Turner, 1998, p. 314). Repeated and non-evaluative classroom observations - guided by Innovation Configuration (IC) Map components focused on the innovation (active learning) in action. The IC Map clarifies what the innovation or change actually looks like along a continuum from high-quality implementation to least desirable practices (Hord, Stiegelbauer, Hall, & George, 2006).

The development of the IC Map was a collaborative and iterative process between me and four senior education officers working at the central office that are closely involved in the development and design of the active learning program (see Appendix 7). With the assistance of my two interpreters, we first conducted informal meetings with staff from the NGO's teacher training division and the curriculum and materials development team. Each participant was asked four questions created by CBAM developers to help identify major components of the innovation (active learning), the dimensions of the components, and the range of variation within each major component. The four questions were: What is active learning? What would I see in a classroom where active learning is in use? What do you consider the most essential components of active learning? How would you like to see active learning used in the classroom? This first step helped us to identify a list of tentative components, or the major operational features, of active learning.

Next, my interpreters and I visited three schools to conduct classroom observations. While observing each class, we checked to see how suitable our draft IC Map was compared to what teachers and students were engaged with during their lessons. These visits also provided us with an opportunity to refine and reword particular dimensions and variations as well as add or remove variations as needed. One of the most demanding tasks was sequencing the variations of each dimension to allow for comparison of actual implementation to the "ideal" or high-fidelity
implementation specified by the developers of the IC Map. The third step in the development of
the IC Map was to return to the developers to discuss the draft of the IC Map with our co-
collaborators. With the assistance and advice of the various senior education officers, we were
able to standardize the IC Map's format, and agree on appropriate terminology for each
component, dimension, and variation. Through this interactive process, we were able to develop a
detailed definition of active learning that is contextually appropriate and unique to the primary
schools and teachers involved in the study.

For the purposes of this study, we developed a "multiple-dimension component" IC Map
format (Hord, Stiegelbauer, Hall, & George, 2006, p. 20). As shown in Appendix 15, there are
seven components: (i) classroom environment / organization / management, (ii) teacher uses
supplementary materials, (iii) teacher uses an active learning approach, (iv) teacher differentiates
support for students, (v) teacher uses cooperative learning / group learning, (vi) teacher actively
engages students, and (vii) teacher competency. Each component and its related dimensions are
listed vertically on the IC Map. As one moves horizontally across the IC Map from "e" variations
on the right side toward the "a" variation on the left, the behaviours and practices described
increasingly approach the more ideal practices.

An IC Map was completed for each of the 26 school visits. Each completed IC Map
involved an assessment of 27 different descriptions of active learning. Over a period of six
months, I observed seven of the teachers for a full shift of school on three different occasions,
two of the teachers for a full shift on two occasions, and I managed to visit one of the teachers for
a full shift of school during one school visit. I was not able to visit every teacher three times at
their school for reasons including: a) teacher illness, b) school was inaccessible due to monsoon
flooding, c) teacher was attending in-service training, and d) teacher was unexpectedly
transferred to another school. During each classroom observation, I focused on two subject areas
with a total of four subject areas being observed over the data collection period. The subject areas
observed included: Bengali reading and creative writing, English, math, and environmental
science.

The opportunity to observe teachers deliver lessons in multiple subject areas provides a
more complete picture of their teaching strengths and weaknesses across subject areas. It has
been argued by Coburn (2001) that conducting subject-specific observations over several days
can provide a greater sense of the flow and continuity of instructional techniques being used by
teachers. Additionally, conducting observations at different times of the year can allow for greater insight into the influence that contextual and environmental factors potentially have on the change process over time (Coburn, 2001). During class observations, I took detailed notes describing what the teachers and students were doing. Frequently, I would refer back to these notes as I was completing or re-checking the IC Map checklists after the observation was completed.

**Field notes**

Secondary data sources including field notes (i.e., observations inside and outside the classrooms, reflections, memos) were compiled throughout the data collection period. These field notes were an important source of data since “thick, rich description provides the foundation for qualitative analysis and reporting” (Patton, 2002, p. 437). Throughout the data collection period, I made extensive use of jotted notes in two small notebooks that I could carry around during class observations and various trips to field sites. I then tended to type up detailed field notes each evening on my laptop. Naturally, informal conversations that occurred outside of formal interviews were a part of my daily activities. There were also general conversations that aided in understanding the NGO and education issues in general. Such data provided further contextual understandings of how teachers adapt and implement active learning methods into their classroom practice.

**Data storage and access**

The management of data (i.e., collection, storage, and retrieval) began during my fieldwork in Bangladesh and continued for the duration of data analysis and writing up my findings. To organize my data, I created a separate file for each participant. Data in all its forms was stored in a safe, confidential location, not accessible to anyone other than myself as principal and sole investigator. During fieldwork in Bangladesh, the research data was kept locked in a safe place at my residence. When in Canada, I stored the data in a locked cabinet in my office. I also kept copies of all digital files on an external hard drive and in a secure online data storage site. Although the hard drive on my laptop computer crashed during data collection, I was able to retrieve all my files from my hard drive and was grateful that I had kept an additional back-up of all my files on an online data storage site. Both computer storage devices were password-protected systems.
Methods and procedure of data analysis

With the exception of the recent work done by Anderson and Nderitu (2002) on school improvement in Mombasa, Kenya, research that has used the CBAM methodology as a tool for guiding implementation of particular innovations and as a tool for evaluating such efforts in low-income country settings is rare. When there is little prior research upon which to base a study, Kosnik, et al., (2009) suggest that other strategies may need to be employed, such as those articulated in grounded theory (e.g., Corbin & Strauss, 2007; Glaser & Strauss, 1967). Grounded theory, which Punch (1998) describes as “a method, an approach, and a strategy whose purpose is to generate theory inductively from data” is a popular research strategy for qualitative analysis (p. 163).

Grounded theory

The data analysis methods of grounded theory work particularly well with interviews because the flexibility of grounded theory enables the researcher to continuously look across the whole data set and pursue specific areas of interest (Kosnik et al., 2009). Furthermore, with the grounded theory approach the context of the research is considered and an emerging theory may develop from subsequent data gathering techniques (e.g., additional interviews, classroom observations) (Kosnik et al., 2009). Thus the decision to conduct multiple interviews and classroom observations over a period of approximately ten months is particularly well-suited to a grounded theory approach because interview questions and classroom observations can be guided by emerging theoretical developments from analyses of previous data, which continues until “theoretical saturation” is achieved (Punch, 1998, p. 167). It is important at this stage to mention that while elements of a grounded theory approach to analyzing data were used in this study, these were not strictly adhered to according to research protocols suggested by, for example Punch (1998)³. Considering I adopted a pragmatist approach in this study, the interview analysis was approached as bricolage. According to Kvale (2007),

Many analyses of interviews are conducted without following any specific analytic method. The researchers may then freely change between different techniques and

³ There are three steps to grounded theory analysis: (i) find conceptual categories in the data through a process of open coding (ii) find relationships between these categories through axial (or theoretical) coding which identifies interrelationships among categories determined by open coding (iii) conceptualize and account for these relationships at a higher level of abstraction (Punch, 1998, p. 210, 215).
approaches. Bricolage refers to mixed technical discourses where the interpreter moves freely between different analytic techniques (p. 115).

Thus, while grounded theory analytic techniques constitute the primary form of data analysis, I did not adhere strictly to its protocols. This allowed me to move freely between data and theory. It is important to note that grounded theory does not attempt to develop a "grand" theory and it does not require that the theory be applicable to others; it stays close to the data to explain the case at hand and it does not have to extend across many settings (Kosnik et al., 2009; Schram, 2003).

**Data analysis of phase one data**

Data collected during phase one included open-ended statements of concern - based on the CBAM framework - from teachers along with the pre-interview questionnaire and “archived” data related to the NGO's primary education program. Document analysis was an ongoing and intuitive exercise whereby any information relative to teacher development, curriculum and material development, and pedagogy was closely scrutinized and became part of ad hoc conversations. Outcomes of such activities were documented and in some cases fused into the interview guides or parts of the analyses presented in Chapters 5 through Chapter 9. The integration of information retrieved from documents was a necessary step to augment the contextual value and sensitivity of the interviews.

The completed questionnaires were translated from Bengali into English and the background information on each participant was recorded on a spreadsheet. The open-ended concerns statements were collected, translated, and content analyzed. This initial analytic strategy involved an inductive analysis of the Stages of Concern (SoC) data. After translating the open-ended statements of concern from 51 participants, I read through each completed statement to determine if the overall theme was an unrelated, self, task, or impact concern. Each statement was then reread sentence by sentence, and a SoC was assigned to each pertinent sentence in order to make a holistic assessment. The developers of the open-ended concerns statement do not recommend that a numerical average be computed for participants since an average could be

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4 The concept of a "cluster of concerns" was first proposed by Fuller and her colleagues (1967). Accordingly, these concerns could be associated with teachers and their teaching career, and these concerns changed rather predictably as teachers became increasingly experienced and sophisticated about their job (Fuller, Bown, & Peck, 1967).
misleading or meaningless (Newlove & Hall, 1976). Instead, the entire statement is to be informally “judged” in order to identify a teacher's central focus of concern about the innovation in question. Data reduction was necessary at this stage to develop "rankings" based on the relatively large data set (n = 51). Background data on each participant collected from the pre-interview questionnaire was also contrasted with the SoC open-ended narratives. Cross tabulations and correlations of high SoC rankings with demographic data can potentially lead to improved explanations and interpretations of teacher concerns data (George, Hall, & Stiegelbauer, 2006).

Data analysis of phase two data

During the second phase of the study, data from class observations and interviews with teachers was analyzed. During each visit/observation, I observed one teacher for a full shift of school (three periods) and a total of 27 behaviours were assessed and recorded for each Innovation Configuration (IC) Map completed. Over the course of 26 class observations in 10 different classrooms, a total of 702 teacher and student behaviours were assessed. A standard analysis of IC Maps was completed for each classroom observation, which involved frequency counts that represented one behaviour recorded for an individual teacher on the IC Map during one class observation. The IC construct is based on recognition that innovations are adapted and changed during implementation. Even though a group of teachers may all say they are "using" the innovation, teacher behaviours in individual classrooms can be quite different. For example, teachers may be teaching children mathematics in some ways that are highly consistent with the NGO’s vision of active learning methodology, but in other ways they are still using transmission style teaching practices.

The analysis of classroom observation data also involved combining the results of each teacher's completed IC Maps to determine if there were particular dimensions or variations of active learning that were being scored as high fidelity behaviours, low fidelity behaviours or if there was inconsistency in the teacher's behaviour. I assimilated the IC Map data and field notes for each teacher's class observations and developed a narrative for each of the seven components of active learning as well as a bar graph illustrating the range of variation (between "a" to "e"), for each dimension and for each teacher, that allowed comparisons in the patterns of implementation of active learning observed across the teacher sample. A second data analytic
strategy involved a detailed discussion of the apparent relationships between CBAM instruments including the open-ended concerns statements, the Levels of Use findings, and the IC Map findings.

A second major data collection component of the study involved conducting structured interviews focusing on teachers’ Levels of Use (LoU) of active learning methods in their classrooms. Data collected during the LoU focused interviews, was analyzed based on an established set of seven dimensions or “decision points”, which are “distinguishing actions of behaviours of individual teachers” that comprise each LoU. The seven categories include: (i) knowledge, (ii) acquiring information, (iii) sharing, (iv) assessing, (v) planning, (vi) status reporting, and (vii) performing (Hall & Hord, 2006, p. 165). Through the “branching interview” format utilized in this study, participants were placed at a LoU ranging from nonuse, routine use, and modification of innovation use. According to Hall and Hord (2006), the branching interview process is constructed so that the researcher, through a series of questions, gains very focused information about the user’s innovation-related behaviour.

After the LoU interviews were translated and transcribed, a systematic analysis of each teacher's interview was undertaken. The LoU rating for each participant was determined using the standard LoU Rating Sheet (see Appendix 13). The aim of this rating was to place each participant at a LoU for each category and to designate an overall LoU for each participant. This process involved rating all categories and identifying where the participant was according to the LoU Chart (see Appendix 12). The overall analysis of the LoU data resulted in the distribution of teachers into one of following categories: (a) LoU III - Mechanical Use, (b) LoU III/IVA - Mechanical and Routine Use, (c) LoU IVA - Routine Use, and (d) LoU IVA/IVA - Routine and Refinement Levels of Use. A full analysis of one teacher from each category is presented as a "vignette". A comparative commentary accompanies categories with more than one teacher. Additionally, extremes in LoU ratings are discussed including: (a) the most inconsistent LoU, (b) the lowest and highest average LoUs, and (c) the absence of LoU behaviours among teachers. Lastly, an attempt to describe relationships that emerged from the open-ended concern statements and the LoU data is presented.

It is important to mention that during interviews I made notes relevant for further discussion and/or as probing points for follow-up with a particular question. After digital recordings were reviewed and in cases where participants were interviewed more than once,
clarifications were sought, or verified by asking about certain responses from one participant in a subsequent interview. At this point it is worth noting that the technique of triangulation was used throughout the investigation (Caracelli & Greene, 1997). The concept of triangulation encourages the researcher to approach different data sources and questions from different angles, and to explore the "puzzles" in the data in a rounded and multi-faceted way. According to Mason,

This added to the validity of the evaluation and interpretation of the data in the sense that it suggests the social phenomena are little more than one-dimensional, and that your study has accordingly managed to grasp more than one of those dimensions (1996, p. 149).

**Additional interviews**

Immediately following the second round of class observations I conducted a second interview with participants. For this interview, I applied a semi-structured interview guide and questions were framed using social constructivist theory in order to explore issues around teacher past and present experiences with active learning pedagogy. During the third round of class observations, I conducted a third and final semi-structured interview with the teachers. Questions for the third interview addressed the role of contextual factors affecting teacher adaptation and implementation of progressive pedagogies like active learning. In addition to the digitally recorded interviews, I also compiled field notes during each interview. Since interviews were conducted in Bengali, each set of interviews had to be translated and transcribed. Overall, a total of 30 interviews took place with teachers. Following the interviews with teachers, I also conducted individual interviews with five secondary participants who are senior officers with the NGO's primary education program. The semi-structured interview with secondary participants aimed to clarify, validate and verify some of the key data from discussions with the principal participants, as well as gain insights, reveal additional issues, and raise new questions. During the analysis of interviews, I supplemented each transcript with the corresponding field notes I compiled to check for accuracy in the translations and transcriptions.

As a multiple method study, data gathered from the open-ended concerns statements, class observations, structured and semi-structured interviews were each considered as distinct sets of data and were metaphorically "housed in silos" (Kirby et al., 2010). The data analysis approach taken was to first analyze individual data sets or "silos of information" using descriptive
codes that represented aspects related to the specific focus or research question associated with that particular data set. It is important to note that determining code labels occurred inductively; meaning that each code grew out of the material being analyzed (Kirby et al., 2010). Following coding of each interview, the codes were then compared across participants for a particular data set (silo), using the principles of constant comparison. Specifically, materials were read and re-read for clarification, and similarities and differences between the responses of participants were looked for. When commonalities within a set of interview data were found, they were used to generate, modify, and eventually establish themes that emerged from that particular set of data. Only when descriptive coding and analysis was complete did coding then become analytic (Punch, 2009), where the aim of the analysis involved developing the meanings and relationships between the different groups of data. Each analysis was independently done. These were then overlapped with each other to check for relationships and emergent substantive patterns (Kirby et al., 2010). In this process, I compiled "chunks" of thematic information that formed the foundations for my reporting of data analysis in Chapter 5 through Chapter 9. The following table provides a summary of the analytic process for each set of data collected.

**Table 3.3 Stages of data analysis in phase two**

<table>
<thead>
<tr>
<th>Format of data analyzed</th>
<th>Types of analysis used</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Configuration Maps</td>
<td>Descriptive coding (within IC Map data)</td>
<td>Preliminary themes</td>
</tr>
<tr>
<td>IC Map preliminary themes</td>
<td>Analytic coding (within IC Map data)</td>
<td>Refining and consolidating themes</td>
</tr>
<tr>
<td>Audio recording of interviews</td>
<td>N/A</td>
<td>Transcripts of interview data</td>
</tr>
<tr>
<td>Individual interview transcripts</td>
<td>Descriptive coding (within each set of interview data)</td>
<td>Preliminary themes</td>
</tr>
<tr>
<td>Individual interview transcripts</td>
<td>Analytic coding (within each set of interview data)</td>
<td>- Refining and consolidating themes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Narratives of substantive patterns</td>
</tr>
<tr>
<td>Narratives of substantive patterns</td>
<td>Analytic coding (across sets of interview and IC Map data)</td>
<td>- Identifying relationships between groups of data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Synthesis of common themes</td>
</tr>
</tbody>
</table>
Addressing validity and generalizability

In qualitative research, validity does not carry the same connotation as it does in quantitative research (Creswell, 2009; Kirby et al., 2010). Instead, Lincoln and Guba (1985) substitute the notion of "trustworthiness" for that of validity and they push for qualitative research to be grounded in concepts like: credibility, dependability, and transferability. Various strategies to check the accuracy of research findings include: (a) data triangulation, (b) use of member checks, (c) the use of thick, rich descriptions to convey the findings, (d) clarifying the bias of the researcher to create an open and honest narrative, and (e) spending a prolonged period of time in the field in order to develop an in-depth understanding of the phenomenon under study (Creswell, 2009).

The validity of the data generation methods used in this study are largely supported by my decision to incorporate CBAM instruments to help measure teachers' ability to adapt and implement active learning methods in their classrooms. The validity of CBAM instruments speaks for itself; having been the basis for numerous research projects for the past 30 years to study the process of teacher change and they continue to play a role in change processes in schools, district, and institutions of higher education around the world (Anderson, 1997; George, Hall, & Stiegelbauer, 2006; Hall, Dirksen, & George, 2006; Hall & Hord, 2006; Hord, Stiegelbauer, Hall, & George, 2006; Van den Berg, 1993).

Although CBAM has proven itself as a robust and empirically grounded theoretical model for the implementation of educational innovations, its application to my study of teacher change in rural Bangladesh is a first. My efforts to incorporate all three key components of the model was a daunting task that challenged me as a researcher and also put into question the validity of these instruments in this challenging context. I acknowledge there may be some questions as to the validity of my CBAM ratings because I was not formally trained or certified as a LoU interviewer. I have tried to alleviate this weakness on my part by making a concerted effort to closely adhere to the strict standards for measuring implementation in schools with regards to Innovation Configuration (IC) Mapping (Hord, Stiegelbauer, Hall, & George, 2006), the Levels of Use (LoU) interview protocol outlined by Hall, Dirksen, and George (2006), and the Open-ended Concerns Statement (Newlove & Hall, 1976). Furthermore, I sought frequent guidance from my thesis supervisor, who has extensive experience using the CBAM framework for research purposes.
In addition to the use of CBAM research instruments, triangulating CBAM findings with data from two additional semi-structured interviews with participants further strengthened the study’s validity. By interviewing a group of ten teachers as well as a group of secondary participants, Sedman (2006) contends that we can connect their experiences and check the comments of one participant against those of others as an effective way to increase validity. Triangulating data from different methods allows the researcher to be more confident of their results by approaching their research questions from different angles, which suggests that social phenomena are more than one-dimensional, which ensures the study has managed to grasp more than one of those dimensions (Mason, 1996).

Spending a prolonged period of time in the field is another approach suggested by Creswell (2009) that lends credibility to the study. In my case, I have been working in Bangladesh for over ten years in the field of education. Over this period of time, I have developed an in-depth understanding of the issues and challenges facing teachers in this context and I can convey details about the site and the people that other foreigners visiting for shorter periods of time would be unable to accomplish.

In qualitative research, generalizability is normally not the goal, and therefore would not be paramount (Kirby et al., 2010). I believe my study is well positioned to discuss matters relating to a teacher's use of active learning methods. That said, I have not based my analysis and the synthesis of findings on data obtained from a sample representative of a wider population of teachers in Bangladesh and I am not attempting to make empirical generalizations. Nevertheless, I have no reason to assume that my sample of teachers and therefore my analysis is atypical. Within the context of the NGO, teachers all come from the same region of the country, every teacher has received the same pre-service and in-service professional development and support, and the majority of teachers have grown up having experienced similar social and economic hardships.

Risks of study

There are no known or anticipated risks associated with this study. Every effort was made to protect participants, all of whom are over 18 years of age, from potential physical, social, emotional, political or financial risk. Repeated efforts were made by the researcher to ensure participants that the data being collected was not for evaluative purposes and the data collected
would not have any impact on their employment status with their employer before, during or after completion of the study. Both confidentiality and anonymity of participants was ensured. Participants’ real names were changed to pseudonyms and identifying geographic and or school locations were also altered. All participants were required to read and sign an information letter and an informed consent form ensuring that potential subjects were knowingly participating in the study and were doing so of their own choice (see Appendix 4). Second, signed consent slips explained that if any unexpected situation should arise that causes a participant to want to end their involvement in the study, they were free to do so (see Appendix 3). Translators involved in the study were also bound by a confidentiality agreement, which they were required to sign before assisting the researcher with any interviews and/or translation work (see Appendix 5).

Limitations

Despite my best efforts, my goal was never to conduct the "perfect" study, but rather to carry out a well-rounded study that might produce some new understandings on the teaching experiences of people living a very different life from my own. I also recognize that cultural and linguistic barriers to interpretation exist, which challenge the trustworthiness and credibility in such a study. Reflecting on the limitations of this study, I see they revolve around issues communication and logistic difficulties, representation, and issues of cultural difference.

As a foreigner, I recognize how “observing any society as an outsider has inherent limitations” (Cook, 1998, p.98). My presence potentially poses special problems ranging from an initial lack of familiarity with the culture to “the difficulties in avoiding attention”, which can constrain the effective conduct of research (Crossley & Watson, 2003, p. 48; Vulliamy, Lewin, & Stephens, 1990, p. 165). One major limitation to my study is that I was unable to communicate fluently and directly in the same language as my participants. The difficulties of conducting data collection with participants for whom English is their second or third language presents challenges to both the reliability and validity of the data (Twinn, 1997). Another challenge with translations had to do with the complexity of interpretation when attempts were made to translate. Some words used in English simply do not translate well into Bengali. Although I speak basic conversational Bengali and a few of my teacher participants spoke very basic English, the interviews were conducted with the use of my two translators to ensure the maximum amount of understanding between myself and the participants. Only the interviews with three of my secondary participants took place completely in English. I worked closely with my two
translators to train them in the appropriate techniques for conducting interviews. Interviews were generally conducted in two languages: I posed questions in English and one of my interpreters would translate the question into Bengali. Interviewees responded in Bengali and translations were done immediately for my benefit. The biggest challenge I faced during interviews was getting immediate translations with sufficient detail to allow me to gauge whether the interviewee understood the question and also allow me to probe for more detail when necessary. While a certain degree of unreliability may have arisen during the process of translation, this threat to reliability was hopefully minimized during the process of translating and transcribing each interview. When I had completed my data collection and had returned to Canada, I hired a Bangladeshi colleague living in Toronto to translate and transcribe all of my interviews. This process provided an additional member-check on the translations that were done for my benefit at the time of each interview. Additionally, field notes compiled during interviews provided another source of data to check the accuracy of translations and were also used to supplement transcripts during data analysis.

My two translators also acted as collaborators and cultural interpreters throughout the data collection process. Despite my having lived and worked in Bangladesh for over ten years, by no means do I claim to fully understand or be part of Bangladeshi culture, especially rural village culture. Acculturation or learning to communicate in the cultures of Bangladesh is a slow process. Throughout the duration of my time in the field collecting data, my two translators acted as liaisons between myself and the many people involved in my study, which also denotes the contribution, to greater and lesser degrees, of their voices in this study. I moreover feel that had I been of the same ethnic background and language of the participants, I may have been better able to create a stronger rapport more quickly with the participants and perhaps elicited more detailed and/or honest responses. However, in most cases, when I made an effort to speak to my participants in Bengali and when I described how I had lived and worked at a nearby and well-known school for over four years, they seemed much more comfortable contributing to my study. In most cases, there was a noticeable change after the first meetings during phase one of the study, and participants seemed to be more open and forthright during phase two of the study. Despite the efforts of my translators, in some instances the translation itself doesn't lend itself to clear expression of the participants' voices, and it was clear that at times meanings and understandings were skewed by language.
As a foreigner conducting research in rural Bangladesh, any attempt to complete the fieldwork unsupported would have been next to impossible. Although I had total permission to visit any of the NGO's schools and teachers, the practicalities (travel, accommodation, permissions) of my study required me to recruit help from indigenous staff members of the NGO supporting my study. While I would have preferred finding translators that had no affiliation with the NGO, the complexities surrounding my data collection demanded support from people within the organization. Besides the language barrier I had to overcome, simply arranging for a school visit to observe and interview a teacher was a huge logistical undertaking that required a fine balance of patience and persistence along with what Lewin described as "managed serendipity" (1990). The following vignette illustrates the challenges of data collection in rural Bangladesh:

The process of organizing and completing a school visit regularly involved:

- one of my interpreters from the NGO calling the nearest regional office and informing the program officer (PO) of our desire to visit a particular school under his or her authority
- the PO would then call the participant (assuming he or she had a cell phone) to determine if that participant was: a) going to be at school on the date we wished to come, b) attending in-service training, or c) absent from work due to illness
- one my assistants would then have to check their schedule to ensure they were free to come with me on that particular day
- we would have to speak with the NGO's logistics department to ascertain if a vehicle and a driver would be available to take us to the field
- we would also have to check with the curriculum department to make sure that students were not writing exams or preparing for exams on the day we wished to visit the classroom

If everything was in order:

- on the day of the field visit, one of the NGO's drivers would collect me usually around 6:00AM
- we would then collect my two translators, stop at the nearest gas station to fill the tank, check the tires, etc., and begin our journey
- a typical journey to a school would take anywhere between one and five hours
- the NGO's schools are generally located in remote and hard-to-reach locations that are often not accessible by vehicles larger than a motorbike
• during the monsoon season, the journey usually required an additional hour as the roads to most schools were closed to vehicles and we would either have to walk the last distance on foot through mud and rice paddy fields (see Photo 3.2) or hire a boat and boatman to take us to the school
• once we arrived at the school we would quickly settle down in the classroom for the class observation, which began at 10:00AM and ended at 12:30PM
• after a short tea break, we would begin the interview with our participant, which would last approximately one hour
• once the interview was over, we would begin the journey home with a stop over at one of the NGO's regional offices for a late lunch that was arranged for us, again provided at no cost by the NGO
• if we were lucky and the traffic on the highway was free of any traffic jams or accidents, we could expect to be home between 6:00PM and 8:00PM
• lastly, it was always very important to add a dash of patience, a heaping of a sense of humour, and repeat this procedure 30 times over a 10 month period.
This study is in line with Galtung’s (1975) recommendation to avoid conducting research that takes the form of exploitation. As a researcher, the goal of this study was not to do research on people, but together with people (Galtung, 1975). As such, a conscious effort has gone into actively involving participants in the design of certain components of this study. For example, in phase two of the study, participants including trainers and senior program officers with the NGO collaborated with me on the development of the Innovation Configuration Mapping tools that were utilized during classroom observations. The highly interactive and iterative process of developing the Innovation Configuration Map was a challenging endeavor for everyone involved.

Throughout my time collecting data, I made it clear to all participants and my colleagues working at the NGO that the aim of my study was to better understand what teachers were doing in the classroom, not to evaluate their practice. The inspiration for my study came from a desire
to give a voice to an underrepresented group of teachers in Bangladesh and try to provide their colleagues working in the primary education program with insights that might better inform their practice. It is important that I also acknowledge the power relationships that exist in this situation. The participants involved in my study are all Bangladeshi primary school teachers earning a modest salary and working in relatively well-resourced but still physically and environmentally challenging environments in rural Bangladesh, although I on the other hand am of privileged race, ethnicity, gender, and have opportunities and access to power. I had hoped that I could use my "power" to give a voice to the participants in my study that would extend beyond their communities and into the larger arena of international development education. However, as I strove to give a voice to the teachers in my study, I came to realize that their voices can only come through my lens which also has a particular (and in this case *privileged*) identity attached to it. Therefore, the representations I have made of my participants should not be taken as objective facts that come directly from the participants' mouths, but as an account that represents the particular reality of myself, the researcher, and the storyteller (Wallace & Louden, 2000).

Consequently, it must be acknowledged that although I claim these events to be true *to the best of my knowledge*, they are still presented to the reader through the lens of my own identity, biases, and interpretations. This relates back to the issue of representation. As Wallace and Louden (1997) note, "despite our attempts to provide accounts based firmly on actual events, contextualized by the history of the participants and our own preconceptions, texts are always open to further interpretation" (p. 12). Nevertheless, it was my intent that this study be used to benefit the participants in every way possible.

**Chapter summary**

In this chapter, I presented an overview of the research methods used to conduct this study. A rationale for taking a pragmatist approach was provided where multiple qualitative methods are seen to be most practical considering the various data collection instruments used. Recognition of the value of qualitative research in a low-income country context such as Bangladesh was discussed along with its suitability when studying the processes taking place in the classrooms. A two-phase qualitative research design involved an initial cohort of 51 teachers completing a questionnaire and an open-ended concerns statement. In the second phase of the study, a group of 10 teachers, identified through purposive sampling, participated in three semi-
structured interviews and three class observations. A secondary group of five participants also participated in an individual semi-structured interview. Data collected using three CBAM frameworks (Hall & Hord, 2006), along with two additional semi-structured interviews addressing social constructivist and contextual issues were analyzed using a grounded theory approach with particular attention paid to the analytic principles of constant comparison. My role as an "outsider" conducting educational research in Bangladesh was identified and extensive discussion of the inherent limitations regarding issues of communication, logistics, representation and cultural differences were addressed. In the next chapter, I provide an overview of the context of Bangladesh and the NGO that collaborated with me in the study.
Chapter 4: Contextualizing the Study

Introduction

Over a century has passed since Sir Michael Sadler, one of the pioneers of comparative studies, made his Guildford speech on “How far can we learn anything of practical value from the study of foreign systems of education?” This question has vexed researchers concerned with educational improvement in low-income countries for decades. If theory and practice are to address itself to the complex challenge of improving the quality of primary education within low-income countries, then it will have to move beyond the polarized universal theories from the dominant secular educational paradigm of the West. Debate on teaching in low-income countries has continually asked if it is possible to achieve quality teaching and learning in under-resourced education systems in low-income countries such as Bangladesh. Increasingly, mediating between global pedagogical theories and local practices is becoming important for comparative educators and researchers, as is the need to take contextual and cultural influences into consideration when analyzing the efficacy of transnational education practices.

This chapter provides a broad overview of the research setting. First, a brief description of demographic, social, and economic indicators for Bangladesh and the Sylhet division is given. Second, an overview of the education policy context including a brief summary of the history of education policy, followed by a description of the primary education system in Bangladesh and more specifically in the Sylhet division is discussed. Finally, a brief history of the NGO that allowed me to conduct my study will be given along with a detailed account of their primary education program.

Bangladesh: Land and people

Bangladesh ( ), which means "Country of Bengal" is located in the Bay of Bengal in South Asia and shares a border with India and Burma (Myanmar). The country itself is a massive delta flood plain formed by the deposit of silt from the Ganges, Brahmaputra, and Meghna rivers that pass through Bangladesh. The impact of water on the land and its people is possibly more powerful than any other country on earth (Schendel, 2009). The rivers that criss-cross Bangladesh are only one source of water. There are also the annual monsoon rains that bring torrential downpours that continue on and off from May until late September.

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companion of life in this tropical land is seawater that often inundates low-lying areas during frequent cyclones that form in the Bay of Bengal. During the summer, Bangladesh becomes an amphibious land; rivers widen, rain pours down and storms hamper the discharge of all this water resulting in flooding on country-wide scale.

![Map of Bangladesh and location in South Asia](source)

*Figure 4.1. Map of Bangladesh and location in South Asia*
*Source: Banglapedia, 2012*

Despite being recognized as one of the countries most vulnerable to climate change, Bangladesh's population is approximately 158,570,535 making it the seventh most populous...
nation and one of the most densely populated counties in the world (Central Intelligence Agency, 2011). Over the past two decades, amidst many odds, Bangladesh’s socioeconomic achievements have been impressive despite poor initial conditions at the time of independence and frequent exposures to severe floods and other natural disasters. Rapid economic growth and public expenditures toward social services for the poor have contributed to progress in poverty reduction. Despite such progress, Bangladesh is still one of the world’s poorest countries with 81% of the population living below $2.00 per day (Population Reference Bureau, 2011). The United Nations Development Program's measure of poverty, the Human Development Index (HDI), has gained currency in recent years as a reliable benchmark for country comparisons based on human progress. Based on an examination of three aspects: (a) a healthy life (infant mortality, life expectancy), (b) education (adult literacy, gross enrolment ratios), and (c) standard of living (purchasing power parity, income), Bangladesh's measure in 2011 was 0.500 placing it 146 out of 187 countries with available data (UNDP, 2011). Though comparatively low, there has been modest progress with a 20% increase since 1980 and an HDI annual growth rate of 1.55% in the last decade (UNDP, 2011). The country has an agrarian-based economy with 76% of the population living in rural or village settings (Population Reference Bureau, 2009). Gender inequities permeate society and there is generally very low status for girls and women. Bangladesh is also characterized by linguistic, ethnic, and cultural homogeneity. The main religion practiced in Bangladesh is Islam (89.6%), but there is significant percentage of the population that adheres to Hinduism (9.3%) (BANBEIS, 2012). The near universality (98%) of Bangla – the lingua franca of the country – and its use as the language of instruction in all government-run public schools is particularly advantageous for the spread of literacy and basic education (Central Intelligence Agency, 2009).

**Sylhet division: Land and people**

The particular geographic location of my research study was the Sylhet (pronounced Silet) division. Located in north-eastern Bangladesh, this division is named after the main city of Sylhet. The Sylhet division is bordered by India on three sides (north, south, and east), the Dhaka division on the west, and the Chittagong division on the southwest (see Figure 4.1). Sylhet is the smallest among the seven divisions in Bangladesh in terms of area and population. The division is subdivided into four districts (zilas) including: (i) the Sylhet district, (ii) the Sunamganj district
(pronounced Sunamgonj), (iii) the Habiganj district (pronounced Hobigonj), and (iv) the Maulvi Bazar district (pronounced Moulvee Bazar).

Sylhet division is characterized by its geographic, economic, and social diversity. Of the total area, arable land covers 57.5%, haor\(^5\) area 30.2%, and tea estates/forest/hilly areas 12.5%. (Chowdhury & Choudhury, 2011). The population of Sylhet division is approximately 9.5 million and the district of Sylhet has the largest population with around 3.4 million people and the highest population density of 17, 479/km\(^2\) (BANBEIS, 2012). The population is predominantly agrarian with only 12.5% of the Sylheti population living in urban areas whereas the percentage for the country as a whole is 23% (BANBEIS, 2012). In terms of religious practice in the Sylhet division, Muslims make up 81%, Hindus 18%, Christians, Buddhists and others make up approximately 1% of the population (Banglapedia, 2012).

Compared to the rest of the country, Sylhet is prosperous in terms of natural resources including tea and natural gas. Historically, Sylhet was well known for its highly educated gentry and upper class and the region was often viewed by the rest of the country as the intellectual centre of the country (Chowdhury & Choudhury, 2011). The city of Sylhet has seen dramatic growth over the past decade with numerous high-rise office towers, shopping centres, apartments and hotels being built. Remittance money mainly sent by expatriates of Sylhet living abroad, particularly in the United Kingdom has been a key element of the economic growth. Despite these transformations, Sylhet continues to struggle in its ability to provide adequate social security for its citizens. In terms of health indicators, Sylhet division has some of the highest under five mortality rates in the country (UNICEF, 2009) and the lowest rates of immunization and use of hygienic sanitation facilities (Chowdhury & Choudhury, 2011; UNICEF, 2009).

**Education policy context**

Early evidence of education in this region of South Asia can be found long before the period of British colonial rule in the sub-continent. Some of the earliest teaching was provided by *Gurus* (generally Brahmins) in institutions called *Gurugriho* (Nath & Mahbub, 2008). Across South Asia, the 10th century CE witnessed the emergence of a new form of Islamic education institution - the *madrasa* (place of study). Madrasas were established next to mosques and

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\(^5\) A haor a wetland ecosystem which physically is a saucer shaped shallow depression. A haor become a very extensive body of water during the monsoon season and mostly dries up during the winter season.
addressed both social and scholarly needs of the time. Modern education first developed during British colonial rule in the latter half of the 19th century CE. This period is most notable for the widespread expansion of education among the masses. In Sylhet, the first government high school was established in 1840 but closed soon after due to a shortage of students (Chowdhury & Choudhury, 2011). In 1854, an enquiry by the British about the state of education in the region led to the Wood's Educational Dispatch, which recommended the promotion and provision of modern education across what is present-day Bangladesh. In 1905, a local newspaper, The District Gazeteer, reported that in 1874-75 there were 195 primary schools across the district and in 1880-81 there was 285 primary schools (cited in Chowdhury & Choudhury, 2011). Some of the earliest official education policies in the form of education acts attempted to establish uniformity within the primary education system. The Primary Education Act, 1919, mandated that school management and responsibility for primary school provision was with provincial governments and the Bengal (Rural) Primary Education Act of 1930 sought to introduce universal primary education across the Bengal region (Sabur & Ahmed, 2011).

During the period of Pakistani rule (1947 to 1971), the pace of educational development was slow and formal education remained the preserve of a select few. A 1961 population census reported that 82% of the people of East Pakistan (present-day Bangladesh) were illiterate (Schendel, 2009). Across the country, primary education suffered as the East Pakistan government was largely indifferent to providing basic education to the whole of the country. In 1971, the year of Bangladesh's independence, evidence of the lack of headway in developing the primary education system was best illustrated by primary school participation rates reaching only 40% (Nath & Mahbub, 2008). Initiatives to increase access to primary education were generally either small-scale and local, or administratively driven from central ministries in Dhaka, with little local infrastructure in place (Unterhalter, Ross, & Alam, 2003). In post-liberation Bangladesh, nationalization of education was the goal. The government enacted the Primary School (Taking Over) Act in 1974 that nationalized primary schools and made teachers government civil servants. Under this law, the government centralized school management thus removing the role of the district, local government bodies, and community participation in school management. According to Ahmed, Ahmed, Khan, and Ahmed (2007), this law failed to recognize the important role of the local community in supporting basic education:
A century's old culture of community involvement running primary schools was effectively curbed. By implication, the law discouraged non-government providers, such as institutions run by non-government organizations (NGOs) or private providers (cited in Sabur & Ahmed, 2011, p. 169).

Despite high expectations for improvements in social welfare in the post-liberation era, the first decade of independence saw limited growth or improvement in education. Although education constantly appeared on the government five year plans for education policy, there was little change until the mid 1980's, when the government finally started to allow NGOs to provide basic primary schools in an attempt to meet the demand for places and to cover up the chronic shortfall of government provision, especially in the poorest areas.

A later attempt by the government to re-establish a modicum of decentralization into the management of primary education involved the Primary Education Act of 1981, which advocated for greater efficiency and organization in the system through provisions for the establishment of local education authority (LEA) at the district level. This administrative reform aimed to enable the LEAs to appoint and manage teachers and supervise the functioning of primary schools, manage budgets and conduct examinations (Sabur & Ahmed, 2011). However, other than a few school construction programs, primary and mass education objectives were never implemented due President Zia's assassination and General Ershad's assumption of power and military rule in 1982 (ADB, 1986; Muhith, 1999).

The period of greatest educational expansion coincided with the country's first period of democratic multiparty politics. In 1990, Bangladesh adopted the Primary Education (Compulsory) Act, which entitled all children to free primary education and books. This education act was in line with the government's commitment to the Education for All (EFA) goals adopted at the World Conference on Education for All in Jomtien, Thailand. Additional pressure on the government to improve on its primary education commitment may have come from successes of NGO interventions and increasing influence of donor support and financing in primary education provision. By the early 1990s, the largest NGO education provider alone had over one million students enrolled in over 35,000 non-formal primary schools across the country (BRAC, 1996). Other NGOs, such as the one participating in this study also began to provide primary education programs around this time. According to Hossain, Subrahmanian, and Kabeer (2002), there were quite possibly more local NGO schools in villages scattered across rural
Bangladesh than there were state schools. The period from 1998 to 2010 has been associated with continuing government and NGO concern about access, particularly for ‘hard to reach’ children and increasingly children that have historically been excluded from primary education including children with special needs, over-aged children, working children, street children, children from ethnic/language minority populations, and children living in remote and inaccessible areas. This period has also seen government policies that focused on issues of quality - with regard to curriculum, pedagogy and management (Unterhalter, Ross, & Alam, 2003). While a lack of continuity in government policy and practice has had a somewhat deleterious effect on quality education provision in Bangladesh, progress in the form of large-scale sector-wide approaches to education development have had modest successes to date.

Recently, the Government of Bangladesh formulated a New Education Policy (2010). According to the Minister of Education, "There has to be qualitative increase in both government and non-government investment and cooperation for education" (GoB, 2010). By acknowledging the need for diversity and multiplicity in the provision of primary education, the Honourable Nurul Islam Nahid, Minister of Education appears to provide a modicum of endorsement and recognition of NGO programs, as well as madrasas, and a variety of private and semi-private schools so long as they register and are in compliance with set rules. Other key strategies of the New Education Policy specifically addressing primary education issues include: (a) extending free and compulsory primary education from grade five to grade eight, (b) instituting a uniform curriculum and syllabus for government, non-government, private and ebtadayee⁶ and all kinds of madrasas, (c) reducing drop-out rates among girls, children from ethnic groups, physically challenged students, and other ultra-deprived children, (d) employing interactive teaching methods, and (e) ensuring greater community participation in school development and activities. The new education policy's emphasis on expanding access to children will likely require the government to look to alternative education providers including NGOs. The question remains to what extent the government is willing to cooperate with existing education programs beyond tacit tolerance of their existence. To achieve the goals of the latest education policy, it is

⁶ Bangladesh has two kinds of madrasas: Alia madrasas, which are privately owned but supervised by the Bangladesh Madrasa Education Board and Quomi madrasas, which are unregistered madrasas which constitute a "nonformal" stream of religious education that remain outside the scope of government regulations and do not receive government support. The ebtadayee madrasas are the institutions providing primary education within the Alia madrasa system. Today, the majority of graduates of Alia madrasas are considered to be "modernists" and they typically merge into the general stream of higher education by continuing their academic studies in public and private colleges and universities (Asadullah & Chaudhury, 2006).
recommended the government explore alternative approaches for meaningful collaboration with non-state education providers in order to increase both access and the overall quality of primary education.

**Primary education system in Bangladesh**

In Bangladesh, expansion in the variety of education providers is the result of a combination of complicated factors including: (a) the government's inability to address the needs of population groups that are marginalized or disadvantaged for different reasons, (b) generally low quality learning opportunities for children attending many of the government schools leading parents to look for alternatives (Rose, 2002), and (c) resource and capacity constraints compelling the government to harness the support and supplementation of resources by non-state institutions (Sabur & Ahmed, 2011).

The diversity of non-state primary education provision is significant. At the time of this study, the primary education system comprised grades one through five and enrolled children between the ages of approximately six to ten years⁷. There remain huge gaps in the government provision, however, which has led to the development within the country of different types of primary schools. Presently, the delivery of primary education occurs through a complicated system of 10 types of secular and non-secular, formal and non-formal, semi-private, private Bangla and/or English medium, and NGO-funded schools. However, the main providers are the government primary schools, registered non-government primary schools, madrasas, and non-government organization (NGO)-operated schools (see Table 4.1). Recognizing that Bangladesh is the seventh most populated country in the world, the education system must cope with extremely large numbers of students. For example, by 2010, there were over 82,000 primary schools, over 380,000 teachers, and approximately 17 million students (BANBEIS, 2012). These numbers do not include thousands of private education institutions and some 40 thousand non-formal primary schools operated by various non-governmental organizations (NGOs), serving over 1.5 million children and poor families across the country (Ahmed, 2011). These schools are generally one-room one-teacher classes that usually offer an accelerated four-year primary education program with learning objectives in-line with those in the national curriculum. As well,

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⁷ The duration of the primary program expected to increase up to eight years of schooling with eventual implementation of the New Education Policy 2010.
the quomi madrasa numbers are also not reported although it is estimated that the number of such institutions around the country is 15,000 and enroll more than two million students, an overwhelming majority coming from poor families in rural areas (Park & Niyozov, 2008; Sikand, 2004).

**Table 4.1 Percentage distributions of primary school students by school type (2008)**

<table>
<thead>
<tr>
<th>Type of school</th>
<th>Enrolment percentage</th>
<th>Number of institutions (rounded numbers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Primary School (GPS)</td>
<td>56.9</td>
<td>37,700</td>
</tr>
<tr>
<td>Registered Non-Government Primary School (RNGPS)</td>
<td>18.7</td>
<td>20,100</td>
</tr>
<tr>
<td>Non-Formal Primary School</td>
<td>9.6</td>
<td>&gt; 30,000</td>
</tr>
<tr>
<td>Madrasas</td>
<td>7.0</td>
<td>16,000</td>
</tr>
<tr>
<td>Kindergartens</td>
<td>4.7</td>
<td>2,700</td>
</tr>
<tr>
<td>Primary school attached to high schools</td>
<td>1.3</td>
<td>1,000</td>
</tr>
<tr>
<td>Others (Community schools, unregistered, etc.)</td>
<td>1.8</td>
<td>3,900</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>81,400 + &gt; 30,000 NFPE</td>
</tr>
</tbody>
</table>

Source: BANBEIS, 2012; Nath & Chowdhury, 2009, p. 63

According to the Education For All (EFA) Global Monitoring Report 2009, Bangladesh is one of the few countries in the world to have met the Dakar and Millennium Development Goal (MDG) targets of achieving gender parity in primary and secondary education by 2005 - and it did so ahead of schedule (UNESCO, 2010). Despite these accomplishments in education provision, Bangladesh still faces obstacles towards the long-term success of its education system. For example:

- the rate of completion of the five-year primary cycle vary between 50% (Ahmed et al., 2007) and 65% (UNESCO, 2009).
- Government expenditure on education as a percentage of Gross Domestic Product (GDP) was 2.4% in 2009, which was the lowest in South Asia (UNESCO, 2011).
- At least 11% (estimated to be 1.835 million) of children between 6 and 10 years of age are out of school and have never enrolled in any type of primary level institution.
(UNESCO, Global Education Digest, 2009)

- The recent ratio of students to teachers in government primary schools remains high (46:1), reflecting low quality of the teaching and learning environment (UNESCO, Global Education Digest, 2009)

- For the school year ending in 2004, only 56% of primary school teachers had any formal teacher training (UNESCO, Global Education Digest, 2009)

Additional statistics concerning the quantity as well as the quality of primary education in Bangladesh, as well as India, Nepal, and Pakistan can be found in Table 4.2.

**Table 4.2  Primary education indicators for Bangladesh and selected countries**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Bangladesh</th>
<th>India</th>
<th>Nepal</th>
<th>Pakistan</th>
</tr>
</thead>
<tbody>
<tr>
<td>GER (Male)</td>
<td>88</td>
<td>114</td>
<td>123</td>
<td>101</td>
</tr>
<tr>
<td>GER (Female)</td>
<td>95</td>
<td>109</td>
<td>125</td>
<td>83</td>
</tr>
<tr>
<td>NER (Male)</td>
<td>83</td>
<td>90</td>
<td>81</td>
<td>73</td>
</tr>
<tr>
<td>NER (Female)</td>
<td>90</td>
<td>87</td>
<td>78</td>
<td>57</td>
</tr>
<tr>
<td>GPI in NER</td>
<td>1.08</td>
<td>.96</td>
<td>.96</td>
<td>.78</td>
</tr>
<tr>
<td>% Trained Teachers</td>
<td>56</td>
<td>-</td>
<td>66</td>
<td>85</td>
</tr>
<tr>
<td>Student - Teacher Ratio</td>
<td>45</td>
<td>-</td>
<td>38</td>
<td>40</td>
</tr>
<tr>
<td>% Repeaters (all grades)</td>
<td>10.9</td>
<td>3</td>
<td>16.8</td>
<td>5</td>
</tr>
<tr>
<td>SRG 5 (Male)</td>
<td>52</td>
<td>66</td>
<td>60</td>
<td>68</td>
</tr>
<tr>
<td>SRG 5 (Female)</td>
<td>58</td>
<td>65</td>
<td>64</td>
<td>72</td>
</tr>
<tr>
<td>PCCR (Male)</td>
<td>63</td>
<td>73</td>
<td>50.9</td>
<td>68</td>
</tr>
<tr>
<td>PCCR (Female)</td>
<td>67</td>
<td>73</td>
<td>65.2</td>
<td>72</td>
</tr>
<tr>
<td>% Female Teachers</td>
<td>40</td>
<td>-</td>
<td>56</td>
<td>46</td>
</tr>
<tr>
<td>EDI Index &amp; Rank</td>
<td>.718</td>
<td>.775</td>
<td>.704</td>
<td>.651</td>
</tr>
</tbody>
</table>

Notes: GER=Gross Enrolment Rate, NER=Net Enrolment Rate, GPI=Gender Parity Index, SRG=Survival Rate to Grade 5, PCCR=Primary Cohort Completion Rate, EDI=Education for All Development Index

Sources: UNESCO (2010); UNESCO Global Education Digest (2009)

Even though a steady increase in enrolment rates, gender parity, and the rapid construction of new schools across the country has accelerated progress in basic education provision, formidable
challenges remain for the Government of Bangladesh to overcome deficiencies in the quality of primary education. The next section provides an overview of the current state of education provision in the Sylhet division.

**Primary education in Sylhet division**

Sylhet division has some of the lowest enrolment and completion rates in the country. In 2008, the net enrolment rate in Sylhet was 80.5% at the primary level, which is significantly lower than the national average of 86.4% at that time (Nath & Chowdhury, 2009). As well, the rate of students who complete primary school is notably below the national average as are other internal efficiency indicators for Sylhet (see Table 4.3).

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Sylhet</th>
<th>Bangladesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net enrolment rate (children 6 to 10 years)</td>
<td>80.5</td>
<td>86.4</td>
</tr>
<tr>
<td>Net enrolment rate (children 11 to 15 years)</td>
<td>64.2</td>
<td>77.7</td>
</tr>
<tr>
<td>% primary completers (11 years and up)</td>
<td>43.1</td>
<td>51.3</td>
</tr>
<tr>
<td>% of secondary completers (15 years and up)</td>
<td>7.1</td>
<td>14.3</td>
</tr>
<tr>
<td>Literacy rate (7 years and up)</td>
<td>40.7</td>
<td>48.5</td>
</tr>
<tr>
<td>Adult literacy rate (15 years and up)</td>
<td>44.4</td>
<td>48.5</td>
</tr>
</tbody>
</table>

Source: (Chowdhury & Choudhury, 2011)

There are a number of possible explanations as to explain why Sylhet lags behind the national average. The low enrolment rate in Sylhet division may be partly explained by the challenging geography and remoteness of many of the communities (see Figure 4.2). In the most isolated and rural areas of Bangladesh educational, social and economic constraints and/or deficiencies are most prevalent. Even when schools are built in rural areas, the fact that populations are often dispersed means that rural children usually have further to travel to their school than urban children. The ‘distance factor’ includes: (a) physical distance as measured in kilometres, (b) cultural distance – or the ‘drop-off’ that occurs when children are expected to leave their own community to go into a community that may be considered foreign or unfriendly, and (c) time distance – which takes into account the physical barriers such as mountains, poor
roads, forests, rivers or other obstacles that lengthen travel time (Lehman, 2004). For example, the children living in the haor areas have to contend with housing, transportation, and livelihoods that are significantly poorer than other parts of the country. Many of the roads in these areas are made of dirt and are often unsafe during the wet season. Children are forced to travel on foot on muddy and rough routes or by boat to get to and from school each day.

![Figure 4.2](image.png)

**Figure 4.2.** *Net enrolment rate by location and level of education*

Source: Education Watch Household Survey (2010)

A second factor for the low enrolments in the Sylhet division has to do with a lack of parental awareness about the necessity of schooling combined with high incidences of household poverty and child labour. According to a study on out-of-school children in Bangladesh's tea gardens by Nath, Yasmin, and Shahjamal (2005), "poverty came out as the most important reasons for dropping out, never enrolling, and gender disparity against girls" (p. xiii). Consequently, approximately 50% of children 6 years of age have still not been enrolled in school (Nath, et al., 2011). Early dropout rates are also unusually high in the Sylhet division. By the age of 15 years, 50% of children in the plain lands, 60% of those living in haor areas and 73% of children from tea estates, hills, and forests had dropped out of school (Nath, et al., 2011).

School-related factors are likely to have also contributed to the low rates of enrolment. For example, across the Sylhet division most primary schools lacked electricity, safe drinking water, playgrounds, clean classrooms, and quality black boards (see Table 4.4). Furthermore, findings from the Education Watch 2009-10 study found that primary school teachers are more
likely to be absent from school, or arrive late and leave early than other teachers across the
country. Reasons for the lack of punctuality and truancy among teachers included the challenge
of the daily commute to school, unfavourable working conditions, and conflict between teachers
and principals (Chowdhury & Choudhury, 2011).

Table 4.4  **Infrastructure of primary schools across Sylhet division**

<table>
<thead>
<tr>
<th>School Indicators</th>
<th>Rural Sylhet (%)</th>
<th>Rural Sunamganj (%)</th>
<th>Rural Habiganj (%)</th>
<th>Rural Moulvibazar (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility for physically challenged persons</td>
<td>15.4</td>
<td>0.0</td>
<td>11.5</td>
<td>15.4</td>
</tr>
<tr>
<td>Electricity in school</td>
<td>30.8</td>
<td>15.4</td>
<td>15.4</td>
<td>34.6</td>
</tr>
<tr>
<td>Playground at school</td>
<td>50.0</td>
<td>42.3</td>
<td>42.3</td>
<td>50.0</td>
</tr>
<tr>
<td>Clean floors</td>
<td>38.5</td>
<td>26.9</td>
<td>26.9</td>
<td>53.8</td>
</tr>
<tr>
<td>Clean walls</td>
<td>50.0</td>
<td>46.2</td>
<td>61.5</td>
<td>69.2</td>
</tr>
<tr>
<td>Source for clean drinking water</td>
<td>50.0</td>
<td>50.0</td>
<td>76.9</td>
<td>76.9</td>
</tr>
<tr>
<td>Separate toilet facility by gender</td>
<td>19.2</td>
<td>15.4</td>
<td>26.9</td>
<td>65.4</td>
</tr>
<tr>
<td>Toilet facility for physically challenged persons</td>
<td>3.8</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Source: Chowdhury & Choudhury, (2011)

Although the overall enrolment, completion, and literacy rates across rural areas of the
Sylhet division are generally lower than the rest of the country, there is at least gender parity in
student enrolment and completion rates at both the primary and secondary levels of schooling.
This is surprising considering Sylhet division has a reputation for being more religiously
conservative than much of the country. In countries like Bangladesh where *purdah* is practiced,
longstanding traditional and socio-cultural constraints often demand special concern for girls’
privacy, protection and social reputation (Herz, Subbarao, Habib, & Raneyetal, 1991, p. 29).
*Purdah* is the practice that includes the seclusion of women from public observation by wearing
concealing clothing from head to toe and by the use of high walls, curtains, and screens erected
within the home. Despite the fact that many parents generally see it as culturally unacceptable for
girls to travel long distances alone to school and the potential threat of harassment or "eve
teasing” particularly of adolescent girls, rates of enrolment and completion have steadily increased for girls over the past decade and they are now surpassing boys in many schools across the country.

In terms of primary school teachers in the Sylhet division, schools had, on average, fewer teachers than the rest of the country (Chowdhury & Choudhury, 2011). The most common level of educational qualification among primary school teachers across the Sylhet division was the higher secondary certificate (HSC), which is granted upon the successful completion of grade 12 and the second most prevalent educational qualification was the secondary school certificate (SSC) or grade 10 (see Table 4.5).

Table 4.5  Percentage distribution of primary teachers by level of education and gender

<table>
<thead>
<tr>
<th>Education</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete secondary (&lt; Gr.10)</td>
<td>1.9</td>
<td>0.5</td>
</tr>
<tr>
<td>Secondary (Gr. 10)</td>
<td>27.6</td>
<td>24.4</td>
</tr>
<tr>
<td>Higher secondary (Gr. 12)</td>
<td>41.0</td>
<td>15.2</td>
</tr>
<tr>
<td>Bachelors degree</td>
<td>24.7</td>
<td>46.2</td>
</tr>
<tr>
<td>Masters degree</td>
<td>4.8</td>
<td>13.7</td>
</tr>
</tbody>
</table>

Source: Chowdhury & Choudhury, (2011)

Although efforts are being made to expand delivery of pre-service teacher training, there are still relatively high rates of primary school teachers without any form of training before entering the classroom. In contrast to the majority of education statistics provided thus far, the percentage of teachers that have received formal training is Sylhet is higher than the national average (see Table 4.6). At the national level, 62% of primary school teachers had training whereas nearly 81% of Sylhet's primary school teachers had basic professional training (Nath et al., 2011). The results are significantly lower at the secondary level with only 56.3% of teachers having received training.


Table 4.6  Percentage of trained teachers by strata and locality

<table>
<thead>
<tr>
<th>Strata / Location</th>
<th>Primary School</th>
<th>Secondary School</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strata</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural Sylhet</td>
<td>73.3</td>
<td>51.3</td>
</tr>
<tr>
<td>Rural Sunamganj</td>
<td>77.7</td>
<td>51.2</td>
</tr>
<tr>
<td>Rural Habiganj</td>
<td>83.5</td>
<td>55.1</td>
</tr>
<tr>
<td>Rural Moulvibazar</td>
<td>72.2</td>
<td>53.8</td>
</tr>
<tr>
<td>Urban areas</td>
<td>91.0</td>
<td>64.7</td>
</tr>
<tr>
<td><strong>Geographic Location</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain lands</td>
<td>82.6</td>
<td>55.5</td>
</tr>
<tr>
<td><strong>Haor areas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tea estates, hills, forest areas</td>
<td>60.0</td>
<td>n/a</td>
</tr>
<tr>
<td>Total</td>
<td>80.9</td>
<td>56.3</td>
</tr>
</tbody>
</table>

Source: Nath et al., (2011)

The summary provided of the state of primary education in Bangladesh and more specifically, the Sylhet division, is intended to give the reader a basic understanding (and appreciation) of the challenges and relative successes of primary education provision in this unique region of South Asia. An attempt will now be made to give some background information about the NGO that allowed me to conduct my study and the primary education program and teachers who were directly involved.

The NGO

The NGO is a grassroots, non-governmental organization that serves the poor in northern Bangladesh. Founded in 1979, the NGO is a well-regarded mid-sized NGO located in the Sylhet division. Early development activities focused on mainly agriculture support, nutrition, and health extension services. Since 1998, the NGO has focused its efforts on four core programmes: (i) a functional literacy program, which provides adult functional literacy courses, post literacy and continuing education courses; (ii) a livelihood enhancement program, which focuses on
home-based agriculture, livestock, poultry, duck breeding, fisheries, handicrafts, women's development and community health initiatives; (iii) an integrated financial services program, which includes group-based savings mobilization, micro- and enterprise-credit and insurance programs; and (iv) the primary education program, which promotes and provides six years of child-centred interactive primary education.

In 2009, the NGO began a large scale, five-year program focusing on a variety of educational services. The five-year program includes: (a) the primary education program (PEP), (b) functional literacy and lifelong learning programs including livelihoods education and skills training for adolescents and adults, and (c) a community improvement planning group. According to the NGO, the goal of the program is to empower communities by enhancing access to education and economic activities in disadvantaged communities across Bangladesh. Key outcomes of the primary education program include the eventual creation of an additional 312 primary schools that will enable approximately 67,000 children access to a quality primary education. To manage the new schools, an additional 1,200 new teachers will need to be hired and provided teacher training. With the scaling-up of the NGO’s education program, the need for research into how teachers adapt and implement pedagogical changes into their practice will become an extremely important resource. My study endeavors to offer information about the teacher change process to help those responsible for designing and delivering improved teacher training programs and continuous professional development support for existing teachers and school support staff.

**Primary education program**

The primary education program (PEP) began in 1985 and at the time of my study the program consisted of 112 primary schools for children in underserved rural communities in the Sylhet division in Bangladesh. According to Parvin, a senior program officer with the NGO, the PEP works on a small scale but without it many children would simply not be able to get an education (23/08/2010). While the program is small when compared to the size of the national school system, the NGO's objectives are anything but small. According to the Executive Director, the larger goal of the NGO is "to basically empower people, to empower women, men, and children. The primary education program helps build that foundation of human potential" (17/08/2010).
Each school is constructed on community-donated land and consists of a brick building with three classrooms and a principal's room/school office (see Figure 4.3).

![Diagram of the typical NGO school layout](image)

**Figure 4.3.** The typical NGO school layout

The school compound is also equipped with a hand pump for safe drinking water and toilets for the children. The PEP program aims to develop and demonstrate a high quality education model in an inclusive non-threatening classroom environment (see Figure 4.4, photos in Appendix 21).

![Diagram of the typical NGO classroom](image)

**Figure 4.4.** Diagram of typical NGO classroom

Legend: A & B = student tables and stools, C = jute carpet seating area, D = teacher's desk, E = shelving for supplementary materials, F = shelving for teacher's materials, G = blackboard, H = windows, I = bulletin board, J = classroom entrance
The NGO's primary education program offers a pre-school program (age 5) through to grade five (approximately age 10). There is a class size limit of 30 students. Within each class the children are divided into groups of 10. This arrangement is designed to allow teachers greater ease to move around the class to provide more focused support depending on each group's particular needs. The PEP conforms to the government primary curriculum from class one to class five. There is no government curriculum or textbooks for kindergarten so the NGO has developed its own curriculum and learning materials with an emphasis on learning through games, group activities, songs, and short walks to explore the local environment. For grades one through five, the schools use the government textbooks alongside supplementary materials designed by the NGO to make curriculum and lessons more child-centred and user-friendly.

The NGO aims to provide quality education in all of its schools through the use of activity-based learning materials and methods. The active learning methodology has continued to evolve since 1993 when it was first introduced to the NGO by a British volunteer working for an international development charity named Voluntary Service Overseas (VSO). The original active learning program involved dividing a class of 30 students into three 'focus' groups according to their academic ability level. Each group rotated through three daily activities covering reading and handwriting, story writing, and mathematics. The teacher's responsibility was to provide simultaneous academic support to each group that was focused on one of the three subject areas. Problems arose due to the challenging instructional demands associated with the focus group design and recently the NGO modified the program by adopting a whole class approach. Presently, students continue to work in groups but the teacher is only responsible for delivering instructions on one subject area at a time.

The NGO defines active learning as “many varied teaching techniques, all of which follow the principle that the key to successful learning is being fully engaged and being an active partner in discovery, rather than a passive receiver of knowledge” (NGO, 2007). According to a program document on the NGO's curriculum and methodology, “the teacher who implements active learning methodologies in the classroom must have a solid understanding of active learning principles and goals. He or she needs to be a skilled practitioner and an active partner in delivering the curriculum” (NGO, 2007). The NGO aims to continuously improve its own understanding of what it means to be an active learner and will continue to assess, re-evaluate, and innovate for the benefit of all involved.
The teachers who implement active learning methodologies in the classroom need to be skilled practitioners. Active learning principles such as discovery and collaboration are not commonly used in schools across Bangladesh and the approaches appear to be unfamiliar to teachers and students alike. Therefore, teachers need a solid understanding of the behavioural activities (such as hands-on activity or discussion) and cognitive activities (which involves the cognitive processes of selecting, organizing, and integrating) (Mayer, 2011). The NGO’s effort to prepare teachers for the demands of the classroom begin with one month of initial teacher training for all newly recruited teachers. The initial teacher training involves 12 days of classroom-based instruction combined with 18 days of school-based practice teaching. Content of initial teacher training includes, but is not limited to, lessons on managing the class environment and student behaviour, student assessment, differentiating support for students, subject-based teaching strategies, and leading co-curricular activities. Additional in-service teacher development provisions include a variety of workshops throughout the academic year including quarterly (3 days) subject-based training, and monthly (1 day) refresher training. Beyond providing professional development support for teachers, the NGO has also developed teacher resource guides for each subject and grade level. Each resource guide provides teachers with detailed daily lesson plans and suggestions for supplementary activities. The resource guides also cover topics and strategies discussed during teacher training.

Chapter summary

Returning first to Sir Michael Sadler's question provided at the beginning of this chapter, there is much that can be learned from studying Bangladesh’s system of education. Despite its relatively small size, Bangladesh operates one of the largest primary education systems in the world. Within the primary education system exist many innovative teachers and primary education programs like the NGO that participated in my study. This chapter aimed at orienting the reader to the context where the participants in the study live and work. Additionally, the aim of this chapter has been to provide a summary of Bangladesh’s geography and its people. This was followed by an overview of the current state of primary education policy and practice in Bangladesh and more specifically in the Sylhet division where the study took place. Additionally, a detailed account of the NGO's primary education program was provided including descriptions of school and classroom layout. Last, an overview of various forms of pre-service and in-service teacher training was discussed. In the following chapter I present the first set of research findings.
Focus is directed toward: addressing the different concerns teachers' express while trying to implement the NGO's active learning methodology in the classroom.
Chapter 5: The Concerns Teachers Express About Implementing Active Learning Methods

The findings presented are based on the open-ended concerns statements following CBAM procedures (Newlove & Hall, 1976). According to the CBAM framework for Stages of Concern (SoC) (see Table 5.1), participants move through a set of developmental stages of concern, beginning with concerns about self to concerns about the task and eventually to concerns about the impact of their teaching on students. At any one time a teacher may express concerns related to more than one stage; however, the intensity of concerns within stages will vary depending on their experience and progress in learning to use the innovation.

Table 5.1 The Stages of Concern about an innovation

<table>
<thead>
<tr>
<th>IMPACT</th>
<th>TASK</th>
<th>SELF</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6</td>
<td>6</td>
<td>Refocusing</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
<td>Collaboration</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>Consequence</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>Management</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>Personal</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>Informational</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>Awareness</td>
</tr>
</tbody>
</table>

The focus is on evaluating the innovation and possibly making major modifications for continued improvements, or considering alternative ideas/innovations altogether.

 Concerns reflect teachers' interest to coordinate and cooperate with others in the school to improve the benefits of change implementation for students.

 Teachers' concerns now centre upon the impact on students in their classroom. Focus is on relevance of the innovation for students, evaluation of student outcomes, and the possibilities for modifying the innovation or their use to improve its effects.

 Teachers focus on the processes and tasks of using the innovation and the best use of information and resources. At this point, teachers' concerns intensify around issues related to efficiency, organizing, managing, and scheduling.

 Teachers are concerned about their ability to use the innovation to implement change. Concerns might also involve personal costs of getting involved.

 Teachers indicate a general awareness of the innovation and interest in learning more about it. Teachers are interested in the characteristics, requirements for use, and implications of the innovation.

 Teachers have little knowledge about or interest in the change.

Source: (George, Hall, & Stiegelbauer, 2006)

To collect data on the teacher's concerns, each participant was invited to complete the following open-ended question: "When you think about using active learning, what are you
concerned about?" The open-ended statement of concerns is a standard format developed by Fuller and Case (1972) and further developed into a manual for assessing open-ended statements of concern about an innovation by Newlove and Hall (1976). Each participant's statement was collected, translated from Bengali into English, and then content analyzed. Each participant's statement was carefully read and a stage of concern (SoC) was assigned to each pertinent sentence in order to make a holistic assessment.

The open-ended statement of concern has numerous strengths as a data collection tool. The first is its relative simplicity as a research tool; participants are required to respond to just one question. The second strength is that the concerns are in the respondents' own words. There are also a number of disadvantages with the open-ended format. In my study, the participants provided different amounts of information; some wrote one paragraph while others provided two pages of writing. A second challenge was trying to ensure that the participants properly understood the question. A great deal of time and effort was required to properly convey or help teachers' conceptualize the idea of a "personal concern".

This section attempts to identify the participants' SoC about their use of active learning methods of instruction at the particular time the statements were completed (see Table 5.2).

<table>
<thead>
<tr>
<th>Stages of Concern</th>
<th>Novice User</th>
<th>Intermediate User</th>
<th>Experienced User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informational</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.2 Teachers’ concerns about implementing active learning
<table>
<thead>
<tr>
<th>Stage 2</th>
<th>Personal</th>
<th>Stage 3</th>
<th>Management</th>
<th>Stage 4</th>
<th>Consequence</th>
<th>Stage 5</th>
<th>Collaboration</th>
<th>Stage 6</th>
<th>Refocusing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• knowing subject matter enough to teach</td>
<td>• meeting individual learner’s needs</td>
<td>• managing low-achievers’ time on-task</td>
<td>• adapting teaching strategy to support student needs</td>
<td>• assessing quality of student understanding/learning</td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• assessing quality of student understanding/learning</td>
<td>• assessing quality of student understanding/learning</td>
</tr>
<tr>
<td>• inequity of student participation</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• differentiating support to students</td>
<td>• assessing students’ knowledge and skills</td>
<td>• assessing impact of group work on student achievement</td>
<td>• meeting individual learner’s needs</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• assessing impact of group work on student achievement</td>
<td>• assessing impact of group work on student achievement</td>
<td>• assessing impact of group work on student achievement</td>
</tr>
<tr>
<td>• difficulty using active learning methods</td>
<td>• preparation time</td>
<td>• ensuring a joyful class environment</td>
<td>• selecting teaching methods</td>
<td>• adapting teaching strategy based on student needs</td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• adapting teaching strategy based on student needs</td>
<td>• adapting teaching strategy based on student needs</td>
<td>• adapting teaching strategy based on student needs</td>
</tr>
<tr>
<td>• time to learn and prepare lessons</td>
<td>• logistics of teaching priorities</td>
<td>• efficient use of implementation time</td>
<td>• impact on individual achievement</td>
<td>• selecting teaching methods</td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• impact on progress of low-achievers</td>
<td>• impact on progress of low-achievers</td>
<td>• impact on progress of low-achievers</td>
</tr>
<tr>
<td>• competing responsibilities</td>
<td>• sufficient time for practice</td>
<td>• providing enough time for practice</td>
<td>• impacting students’ knowledge and skills</td>
<td>• selecting teaching methods</td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
</tr>
<tr>
<td>• selection of appropriate supplementary materials</td>
<td>• improving class environment (joyful)</td>
<td>• managing time on-task</td>
<td>• impact on individual achievement</td>
<td>• selecting teaching methods</td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
</tr>
<tr>
<td></td>
<td>• maximizing student engagement</td>
<td>• communicating with others to improve lesson delivery</td>
<td>• impact on students’ attitude towards school</td>
<td>• adapting teaching strategy based on student needs</td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• adapting teaching strategy based on student needs</td>
<td>• adapting teaching strategy based on student needs</td>
<td>• adapting teaching strategy based on student needs</td>
</tr>
<tr>
<td></td>
<td>• differentiating support to students</td>
<td>• impact on students’ attitude towards school</td>
<td>• adapting teaching strategy based on student needs</td>
<td>• selecting teaching methods</td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
</tr>
<tr>
<td></td>
<td>• ensuring a joyful class environment</td>
<td>• assessing impact of group work on student achievement</td>
<td>• assessing impact of group work on student achievement</td>
<td>• impact on individual achievement</td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
</tr>
<tr>
<td></td>
<td>• efficient use of implementation time</td>
<td>• assessing quality of student understanding/learning</td>
<td>• peer dependency of low-achieving students</td>
<td>• impact on individual achievement</td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
</tr>
<tr>
<td></td>
<td>• providing enough time for practice</td>
<td></td>
<td></td>
<td></td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td></td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
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<tr>
<td></td>
<td>• managing time on-task</td>
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<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td></td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
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<td></td>
<td>• communicating with others to improve lesson delivery</td>
<td></td>
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<td></td>
<td>• working hard</td>
<td>• knowing enough pedagogical content knowledge to teach</td>
<td></td>
<td>• selecting teaching methods</td>
<td>• selecting teaching methods</td>
</tr>
</tbody>
</table>

**Stages of Concern**

- **Novice User**
- **Intermediate User**
- **Experienced User**
The purpose of the open-ended statement of concern was to make a holistic assessment of teachers' concerns about using active learning methods. Based on an inductive analysis of the data obtained from the open-ended statements of concern, I identified seven common areas of concern about active learning as expressed by the teachers in the study. Furthermore, the teachers in my sample clustered into three groups based on their experience with active learning methods: (a) **novice users** (less than two years of teaching experience) of active learning, (b) **intermediate users** (between two and five years of teaching experience), and (c) **more experienced users** (more than five years of teaching experience). Many identified concerns were expressed, albeit with different nuances or degrees of intensity, by teachers in all three “user or proficiency” groups.

**Common teacher concerns**

1. **Pedagogical concerns**

   First, active learning method seems very difficult to me. Later, I have found that if I take preparation before class there will be no difficulty. An amazing environment is found in class if teachers follow this method. (Afzal, 25/11/2009, novice user)

   Across all teachers in the study, concerns about their ability to properly implement active learning methods in the classroom were repeatedly mentioned. With little or no prior personal or professional experience with active learning methods, many of the participants mention feelings of nervousness and an initial lack of confidence with this pedagogical approach at the beginning of their careers. A particular Personal (Stage 2) concern expressed by novice, intermediate, and experienced teachers, was their knowledge and ability to apply active learning strategies properly regardless of the subject or grade level.

2. **Use of supplementary materials**

   To use real materials in teaching we make students attentive in the lesson and children get fun too. (Rezwan, 12/01/2010, intermediate user)

   A repeated concern identified by all the teachers had to do with their ability to select and incorporate appropriate supplementary materials for students. As teachers gained experience building supplementary materials into their lesson, their concern seemed to shift from a Personal
concern focused on selecting suitable supplementary materials to a Managerial concern that focused less on the teacher's lesson delivery and more on the teacher's competency integrating supplementary materials that helped maximize the learning opportunities for students.

3. Curricular concerns

Teachers have so many responsibilities such as coming to school on time, taking preparation for every lesson, collecting teaching materials, and getting the proper idea to apply them. If teachers are aware of all these factors, class will be attractive and teachers' skill and confidence will be developed. (Afzal, 25/11/2009, novice user)

Shifting to teachers' concerns about managing their teaching responsibilities, one intermediate user expressed concern about covering sufficient content within the limited class time available. A couple of experienced teachers also mentioned their concern about having to closely follow a fixed curriculum handed down to them by the curriculum developers from the NGO's Central Office. According to one teacher, "[I]n active learning there is a fixed form for teaching students. In this method we must follow it completely...[I] think the teacher would be more active if they got more freedom in teaching; lessons would be more attractive to students." (Bushra, 25/11/2009, experienced user)

4. Class environment concerns

An amazing environment is found in class if teachers follow the active learning method. (Afzal, 25/11/2009, novice teacher)

Ensuring a positive learning environment for students was a common concern among the teachers. According to CBAM's Stages of Concern framework, the teachers' focus on class management concerns illustrates a shift from a Personal (Stage 2) to a Management (Stage 3) concern. When addressing the management of the classroom environment, one novice teacher and two experienced teachers discussed their concerns about ensuring a joyful learning environment for students. Teachers focused on designing lessons that were attractive to students, being friendly with students, and keeping watch on students to ensure they were in a "happy mood".
5. Time for implementation

[Students] who are talented need less time but those who are weak need more time and support. (Ritu, 12/01/2010, experienced user)

The management and efficient use of time was particularly problematic for novice teachers. They were concerned with finding enough time to organize their lessons and cover the required weekly and monthly syllabus. They were also concerned that faithfully following the "fixed method" and teaching all the chapters from the NCTB textbooks for grade three to grade five in time for the year-end public examinations would be impossible.

More experienced users of FIVDB's active learning methods also expressed Management (Stage 3) concerns about time constraints, but they focused more on issues related to student learning. Two intermediate teachers and one experienced teacher were concerned about providing sufficient opportunities to enable students to practice new concepts and complete the lesson activities within the allotted class time since allocating homework was not a common practice among teachers at the schools. The "time" issue is likely shaped by structural conditions of the organization of the curriculum and timetable for its delivery in the schools. The challenge for teachers appears to be that this focus on time limits and covering the lesson plan materials does not seem to fit that comfortably with the active learning activities mode encouraged by the NGO. Consequently, the persistence of the issue around "time" becomes a concern for teachers with greater experience as users of the active learning approach.

6. Differentiated support

Some students can learn words and others cannot even write letters during class time. In this situation, I try to teach both of them to overcome their lacking.

(Rezwan, 12/01/2010, intermediate user)

As teachers gained experience with the active learning pedagogy, their concerns about differentiating support for students gradually shifted from more abstract personal concerns about the inequity of student participation, to strategies for supporting students with learning tasks. Beginning users tended to have high personal and management concerns about meeting individual learners' needs, especially for those students viewed as low-achievers.
For more experienced teachers, concerns about differentiated support started with an effort to appreciate and to "understand the quality or level of students" (Bushra, 25/11/2009, experienced user). Consequently, the teachers then focused on ways to modify their teaching strategies and change the delivery of their lessons to provide the necessary one-on-one support for large numbers of low-achieving students.

7. Student outcomes

I am always careful about my class environment and my presentation of the lesson. Do they ask questions from my lesson? Do my students understand my lesson? (Rezwan, 12/01/2010, intermediate user)

Teachers also discussed concerns centred on the impact of their teaching on students in their classroom (Stage 4). The focus was more on the consequences of the teachers' actions (e.g., relevance of active learning for students, evaluation of student outcomes). Novice teachers were concerned with the impact of their active learning pedagogical approach on students' attitude towards school (e.g., I should try to make my lessons interesting for low-achievers so they are not afraid of learning.). The intermediate and experienced users were more concerned about establishing ability groups and peer support especially for low-achievers. One experienced teacher stated, "I always identify weak students and make two groups for strong and weak students and give work up to their level" (Ritu, 12/01/2010). For the more experienced teachers, the main concern was assessing the impact of differentiating the delivery and support of active learning methods for both low- and high-achievers.

Discussion

Building on the common teacher concerns presented above are some larger themes emerging from the teachers' responses. One key theme noted among many of the novice, intermediate, and experienced teachers was the tension between following the lesson plans provided in the teacher resource guide materials and being more flexible and open-ended as per active learning / constructivist principles. For example, one teacher commented on the necessity of following a "fixed form for teaching students and maintaining classroom management" (Bushra, 25/11/2009). Teachers had mixed impressions of the teacher resource guides. One experienced teacher stated, "By following the teacher's guide...I have overcome my nervousness"
Another teacher complained that she had less freedom because of the resource guides. Among a few of the teachers, a desire emerged to have more freedom in their teaching, believing the flexibility to adapt their lessons would help make them more attractive, and at times, easier for the students to understand. Many of the teachers described the importance of using real materials in their lessons such as simple sticks, twigs, and leaves for counting and learning about shapes and sizes. The use of readily available materials from the local environment demonstrated instances where the teachers followed constructivist principles and provided the social milieu and familiar materials for children to learn more easily.

Another common concern expressed by teachers was the challenge of differentiating the prescriptive teachers' resource guides to accommodate differences in student readiness and performance. Although teachers recognized the importance of following the lesson plans provided for each class, they were equally concerned about the impact of their teaching on students. All teachers recognized that among the students in their classes, many were low-achievers and, although fewer in number, there were also students that were high-achievers. From the open-ended concerns statements it was noted that six of the teachers wrote about the importance of "...applying different techniques to make the topics easier for [students'] understanding" (Rezwan, 12/01/2010). Ritu, who was one of the more experienced teachers in the study acknowledged that "more talented" students required less class time to complete their work while "...those who are weak need more time and effort..." and it was her responsibility to "...give them work according to their merit level" (12/01/2010). This sentiment and concern about supporting lower achieving students came up frequently among the teachers. Teachers mentioned a variety of approaches to address low-achieving students' needs including organizing mixed-ability groupings in the classroom, providing additional support and instructions, taking the time to understand individual student needs and level of understanding, and "properly applying active learning methods" (Anisa, 25/11/2009).

Numerous trends have been noticed in the teachers' shift from novice to experienced users of active learning. According to the SoC findings, the number of Personal (Stage 2) concerns of novice users (less than two years of teaching experience) was greater than intermediate (between two and five years of experience) or experienced (more than five years experience) users. Among novice teachers, concerns primarily focused on logistical (e.g., time to learn and prepare lessons), and competing management concerns such as selecting appropriate supplementary materials,
ensuring students attend school regularly, managing student behaviour and ensuring a safe and clean classroom environment. When one considers that the highest level of educational attainment among two of the teachers is grade ten (Secondary School Certificate) and that eight of the teachers competed grade twelve (Higher Secondary School Certificate), we should not be surprised that possessing a solid understanding of pedagogical content knowledge is a significant concern for many teachers. Teachers that were experienced users of active learning had few personal concerns beyond working hard and ensuring they had sufficient pedagogical content knowledge to properly teach their lessons.

When it came to focusing on the processes and tasks of using active learning, novice, intermediate and experienced teachers had an equal number of concerns. For the novice users of active learning strategies, an efficient use of implementation time was the major concern. More experienced teachers mentioned concerns about providing sufficient time for students to practice in class but they also highlighted concerns about the rigidity of the curriculum and questioned the relevance of the prescriptive lesson plans. A common management (Stage 3) concern across teachers dealt with building positive relationships with students and ensuring a joyful environment in the classroom.

At the Consequence SoC (Stage 4), a predominant concern among all teachers in the study was the impact that the classroom environment had on students' attitude towards school. For example, Rezwan commented that his first priority was to make his lessons interesting for his students. Similarly, Hana stated, "...being friendly and listening to the students' problems" was important (25/11/2009). Other common teacher concerns included a major focus on assessment and evaluation of student engagement and learning. Novice teachers and experienced teachers alike mentioned in equal measure their concern about assessing the quality of student understanding, the impact of group work, and when necessary, adapting their teaching strategies depending on student needs and levels of performance.

An interesting finding was the relative absence of teachers' concerns in four of the stages identified by the developers of CBAM. The developers of the SoC construct assume a teacher might have different feelings and motivations about a change in curriculum and/or instructional practices at different points in its implementation. Furthermore, the SoC framework presents a possible, but not a necessary, progression of teacher concerns about a change (Anderson, 1997). For example, at Stage 0, Awareness, a teacher has little knowledge about or interest in the
change. At Stage 1, Informational, a teacher indicates a general awareness of the innovation and interest in learning more about it. These assumptions are not an ideal fit considering the teachers in this study. For example, given that all teachers are required to attend initial basic teacher training with the NGO before they are given a class of their own, it is not surprising that none of the teachers' concerns were at the awareness stage or informational SoC. The initial teacher training involves an intensive two-week residential course focusing on the NGO's particular "brand" of active learning philosophy and pedagogy, as well as mentoring and supervision strategies, teacher evaluation, subject-based teaching methods, child psychology, assessment, and a teaching practicum for an additional 18 days. By the time teachers assume a class of their own, they have a strong theoretical understanding and modest practical experience with the NGO's particular active learning approach. Consequently, their concerns have progressed beyond an awareness or information SoC and they have begun to experience personal, management, and even consequence stage concerns.

After analyzing the open-ended concerns statements, none of the teachers' concerns were judged to be at the Collaboration (Stage 5) or the Refocusing (Stage 6) stages. At this level, a teacher's concerns focus on the impact or what is happening with students and what changes can be implemented by the teacher to better meet the needs of students (Hall & Hord, 2006). Based on the teachers' concerns statements, there was an apparent lack of concern, willingness or opportunity among the teachers to regularly coordinate and cooperate with others in the school or across the NGO's schools to try and improve their lessons to enhance student learning outcomes. Furthermore, there was no evidence that teachers had any thoughts about abandoning the active learning approach for something, presumably better, in their minds.

Teachers gave little indication they were attempting to collaborate with colleagues in an attempt to refocus their pedagogical approach. During interviews, class observations, and informal discussions, teachers mostly conveyed a sense of satisfaction with the state of their individual classrooms and overall performance. Possible reasons for the lack of collaboration include insufficient time during the school day to meet, discuss, and coordinate with colleagues. All the NGO's schools operate two shifts each day. Every teacher is responsible for one class in the morning shift and a second class and grade level during the afternoon shift. Teachers have as little as fifteen minutes to take a rest and make preparations before the second shift begins each day. Another possible rationale explaining why there was no indication of collaboration or
evidence that teachers were considering major alternative instructional strategies stems from the generally positive feedback and positive external assessments of their teaching performance. It appears that so long as teachers regularly show up for work and follow the prescribed lessons in the teacher resource guides then parents, school supervisors, and trainers were satisfied, thus creating little external incentive for refinement or major changes in teachers’ skills and patterns of use of active learning methods.

Chapter summary

The open-ended statements of concern analyzed in this chapter provided insights into common concerns experienced by the participants in the study. Across novice, intermediate, and experienced teachers their perceptions of active learning varied between concerns focused on themselves and the effect that trying to implement an active learning program was having on them personally and concerns about the impact of the active learning program on the students. In general, it appears that the teachers’ concerns about implementing active learning methods developed towards later stages (impact) with added experience and familiarity with the curriculum and available teaching resources. In the next chapter I analyze interview data from the Levels of Use interview protocol to explain how teachers use active learning approaches in the classroom. I also attempt to explore the relationships between the Stages of Concern findings with the Levels of Use interview data.
Chapter 6: How Teachers Use Active Learning Approaches In The Classroom

The second stage of the study employs the CBAM research-based construct Levels of Use (LoU). With its focus on actual classroom practices, the eight LoU represent key functions that teachers carry out when they are using (or doing) an innovation. The different levels can indicate if teachers are still experimenting and preparing for use (preparation level), are working well with an innovation (routine level), or are improving and adapting it based on their experience (refinement level) (Loucks-Horsley & Stiegelbauer, 1991). Brief descriptions of each level are presented in Table 6.1.

Table 6.1  **Levels of Use of the innovation**

<table>
<thead>
<tr>
<th>Users</th>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VI</td>
<td>Renewal</td>
<td>State in which the teacher re-evaluates the quality of use of the innovation. At this level, teachers may feel the need to make a major change in the innovation or explore alternative practices and goals.</td>
</tr>
<tr>
<td>V</td>
<td>Integration</td>
<td>State in which the teacher collaborates with other teachers to make adaptations for the benefit of the students. At this level, teacher actions extend to the impact of implementation beyond their own individual classrooms.</td>
</tr>
<tr>
<td>IV B</td>
<td>Refinement</td>
<td>At this state, teachers vary the use of the innovation based on assessment of the impact on their students. Changes in innovation use are student-centred.</td>
</tr>
<tr>
<td>IV A</td>
<td>Routine</td>
<td>Reflects a state when a teachers’ use of the innovation has stabilized. Few if any changes or adaptations are being made in ongoing use of the innovation. Little preparation or thought is being given to improving innovation use or its consequences.</td>
</tr>
<tr>
<td>III</td>
<td>Mechanical Use</td>
<td>State in which the teacher begins change implementation. The teacher is struggling with the logistics of the implementation and with the need to acquire new skills and knowledge pertaining to the innovation. At this level, changes in the innovation are largely teacher-centred. Use of the innovation is often disjointed and superficial at this stage.</td>
</tr>
<tr>
<td>II</td>
<td>Preparation</td>
<td>Reflects a state in which the teacher is actively preparing to put the change into practice.</td>
</tr>
<tr>
<td>I</td>
<td>Orientation</td>
<td>State in which the teacher seeks more information about the change but has made no decision for its implementation.</td>
</tr>
<tr>
<td>0</td>
<td>Nonuse</td>
<td>Reflects a state in which the teacher has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.</td>
</tr>
</tbody>
</table>

Source: Hall, Dirksen, & George, (2006)
The LoU interview procedure (Loucks, Newlove, & Hall, 1975) uses a branching interview format, which is organized around operational definitions along with a set of decision points that branches in varying ways as more is learned about what the participant is doing (see Appendix 10). The LoU interview probes how people act or behave and thus enables the researcher to generate data on levels and categories and to place an individual teacher at one of the levels (Loucks et al., 1975). Most important in the interview process is asking questions that are based on seven categories that make up each level, including: (a) knowledge, (b) acquiring information, (c) sharing, (d) assessing, (e) planning, (f) status reporting, and (g) performing (Hall & Hord, 2006). The focused interview format provides the researcher with information about teachers' innovation-related behaviours. As mentioned in Chapter 3, the LoU rating for each participant was determined using the LoU Rating Sheet (see Appendix 13). The aim of the rating was to place each participant at a LoU for each category and assign an overall LoU. The rating process involves rating all categories and identifying where the person is according to the LoU Chart (see Appendix 12).

LoU interviews with the ten participants from ten different schools took place from March to June 2010 across the Sylhet division. Each interview took between 45 and 60 minutes (due to the need to translate back and forth from Bengali to English and English to Bengali). The purpose of conducting the LoU interview was to determine where the participants are in the change process. My goal was to assess the implementation level of active learning methods of the ten participants in the study. The findings from my interviews with the teachers are presented in this chapter.

Based on the data generated using the LoU focused interview protocol, a systematic analysis of each teacher \( (n = 10) \) participating in the study was undertaken. The distribution of overall LoU scores for participating teachers is shown in Table 6.2. The LoU data indicate that one teacher is at a Mechanical level of use while the majority of teachers in the study are at a combined Mechanical and Routine level of use of active learning methods. Two of the more experienced teachers are actively working on Refining their use of active learning methods. In addition to the overall LoU scores, participants' ratings based on each of the seven LoU categories are shown as a bar graph in Appendix 14. While detailed analyses of LoU interview data was completed for each teacher in the study, space precludes a detailed presentation of all ten teacher's LoU findings. In the following section, a full analysis for one teacher from each of
the four main LoU identified in the study is presented as a vignette. For the levels containing more than one teacher, I present a vignette for one teacher accompanied by a comparative commentary about the LoU data from the other teachers in the same grouping. Following the narratives of substantive patterns in the teachers' LoU of active learning, I provide a summary of findings depicting extremes in LoU ratings and an explanation for the absence of particular LoU ratings. Last, I present a detailed discussion of the notable relationships identified between the SoC and LoU findings.

### Table 6.2 Distribution of overall LoU scores for participating teachers (n = 10)

<table>
<thead>
<tr>
<th>Levels of Use</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>(Muna)</td>
</tr>
<tr>
<td>(Mechanical Use)</td>
<td></td>
</tr>
<tr>
<td>III / IV A</td>
<td>(Afzal, Fariha, Rezwan, Ritu, Tahsin)</td>
</tr>
<tr>
<td>(Mechanical / Routine Use)</td>
<td></td>
</tr>
<tr>
<td>IV A</td>
<td>(Anisa, Wasifah)</td>
</tr>
<tr>
<td>(Routine Use)</td>
<td></td>
</tr>
<tr>
<td>IV A / IV B</td>
<td>(Bushra, Hana)</td>
</tr>
<tr>
<td>(Routine Use / Refinement)</td>
<td></td>
</tr>
</tbody>
</table>

**Teacher's experiences adapting and implementing active learning in the classroom**

**Level of Use III: Mechanical Use**

At the Mechanical LoU, a teacher is focused on simply trying to implement the innovation effectively during each of the lessons (Hall & Hord, 2006). Any adaptations, however, are made more to meet the needs of the teacher rather than the students. If the teacher is making any plans they are typically short-term or day-to-day and will likely address efficiency concerns or issues related to the fidelity of implementing the innovation, and less toward improving its impact on student learning. In my study, Muna was the sole teacher rated at a 'Mechanical' (LoU III) level of use of active learning methods.
Muna

Muna is the youngest participant in the study. She is also quite new to teaching and has less than two years of experience. Her position with the NGO's primary education program is her first opportunity to be a classroom teacher. Despite her limited professional experience, Muna has been delegated additional administrative responsibilities at her school. The challenges of such a position are exacerbated by the professional isolation Muna has to contend with as the only teacher presently working at the school. At the time of the study, she was teaching preschool during the morning shift and grade one during the afternoon shift at Nauka Primary School. Muna's highest level of education is the Higher Secondary School Certificate (grade 12). In terms of her proficiency as a user of active learning methods, Muna rated herself as a "novice". According to Muna, "Since I've just started grade one I feel like there is much to be learnt" (16/03/2010).

Muna was invited to participate in phase two of the study as a result of her concern for the quality of implementation of her lessons, her willingness to adapt her lessons, and the impact this has on her students' learning. Based on the findings from the LoU interview, Muna's overall LoU rating was determined to be Level III or a Mechanical use of active learning methods.

Levels of Use categories

a. Knowledge

Although Muna has only recently been implementing an active learning methodology, she seems to appreciate its potential benefits. While recognizing that incorporating supplementary math materials such as stones and sticks can help her young students learn more quickly, Muna also values the impact that visual aids and games can have on her students' conceptual understanding of abstract mathematical concepts. Muna, mentioned that her students' letter recognition in Bengali class also improved with the use of supplementary materials. According to the teacher, "when I'm teaching [the students] the alphabet on the board I use the letter cards to check and see if they have paid attention and learnt anything" (16/03/2010). Muna discussed how applying active learning methods has helped her better differentiate support for students. Muna mentions many benefits of dividing her students into 'ability' groups:

Dividing the class into groups really helps; one group for strong students, one for medium students, and one group for weak students. That way it is easier for me to make sure I pay
most of my attention to the weak students and make sure they are learning. The active learning method has made this very easy (16/03/2010).

When I asked Muna if there were any weaknesses with the active learning methodology, she talked about her difficulty in meeting the day-to-day lesson expectations. In particular, she was concerned that some of the learning expectations found in her lesson plans and syllabus documents were out-of-sync with her student's abilities. According to Muna, "writing letters, stories or diaries is inappropriate for now. I feel that they should do it later on when they have learned more" (16/03/2010).

Although Muna seems to have an appreciation for the cognitive affects of using active learning methods, her predominant focus appears to be on trying to properly teach the daily lesson plans provided in her teacher resource guides. Based on the LoU Chart (see Appendix 12), Muna's commitment to mastering her lessons and properly implementing various prescribed activities demonstrates a Mechanical (LoU III) knowledge of active learning.

b. **Acquiring information**

To improve her teaching, Muna depends on the monthly training sessions provided by the NGO for new ideas and information. Monthly "refresher" courses provide an opportunity for Muna to seek other teachers' opinions and experiences. She also uses her time during training to ask specific questions related to her own challenges teaching particular subjects or lessons: "...when I go to the training, I have the urge to learn from others and get to know how they go about using ALM [active learning methods]" (16/03/2010). According to Muna, the training sessions provide her with more knowledge and insights into the benefits of active learning as well as the cognitive and affective impact of this pedagogical approach. Muna's dependence on management information about such things as logistics, scheduling techniques, and ideas that can potentially increase her level of efficiency in the classroom are illustrative of a Mechanical (LoU III) use of active learning.

c. **Sharing information**

Since Muna's school is located in a relatively remote area that is accessible only by boat during the monsoon season, there are limited opportunities to meet with colleagues and share information. When she does attend monthly training sessions she takes advantage of the opportunity to share ideas with her colleagues. Muna also discusses her work with her
grandparents as well as an aunt who teaches in a government primary school. In particular, she talks about different types of cooperative activities she uses with her students. She also mentioned asking her family about strategies they use to ensure students do well on exams. According to Muna, "My aunt told me that at school they only concentrate on Bengali, English, and math and the rest they teach in the evening at a coaching centre they have started" (16/03/2010). It seems that most of the sharing that Muna participates in consists of comparing and contrasting the different styles of teaching that take place at her school and at a government primary school in the vicinity. When asked if there was one person she shares with more than anyone else, Muna stated that her supervisor has probably been the most helpful and most frequent visitor to her classroom. According to Muna, her supervisor visits her two or three times each week providing immediate support and helping solve problems as they arise. Despite sharing ideas and information with others, there is no indication that Muna is considering alternative teaching strategies. Similar to Muna's effort to acquire new information, her involvement in sharing ideas seems to be at a Mechanical (LoU III) level of use.

d. Assessing

Muna's comments about assessing the active learning approach are focused on the effects that her teaching is having on students. She does not speak specifically about personal attempts to assess her teaching methods, nor about her methods of assessment of student learning. Instead, Muna provides numerous examples of the generally positive impact and reaction of the active learning approach on her students. She mentions that her students learn easier and more quickly because of their use of supplementary materials. In another example, Muna explains that her students have developed a positive attitude about learning and are applying their emerging literacy and numeracy skills in their day-to-day lives.

For example, when [my students] are walking down the road and they see leaves or flowers under the trees, they count them...When they see books lying around they try to read...I understand that my students are enjoying the process of learning and I see the effects of the active learning method right in front of me (16/03/2010).

In terms of prioritizing her teaching, she states that she tries to teach "exactly according to what the book [teacher resource guide] says" (16/03/2010). Based on these findings, Muna seems to be at a Routine level (LoU IV A) of assessing her teaching practice. She limits evaluation of her use
of active learning strategies to those administratively required and there is little evidence that her efforts at assessment are focused on modifying her teaching approach. She mainly assesses learning through her informal observations of student response and engagement in the various active learning activities.

**e. Status reporting and performing**

Muna's view of her overall use of active learning methods is indicative of a Mechanical (LoU III) level of use. According to Muna, "I know that I'm not fully able to do everything that the active learning method requires of me but I am trying" (16/03/2010). Her acknowledgement of certain requirements of the active learning method illustrates a personal focus on management, logistical issues and properly utilizing resources. Similarly, when describing her teaching performance, Muna comments that she generally just follows the prescribed lesson plan instructions and periodically will try to slightly modify the lessons to help her younger students learning more easily.

**Table 6.3 Assignment of LoU rating - Muna**

<table>
<thead>
<tr>
<th>Level</th>
<th>Knowledge</th>
<th>Acquiring Information</th>
<th>Sharing</th>
<th>Assessing</th>
<th>Planning</th>
<th>Status Reporting</th>
<th>Performing</th>
<th>LoU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonuse (Level 0)</td>
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<tr>
<td>Orientation (Level I)</td>
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<tr>
<td>Preparation (Level II)</td>
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<tr>
<td>Mechanical (Level III)</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Routine (Level IV A)</td>
<td></td>
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<td>✔️</td>
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<tr>
<td>Refinement (Level IV B)</td>
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<tr>
<td>Integration (Level V)</td>
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<tr>
<td>Renewal (Level VI)</td>
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</tr>
</tbody>
</table>
Levels of Use III & IV A: Mechanical and Routine Use

The analysis of the LoU interview data (Hall, Dirksen & George, 2006) reveals that five teachers are at both a Mechanical (LoU III) and Routine (LoU IVA) level of use of active learning methods (see Table 6.2). To illustrate the characteristics of a teacher at this combined LoU, I provide an analysis of Rezwan's interview. Following Rezwan's "vignette", a comparative commentary is given of the interview findings from Fariha, Ritu, Afzal, and Tahsin; the four other teachers rated at the Mechanical and Routine LoU.

Rezwan

Rezwan has four years of experience as a teacher with the NGO's primary education program. At the time of the study, Rezwan was teaching preschool during the morning shift and grade five during the afternoon shift at Posheem Primary School. His highest level of educational attainment is the Secondary School Certificate, which was granted upon successfully completing grade ten. Rezwan is one of three teachers working at Posheem Primary school, which is located in the centre of a small village. A well-paved road ensures easy access to the school for students living nearby. Based on Rezwan's comments on the open-ended concerns statement from phase one of the study, he was selected to participate in phase two. In particular, Rezwan discussed his concerns about providing individualized support to students as well as trying to apply different strategies that would help his students understand the lessons easily.

Levels of Use categories

a. Knowledge

Rezwan believes the teaching approach used at his school increases students' capacity to learn. "We see all the time that not all students understand and learn at the same pace, but this method of teaching enables me to ensure that all students learn equally" (15/03/2010). Rezwan states that regularly including supplementary materials into the lessons is a major pedagogical strength. According to Rezwan, "When I teach [students] using sticks, stones, and seeds they understand faster and it's easier for them to deliver later" (15/03/2010). His interpretation of active learning also involves a positive view of the benefits of group work. Rezwan argues, "Dividing the class into three groups is really good. It enables the teacher to differentiate support for students and students can better learn in a small, more comfortable environment" (15/03/2010). Based on the LoU Rating Sheet (Hall, Dirksen, & George, 2006), Rezwan
demonstrates a Mechanical (LoU III) understanding of the requirements to teach using active learning methods, at least on a day-to-day basis and his knowledge of the immediate impact of his efforts on his students appears relatively strong.

\textit{b. Acquiring information}

Rezwan makes an effort to solicit new or additional information to try and improve his effectiveness as a teacher beyond what he receives from on-going professional development provided by the NGO. He has a general awareness that "...this method is really important for the primary education system" but he wants more guidance and concrete details about the objectives of the active learning method (15/03/2010). He frequently communicates with the other two teachers at his school as well as his supervisor to resolve day-to-day problems. For example, while preparing a questionnaire for students, he sought guidance from his head teacher to ensure he was asking appropriate questions that would encourage students to use their textbook to find the correct information. Based on Rezwan's requests for guidance and support to overcome short-term challenges, he demonstrates a Mechanical (LoU III) level of use.

\textit{c. Sharing}

During the LoU interview, Rezwan provided numerous examples of his efforts to share his experience and plans using active learning methods. Rezwan said he regularly talks with friends and colleagues who teach at other primary schools in the NGO as well as teachers from Government Primary Schools (GPS). According to Rezwan, he mainly shares standard background information about the active learning approach used at the NGO's schools. He appears to discuss active learning in rather general terms, exchanging descriptive information and ideas about particular subject-related teaching strategies, and examples of group work and assessment processes. According to Rezwan, "...mostly we are comparing teaching methods" (15/03/2010). He mentions that the GPS teachers "...do not acknowledge our methods, but when I compare their methods with ours, I find that our teaching is much better" (15/03/2010). In terms of sharing ideas with colleagues, Rezwan did not offer any examples of collaboration or past discussions addressing potential ways of changing or adapting teaching strategies. Rezwan's effort to share information involves little reference to ways of changing his practice, which demonstrates a Level IV A or Routine use of active learning.
d. **Assessing**

When asked to assess his use of active learning, Rezwan was quick to provide numerous examples describing how students were learning concepts quickly and easily. He mentions, "Those students who are following [my lessons] are doing very well and the weakest students are constantly being benefited and have an actual shot of improving" (15/03/2010). In addition to academic accomplishments, Rezwan talks about how students are learning about proper etiquette at school. Students are showing more respect to their elders and "outside the school premises [students] are saying Salaam to everyone" (15/03/2010).

Although reluctant, Rezwan eventually spoke of his efforts to informally evaluate his teaching practice. He expressed concern about his ability to properly deliver his lessons to the best of his ability and the sense of satisfaction that comes when his students "are in fact learning something" during class (15/03/2010). Rezwan's concerns (in this case consequence or impact oriented) often anticipate or proceed a teacher's actual skill in implementing the practices. In this case, Rezwan appears to express Consequence concerns yet still remain at a Mechanical and/or Routine LoU. Rezwan also talked about the importance of refining his lessons when students are struggling to fully understand the topic or activity. If students don't understand a lesson, "I take the initiative to gather all those students together and try to help them in other ways" (15/03/2010). Although Rezwan has not received any direct feedback about his teaching practice from his students, indirectly he has managed to infer from their questions and requests for help when it is necessary for him to adapt specific teaching strategies to improve student learning.

Using the LoU guidelines (Hall, Dirksen, & George, 2006), Rezwan seems to be at a Mechanical (LoU III) level when it comes to assessing his use of active learning strategies. He examines his teaching methods and provides numerous examples whereby he acknowledges the general reaction of his students and attempts to make minor changes to his lessons as a result.

e. **Planning**

In terms of planning how to incorporate active learning strategies into his daily lessons, most of Rezwan's efforts seem typical of someone at a Mechanical (LoU III) level of use. Although less frequent, Rezwan discusses looking ahead to the next academic year and making some adjustments in his teaching priorities. This illustrates a transition to a more Routine (LoU IV A) level of planning on Rezwan's part. For example, he is concerned about the recent poor performance of his grade five students' end-of-primary school leaving exam and mentions that he
intends to ensure his next batch of grade five students achieves much better results. "We are going to start working on it from the very beginning [of the academic year] and try to apply all those methods from active learning to ensure that they do much better" (15/03/2010). Despite identifying a specific long range plan; Rezwan does not clearly demonstrate a desire to make any major changes in his pedagogical approach. He states, "We hope that they will be able to accept all the things taught and apply them" (15/03/2010). In essence, the planning appears to be more focused on scheduling, time management issues, and implementing the NGO's lesson plans with fidelity rather than any meaningful change in his pedagogical approach.

f. Status reporting

Rezwan describes himself as a competent user of active learning methods. According to Rezwan, "I am fully capable of using active learning methods and making sure I get positive results with regard to how my students perform" (15/03/2010). When Rezwan describes his teaching practice there is an indication of continual improvement. He explains how earlier in his career when he tried to teach reading, there was a great deal of shouting out by himself and his students. He recognizes that such an approach was not working and now Rezwan states that he encourages his students to read along with him in a much calmer and slower pace that "seems to be working better" (15/03/2010). With a commitment to ensuring his students are learning and a willingness on his part to adapt his teaching practice along the way, Rezwan talks about the important supporting role played by the other teachers at his school. According to Rezwan, "when I have evaluated the situation and decided on doing something which I am not fully confident about doing, I go to [head teacher] and she tells me what she thinks would be the outcome of my decision" (15/03/2010). The guidance provided by colleagues appears to facilitate Rezwan's testing of new ideas in a supportive environment that encourages and values his efforts to continually improve his lessons. The majority of examples related to status reporting provided by Rezwan demonstrate a predominant focus on his personal efforts to use active learning methods. This illustrates a Level IV A (Routine Use) whereby Rezwan is mainly concerned with short-term challenges faced in the classroom and any changes that are adopted are made more to fulfill his own desire to be a better teacher through the effective use of active learning methods as expected in the school.
Performing

In his attempts to describe his classroom performance, Rezwan points out the daily challenges he faces, particularly because of inconsistent student attendance. Efforts to plan ahead and anticipate what he can or cannot accomplish each day are difficult. Describing a typical day of school, Rezwan states, "It's all situational. It depends on how many students attend class. Not all twenty students have come to class today. When only ten or twelve students come that is when I decide that it isn't necessary to divide the class into groups" (15/03/2010). It appears that Rezwan mainly makes modifications to his lessons as a result of logistical and organizational factors. Focusing most of his teaching efforts on the day-to-day teaching challenges of coping with varying class sizes indicates that Rezwan is largely performing at a Mechanical (LoU III) level when using active learning methods.

Table 6.4 Assignment of LoU rating - Rezwan

<table>
<thead>
<tr>
<th>Level</th>
<th>Knowledge</th>
<th>Acquiring Information</th>
<th>Sharing</th>
<th>Assessing</th>
<th>Planning</th>
<th>Status Reporting</th>
<th>Performing</th>
<th>LoU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonuse (Level 0)</td>
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<tr>
<td>Orientation (Level I)</td>
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<td></td>
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<tr>
<td>Preparation (Level II)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical (Level III)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Routine (Level IV A)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
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<tr>
<td>Refinement (Level IV B)</td>
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<tr>
<td>Integration (Level V)</td>
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<tr>
<td>Renewal (Level VI)</td>
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</tbody>
</table>

Comparative commentary

Based on the set of seven categories that compose each LoU, a comparative analysis is provided of the five teachers similarly rated at the Mechanical and Routine LoU. The five teachers' ratings for each of the seven categories can be seen in Table 6.6. In addition to the comparative analysis, a short description of the teachers' school environment is provided.
Table 6.5  Teachers' school environments

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Accessibility to school</th>
<th># of teachers at school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afzal</td>
<td>School is located next to a paved road and is accessible to students and staff throughout the year.</td>
<td>3</td>
</tr>
<tr>
<td>Fariha</td>
<td>School is located near a dirt road. During the monsoon season access to the school by road is difficult due to mud and water.</td>
<td>3</td>
</tr>
<tr>
<td>Ritu</td>
<td>School is approximately a 5 minute walk from nearest paved road. The trail to school can be very muddy during the monsoon season.</td>
<td>3</td>
</tr>
<tr>
<td>Tahsin</td>
<td>School is very remote. Approximately 30 minute walk to reach nearest paved road. During monsoon season the school is difficult to reach due to flooding and muddy trails. Staff and students forced to use bamboo bridges and wade through water/mud to reach school.</td>
<td>3</td>
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</tbody>
</table>

Table 6.6  Teachers at LoU III/IV A

a. Knowledge

Among the five teachers, four were rated at a Mechanical (LoU III) level of use while Fariha was given a rating at the Refinement (LoU IV B) level of use in terms of their knowledge of the innovation. In describing active learning methods, all five teachers associated the use of supplementary materials as an important aspect of their teaching repertoire. According to Afzal, "If I teach using practical materials with hands-on learning...the children can have a clear understanding...and they can catch it easily" (09/03/2010). On the other hand, Tahsin pointed out...
how an over reliance on supplementary materials may take away from the teacher's instructional time (07/06/2010). It seems that time constraints and external pressures to complete the syllabus force teachers to press ahead with the prescribed lesson plans resulting in lower-achieving students struggling to keep up with their lessons.

Favourable attributes associated with the active learning approach include helping both low- and high-achievers learn, and encouraging students to "learn with joy". Fariha pointed out that the NGO's active learning methodology is appropriately designed for first generation learners because it provides complete academic support to children while they are attending school and does not rely on additional support outside of school. "We have some students who are the first to receive any education in their family. The active learning method allows them to learn so they don't need to go seeking help at home where there isn't any offered" (13/03/2010).

All the teachers seem to appreciate the value of the active learning approach and focus much of their efforts on short-term, day-to-day teaching requirements. Only Fariha demonstrated an increased awareness and concern about the cognitive and affective impact of using active learning methods with her students.

**b. Acquiring information**

At a Mechanical (LoU III) level of use, Rezwan, Tahsin and Fariha's requests for guidance and support seem to be based on short-term challenges and day-to-day use of active learning strategies. They describe a reliance on colleagues and their supervisor to resolve problems related to lesson planning, scheduling, student assessment, and logistical concerns. Both Fariha and Tahsin mentioned talking with family members and friends who teach in nearby preschools (private schools). According to Fariha, there are significant social and economic differences between her students and those attending the private schools. She argues that the challenges of teaching at her school compared to the private schools are much greater as her students do not have the financial means to sit at home with a private tutor after school. "Our students hardly can afford to light up lanterns in the dark in which case we have to complete all teaching in the classroom" (13/03/2010). Fariha comments that she does not agree with the style of teaching in the private schools believing it to be inferior to the pedagogic model used at her school.

Ritu's efforts to seek out new information about active learning methods seem to be on a "need to" basis; that is, help and advice are sought only when there is a problem in class or an
uncertainty about lesson plan delivery. She does not regularly seek out new information or ideas that could support or enhance her teaching ability. Based on the LoU Chart, Ritu exhibits a Routine (LoU IV A) level of effort when it comes to acquiring information to improve her teaching.

Unlike the other teachers in this grouping, Afzal's commitment to finding new ideas for the purpose of changing his teaching strategy illustrates a Refinement (LoU IV B) level of use. Key resource people that Afzal relies upon for advice and information include the Head Teacher at his school first and foremost, followed by his supervisor and the Team Leader from the NGO's regional office. Frequently, Afzal seeks new ideas for games to play with his students as well as various practical learning materials. He also mentions asking about alternative teaching strategies to better support his students: "Many times we see that the students do not understand if we use the general method so we seek any alternative way which could include different tactics that are more understandable to students" (09/03/2010). Another important source of information for Afzal is the monthly refresher training courses he is expected to attend. Afzal states, "...we go there to learn, we go there as 'students'. They give us a clear idea about what we are going to teach in the next month. We get a clear idea about every matter from the CTC [Central Training Centre]" (09/03/2010).

c.  **Sharing**

All five teachers mentioned sharing their experiences as classroom teachers with colleagues working with the NGO as well as friends teaching in other nearby schools. Three teachers rated at a Mechanical (LoU III) level of use include Tahtsin, Afzal, and Fariha. Although these teachers make an effort to talk with others, most of the discussion appears to focus on management and logistical issues related to their daily teaching responsibilities. For example, Fariha describes how she works with other teachers at her school to overcome various challenges during the school day. "A lot of times when we face difficult situations we sit together and discuss with each other how to simplify. We come to school half an hour early just so we can go through our lesson plans and make sure we are fully prepared for class" (13/03/2010).

Rezwan and Ritu were rated at a Routine (LoU IV A) level under the category of "sharing", which indicates that despite their willingness to share ideas and experiences in the classroom, they do not appear to critique their notions of what is or is not effective teaching nor
modify their practice. For example, Ritu reveals how she periodically discusses her pedagogical strategies with friends who are teachers in government primary schools.

We often discuss how they are teaching and how we are teaching. Such as we use practice materials, we follow lesson plans and we have instructional books. We took training and follow the training outcome in the classroom (09/06/2010).

Ritu's comment illustrates her openness to sharing information about her teaching and classroom environment with colleagues internally as well as outside of the non-government school system but there is little or no reference alluding to a desire to change her teaching approach.

d. Assessing

All five teachers were rated at a Mechanical (LoU III) level in terms of assessing their use of active learning methods. Each teacher has a positive assessment of the effectiveness of the active learning approach. According to Afzal, "When the teacher implements active learning properly, the children see school as a place of joy and an appropriate environment" (09/03/2010).

When asked about assessing their use of active learning strategies, three of the five teachers express concern about their ability to deliver their lessons properly. Rezwan, Ritu, and Afzal acknowledge and value students' reactions to their lessons and try to find alternative teaching strategies to better support students whenever they are unable to comprehend lesson delivery and explanations from teachers. Ritu states, "I self evaluate", although she seems to limit her assessment to factors that are administratively required (09/06/2010). She is aware of her weaknesses but does not appear to have the freedom to change her lesson plans due to expectations and time limitations built into the required syllabus and teacher's resource guides.

Overall, the five teachers appear to limit assessment of the use of active learning methods to the daily requirements outlined in their lesson plan guides and syllabus. Generally, they seem to reflect on their teaching practice to the limited extent that they examine their use of active learning with respect to the general reactions and learning outcomes of the students.

e. Planning

In terms of the teachers' efforts to plan ahead, there were four teachers in this grouping rated at a Routine (LoU IV A) level, including Rezwan, Fariha, Afzal, and Tahsin. Among these four teachers, Fariha and Rezwan both express a concern about the final exam results from the past academic year and discuss their plans to ensure that the next batch of students achieve better
results. Fariha states, "With my twenty-one grade four students, I plan to make sure that even the weakest do well, especially since we want them to do well in grade five" (13/03/2010).

Among these four teachers, planning predominantly focuses on the regular use of the mandated monthly lesson plans and supplementary materials. They discuss making small adjustments to their teaching priorities depending on specific student needs, but there is little indication that any of the teachers are planning to make significant modifications to their pedagogical approach. According to Afzal, "How we are going to teach is instructed by the office. If they tell us that something should be done in a different way then I must change it" (09/03/2010).

The one teacher whose effort at planning stands out in this group is Ritu. With 16 years of experience teaching with the NGO's primary education program, Ritu seems to have a more Refined (LoU IV B) level of planning. As Ritu looks ahead to the second half of the academic year, she has plans to make significant logistical changes regarding the content that needs to be taught. She has designs on adapting her six month plans anticipating logistical challenges such as the need to skip some lessons in order to focus on other content areas that she views as a "priority". To better prepare her students for the upcoming half-yearly examinations, Ritu states, [r]ight now I am still teaching the subject matter which is supposed to be delivered in January and February. Now, the exam is very near and if the students can't recognize their alphabets and don't have the concept of numbers, it will be bad for them. Besides, we don't have much opportunity to teach all the lessons (09/06/2010).

Ritu's desire to develop an intermediate plan to address logistical problems and to help her students pass the upcoming mid-term exams demonstrates that her students' academic success is a priority. Any plans to modify her lessons and syllabus seem to be determined by the level of student comprehension and preparedness for formal assessments. Overall, Ritu's level of planning seems to be at a state in which she plans ahead and anticipates necessary steps and potential resources to best support her students' academic success.

\textbf{f. Status reporting}

The teachers' views of their overall use of active learning methods were generally positive. There was a somewhat ambiguous pledge by Fariha, Afzal, Rezwan, and Tahsin of continuous improvement and a willingness to be somewhat flexible with their lesson delivery.
Yet, each of these four teachers believed they had reached a stage where their teaching responsibilities and use of active learning methods had become Routine (LoU IV A). For example, when Afzal was asked if he had made any changes to his teaching approach he commented that if it is happening it is natural: "Change is normal...any person in a profession has to bring change in his job" (09/03/2010). Although Fariha seems committed to making small logistical changes to her lessons plans, when asked if she had ever organized students into more than the usual three groups for an activity, she responded "No, because then what's the point of having the active learning method?" (13/03/2010). In Fariha's case, she seems equally determined to stick to the instructions in her teacher resource guidebooks and maintain a pedagogical routine that is very familiar to staff and students.

In Ritu's case, she was rated as a Mechanical (LoU III) user of active learning methods. Ritu simply stated she is not making any changes to her teaching approach besides the required changes that are an expected outcome of regular in-service support. Ritu's focus was solely on her personal efforts to properly use the active learning approach.

g. Performing

Among the five teachers, Rezwan was the only teacher whose rating in the performing category was at the Mechanical (LoU III) level of use. In his case, most of the changes made in his class seemed to be a result of logistical and organizational problems. Additionally, the concerns Rezwan shared about inconsistent student attendance and the subsequent difficulties he faced with lesson delivery illustrated a lack of anticipation for problems that were largely to be expected.

Fariha, Ritu, Afzal, and Tahsin faced similar challenges as Rezwan, although they seemed better able to cope with such adversity and continued to maintain a Routine (LoU IV A) level of use the active learning approach. They also described teaching each subject with little difficulty while acknowledging there were times when minor adjustments and variations in their delivery and use of supplementary materials were common.

Routine Level of Use (LoU IV A)

According to Hall and Hord (2006), at this level, the teacher is a confident user of the innovation and has established a regular way of working with it. At this level, the teacher makes few changes in his or her use of the innovation. My analysis of the LoU interview data revealed
that Wasifa and Anisa, had reached a Routine (LoU IV A) level of use of active learning methods. The full analysis of Wasifa's LoU interview data is provided below as a "vignette" to illustrate the characteristics of a teacher at this level of use of active learning. A short comparative commentary follows in an effort to highlight some of the similarities and differences between Wasifa and Anisa's Routine use of active learning methods.

**Wasifah**  
Wasifah has been a teacher with the NGO's education program for seven years. Her current responsibilities involve teaching grade one during the morning shift and grade four during the afternoon shift at Dohkeen Primary School. Wasifah's highest level of educational attainment is the Higher Secondary School Certificate (HSC). The school where Wasifah works is located in a relatively remote *haor* area that is heavily affected by monsoon flooding. Reaching the school during the monsoon season involves wading through knee-deep water as well as crossing bamboo bridges (see Photo 3.2). Wasifah works with two other teachers at the school. As a current user of active learning methods, Wasifah describes herself as an intermediate user. She believes she is accomplishing what is expected of her from her superiors but recognizes that there is always more to learn and is interested in continuing to improve her teaching practice. Based on the findings from the levels of use interview with Wasifah, her overall level of use was determined to be that of a Routine (LoU IV A) user of active learning methods.

**Levels of Use categories**

**a. Knowledge**  
Although Wasifah confirms that she uses the NGO's active learning method, she also points out that she does not precisely follow the daily lesson plans she is expected to teach. According to Wasifah, "I take in what I have to and present it to the students my way. The active learning method is for me as I see it" (10/03/2010). She highlights a number of strengths of active learning methods and the teacher resource guides that provide guidance and instructions about how to be an 'active learning' teacher. She states, "The good qualities are that we know exactly how to teach the students and it helps ensure that they learn. The fixed guidelines in the active learning method allow us to understand easily, resulting in the students' ability to learn with ease" (10/03/2010). Another advantage provided by Wasifah is that the active learning method helps
her to properly assess her students and then use that information to support them as learners. According to Wasifah, "It helps me help the children improve" (10/03/2010).

Wasifah seems to have a strong appreciation for the active learning method and praises the positive cognitive affect that incorporating supplementary materials into her lessons is having on the students. When asked to explain the benefits of supplementary materials, Wasifah provides the example of using flash cards with words written on them. According to Wasifah, "...using the word cards is very helpful" (10/03/2010). She adds, "Repeatedly reading out the words helps them remember better. Reading out the cards five times and writing down the word three times helps them learn really fast" (10/03/2010). Although Wasifah's use of word cards appears somewhat simplistic and contrasts with Western views and definitions of active learning, from her perspective incorporating supplementary materials into her lesson enhances the complexity and quality of the lesson.

When asked if there are any weaknesses with the active learning method, Wasifah mentions that class time is often wasted because she is required to follow mandated lesson plans yet there are many other more important lessons that need to be given attention. It seems that Wasifah disagrees with a situation in which content delivery is driven by syllabus requirements from her superiors rather than by the academic needs of the students.

Wasifah's knowledge about the active learning method appears strong. She highlights many strengths and weaknesses of her pedagogical approach and proudly explains her efforts to vary her lessons to increase the impact on her students. The variability Wasifah builds into her lessons demonstrates a Refinement (Level IV B) of her use of active learning.

b. Acquiring knowledge

The actions taken by Wasifah to seek additional information about active learning involve attending follow-up training and asking her supervisor and local area manager for advice and guidance. Wasifah also mentions that she talks with friends and colleagues about their teaching practice. In particular, she looks for ideas from teachers working at government primary schools as well as a large non-governmental organization that operates non-formal primary schools in the area for alternative approaches to teaching certain topics. Based on the variety of ways in which Wasifah tries to acquire new information about active learning, her efforts typify a Mechanical (LoU III) user of active learning methods. If and when Wasifah solicits information, it is
generally focused on such things as logistics, scheduling techniques, and ideas to most efficiently use the limited instructional time available each school day.

c. Sharing

Wasifah indicates that she talks about teaching practices with other primary school teachers working at government and non-government schools in the vicinity. She also acknowledges frequently talking with her colleagues as well as her supervisor about student assessment and problems she encounters when trying to use the teaching materials properly.

We talk during tiffin (lunch) time. We talk about things that are good and bad with the active learning method. We talk about things that we think aren't good and are time consuming and we talk about things that would be good if added to the syllabus (10/03/2010).

Most of the support from trainers and Wasifah's supervisor seems to come in the form of advising her about what she is doing correctly or incorrectly. Changes in her teaching practice appear to be determined on a needs-based approach. Following informal discussions with her colleagues, Wasifah's attempt to modify her lessons to better support her students exemplifies a Routine (LoU IV A) level of use.

d. Assessing

When asked about the effects of using the active learning method, Wasifah first pointed out the benefits of dividing her students into one of three "ability" groups. "I see that dividing students into groups allows me to give individual attention which then helps me spot the weak ones so I can give them more attention" (10/03/2010). In another example of the apparent strength of the active learning approach, Wasifah drew a comparison between her students and those attending a government primary school. She states that students from the NGO's schools are more knowledgeable and confident than the same grade of student from a government school. According to the teacher, "Our students in grade two can form sentences in English that government school students can't do in grade five. I assure you one hundred percent" (10/03/2010).

According to Wasifah, one of the weaknesses of the active learning approach is that there is often insufficient class time to properly implement activity-based lessons in her classroom.
"The active learning method is very time consuming" (10/03/2010). She also points out that a disconnect exists between what she is required to cover in the syllabus within a specified period of time and the extra support and practice students actually need to be successful learners. It seems that a fast pace must be maintained irrespective of the learning outcomes of the students.

Based on the examples Wasifah provided of how she assesses her use of active learning, she seems to be at a Routine (LoU IV A) level of use. Although, many of her comments deal with logistical challenges, syllabus expectations, and time constraints, she generally views herself as a competent user of active learning methods and acknowledges the general reactions of her students.

e. Planning

Wasifah's plans are largely focused on the immediate needs of her students but she also mentions the need to properly prepare them for the annual exams, which take place six months from the time of the interview. It seems that Wasifah's aim is on making minor adaptations in how she supports individual students in class rather than attempting any major changes to her teaching approach. This approach to planning is indicative of a Routine (LoU IV A) level of use. According to Hall, Dirksen, and George (2006) someone working at a Routine level of planning is implementing an innovation with little variation in how it will be used.

f. Status reporting

Wasifah continually refers to the importance of faithfully following the prescribed lesson plans for each subject. In that sense she demonstrates routine use of the active learning methodology. Yet, there appear to be instances when Wasifah exercises her autonomy as a teacher. For example, when teaching her grade one class she states, "I aim to help teach them a little more than is allocated so that they are that much more ahead for the next class" (10/03/2010). The teacher seems to modify her approach to meet individual student needs during certain lessons. It does not appear that Wasifah is making any fundamental adaptations to the active learning methodology. Rather, she appears to demonstrate a higher than usual degree of responsiveness to student needs. Wasifah's descriptions of varying her teaching strategies in order to try and improve student learning illustrates a Refinement (LoU IV B) of her use of active learning.
g. **Performing**

Throughout the interview, Wasifah gives examples of how she experiments with different ways of teaching her students. She talks about the benefits of incorporating supplementary materials as well as involving her students in the delivery of the lesson as much as possible. During the LoU interview, Wasifah is asked how she tries to accommodate the diverse needs of her students when some do not understand a particular question from the textbook. She states, "I break the question into small parts and present it to [the students] in an easier fashion. I also bring them up to the blackboard and use props...to help them understand" (10/03/2010). Wasifah seems to demonstrate a willingness to make minor changes to the way she delivers her lessons, but the majority of time she seems to acknowledge the importance of following the required lesson plans provided by the NGO's curriculum unit. The commitment to following the prescribed lesson plans with limited changes most closely matches that of a Routine (LoU IV A) user of active learning methods.

**Table 6.7 Assignment of LoU rating - Wasifah**

<table>
<thead>
<tr>
<th>Level</th>
<th>Knowledge</th>
<th>Acquiring Information</th>
<th>Sharing</th>
<th>Assessing</th>
<th>Planning</th>
<th>Status Reporting</th>
<th>Performing</th>
<th>LoU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonuse (Level 0)</td>
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<td>Orientation (Level I)</td>
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<td>Preparation (Level II)</td>
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<tr>
<td>Mechanical (Level III)</td>
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<td>✓</td>
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<tr>
<td>Routine (Level IV A)</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<td>Refinement (Level IV B)</td>
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<td>Integration (Level V)</td>
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<td>Renewal (Level VI)</td>
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</table>
**Comparative commentary**

Besides both Wasifah and Anisa being rated as Routine (LoU IV A) level users of active learning methods, there are a number of other similarities worth mentioning. Both women have earned their Higher Secondary School Certificates and both have been teaching with the NGO's primary education program for the past seven years. One key difference between the two teachers is the accessibility of the schools where they work. Although the land surrounding Wasifah's school typically floods during the monsoon season, the distance from a paved road is relatively short. Anisa's school can only be reached by a footpath and is about a 10 minute walk from the nearest paved road. During the monsoon season, the trail to the school becomes very wet and muddy. Teachers and students are forced to wade carefully through mud that can easily reach past students' knees (see Photo 9.2). Based on the seven categories that comprise each LoU, a comparative analysis is given for the two teachers. The following bar graph (see Table 6.7) provides a breakdown of the teacher's ratings for each of the seven categories.

**Table 6.8  Teachers at LoU IV A**

![Bar graph showing the comparison between Anisa and Wasifah's ratings for each category.]

**a. Knowledge**

Anisa's knowledge of active learning methods is rated as Routine (LoU IV A), which is one level lower than Wasifah who is at the Refinement LoU. Anisa points out that the active learning approach enables her to provide more individualized support to students. She also comments that her students seem more confident in class and do not hesitate to ask questions.
during their lessons. What seems to differentiate these two teachers is Wasifah's greater appreciation and willingness to build some variation into her lessons and her understanding of the cognitive effects that using supplementary materials can have on her students.

**b. Acquiring information**

When asked if she is looking for any new information regarding active learning, Anisa mentioned that when she is having trouble with the delivery of certain lessons she asks the other teachers at her school for advice. She also talked about learning new ideas when attending in-service training each month. Generally, it appears that Anisa makes no special effort to seek out additional information or ideas about active learning besides the regular workshops that are provided by the NGO. Based on the LoU Chart, Anisa's effort to acquire new information about active learning is Routine (LoU IV A). Although Wasifah also discussed similar ways of acquiring information and ideas, her efforts seemed much more focused on acquiring management information about lesson plan preparation, scheduling, and time constraints, rather than on the delivery of her lessons.

**c. Sharing**

Both Wasifah and Anisa's efforts at sharing are rated at a Routine (LoU IV A) level of use. In terms of sharing ideas, problems, and plans about using active learning approaches, both teachers mention talking with family and friends who teach in government primary schools and other local preschools (private elementary schools). In Anisa's case, it seems that most of the conversations focus on logistical and management issues pertaining to class routines and class management. According to Anisa, "I have a friend I mostly try to help her. I meet her at most of the follow-up [training] and I discuss how she is going to control the class or follow the routine" (06/06/2010). Most of the sharing of ideas described by Anisa takes place with her providing advice and information with little or no reference to ways that she could change her use of active learning methods. In Wasifah's situation, it appears that she is usually the recipient of advice and information. Most of the information provided is coming from her superiors in the form of advice about what she is doing correctly or incorrectly.

**d. Assessing**

Anisa's interview comments related to assessing her use of active learning were limited and her overall efforts at assessing her practice appear somewhat Mechanical (LoU III). She
mainly examines her use of active learning with respect to her use of supplementary materials and the impact of these materials on student attentiveness. Wasifah, efforts to assess her practice were rated as Routine (LoU IV A) because she provided a richer discussion of assessment issues including; the benefits of ability groups, comparing her students with those studying in government primary schools, and arguing that there is often insufficient class time to properly teach all required lessons.

e. Planning

The aim of both teachers is to properly prepare their students for the annual exams. To accomplish this task, the teachers are willing to make minor adjustments to their teaching approach so they can support individual student needs. Based on Wasifah and Anisa's comments, little projected variation exists in how their lessons will be taught. The majority of their planning focuses on Routine (LoU IV A) or expected use of active learning methods and resources.

f. Status reporting

In general, Anisa seemed to have a positive view about her proficiency using active learning methods. Anisa expressed a concern only once during her interview about spending an excessive amount of time fulfilling student assessment requirements. Unlike Anisa's Routine (LoU IV A) rating, Wasifah's comments during the LoU interview indicate she takes a little more freedom in deciding what she teaches; she often varies or Refines (LoU IV B) her use of active learning strategies to support individual student needs.

g. Performing

Both teachers were rated at a Routine (LoU IV A) level of use with regards to their teaching performance in the classroom. According to each teacher's interview, it appears that Wasifah and Anisa are both using active learning approaches smoothly with few management or logistical problems. Agreement exist between both teachers of the importance of following the prescribed lesson plan guidelines but also being flexible enough to adapt their teaching to best support individual student needs.

Routine and Refinement Level of Use (LoU IV A & IV B)

The analysis of the LoU interview (Hall, Dirksen & George, 2006) data reveals that two teachers in the study, Hana and Bushra, are at a combined Routine (LoU IV A) and Refinement
(LoU IV B) level of use of active learning methods (See Table 6.9). These are the highest LoU ratings given to teachers signifying these two teachers' conscious efforts to make some changes in their use of the NGO's active learning approach. Teachers at a Refinement level of use are working on refining the lesson plans, syllabus, and their teaching strategies based on formal or informal evaluations of their teaching practice in order to improve student learning outcomes (Hall, Dirksen, & George, 2006). To illustrate the characteristics of a teacher at this combined LoU of active learning, a complete analysis of Hana's interview is included. Following Hana's "vignette", a short comparative summary is presented highlighting the similarities and differences between Hana and Bushra according to the seven categories included in Hall, Dirksen, and George's (2006) LoU chart (see Appendix 12).

**Hana**

Hana is one of the more experienced teachers, having been a teacher with the NGO's primary education program for the past eight years. At the time of the study, Hana was teaching grade two in the morning shift and grade three during the second shift in the afternoon at Prothama Primary School. Hana's school has two other teachers and the school is easily accessible by a paved road located near the school's boundary wall. Her highest level of educational attainment is the Higher Secondary School Certificate (grade 12). Hana was invited to participate in the second phase of the study as a result of comments she provided on the open-ended statement of concerns from phase one of the study. Particular concerns about using the active learning method provided by Hana included the need to continually update the supplementary materials used in class and the importance of using examples in her lessons that students are able to relate to easily.

**Levels of Use categories**

*a. Knowledge*

Hana seems to have a favourable impression of the active learning method. According to Hana, the best part of the active learning approach is that it fosters a learning environment where children feel safe taking chances and asking questions. "To me the best part is that the children are learning with joy. They feel delighted as there is not always the pressure to study" (08/06/2010). Hana emphasizes the importance of creating a safe and friendly learning
environment for her students. She believes that when her students are more comfortable and willing to share their problems it helps her to teach more effectively.

Hana points out that unlike government schools or private schools, the NGO's education program has a mandate to provide all necessary academic support to students while they are attending class. Hana points out, "It's not like the government school where they are only giving lessons and then telling [students] to learn at home" (08/06/2010). Hana explains that her students do not have anyone at home to help, as most parents have never attended school and are illiterate. As well, most parents lack the financial means to pay for a private tutor for the children. Therefore, the responsibility falls on the teachers to provide complete academic support to the students during the school day. When describing her students, Hana states, "they are very poor so we have to support them in class... we make the student understand the whole lesson in the class...so they don't have to rely on any support at home" (08/06/2010).

Overall, Hana demonstrates a broad knowledge of the benefits of active learning methods. She has an appreciation of the cognitive and affective impact of her teaching approach and ways to ensure a positive learning experience for her students. Using the LoU Chart (Hall, Dirksen, and George, 2006), Hana's knowledge of active learning methods is at the Refinement (LoU IV B) level of use.

b. Acquiring information and sharing

Hana states that she only seeks advice or help from others when she is unable to solve a problem on her own. She says that there is very little free time during the school day to chat with colleagues about teaching issues. Hana mentions that she asks for advice from her supervisor as well as trainers when she attends regular in-service training. Although infrequent, Hana solicits advice and shares ideas. The majority of the time she appears to make little effort to seek out new information or share her experiences as a teacher with her colleagues. Hana's is at a Routine (LoU IV A) level of use; she seems to have little need to acquire new information or share her knowledge and experience about the active learning method.

c. Assessing
Hana's efforts to explore her use of active learning for the purpose of determining the strengths or weaknesses of this pedagogical approach are largely focused on the impact of her teaching on the students. She mentions that a worthwhile component of the active learning method is the commitment to provide individualized support for high- and low-achieving students during the school day. Utilizing group work strategies, Hana explains how she divides her students into groups according to their ability level. According to Hana, this organizational seating strategy makes it easier to teach and support students with their class work. Another strength of active learning according to Hana is that it supports a more well-rounded learning experience for students. She states, "I think [students] learn better...After teaching, they develop in every aspect, not only limited to study but in games, song, rhymes, or poems" (08/06/2010). Although Hana is clearly concerned about the impact of her teaching on her students, which is indicative of a Mechanical (LoU III) level of use, she does not appear to make any attempt to change her overall approach to teaching. Hana's limited effort to pay attention to findings for the purpose of changing her teaching practice is typical of a Routine (LoU IV A) user of active learning.

d. Planning

While addressing issues related to instructional planning, Hana spoke a great deal about the important role of the teacher resource guides in determining what to teach each day and how to go about teaching each lesson. According to Hana, "...if I come [to class] without the teacher's guide I would get confused [about] what I have to teach and how to teach" (08/06/2010). Aside from the daily lesson plans that are provided by the NGO, Hana mentions that a newly developed syllabus and the half-yearly exams provide additional structure and schedules that help guide her efforts to devise intermediate and long-range plans. The focus of most of the planning undertaken by Hana seems to address intermediate actions with little projected variation in how she actually uses the active learning method. With respect to her overall planning, her efforts seem to focus more on Routine (LoU IV A) use of supplementary materials and teacher resources rather than her willingness to modify her existing pedagogical approach.

e. Status reporting
Hana seems to make some small modifications to her lessons despite being provided with teacher resource guides for each subject with specific instructions that are to be followed by all teachers. According to Hana, "I do some changes that children can understand. If somebody comes then I can't do but if there is nobody then I can [teach my way]" (08/06/2010). Hana states that she will make changes if and when her students are struggling to understand. She also explains how she gradually took liberties with her lessons as she gained experience teaching. "At the beginning, I had to follow the guide, but after that I found that only the guide was not enough and I started to give something from myself. The task is the same but I try to deliver [the lesson] my own way" (08/06/2010). It appears that Hana is very committed to her students' learning based on her effort and apparent willingness to Refine (LoU IV B) her lessons and use of active learning methods.

**f. Performing**

Hana describes how she will periodically disregard the guiding questions from the textbooks or teacher resource guides, preferring to develop her own questions based on assessments and input from her students. She also encourages her students to come up with their own ideas for questions and answers. It seems that Hana periodically explores and experiments with alternative lesson plan combinations in an effort to Refine (LoU IV B) her use of active learning strategies. She also adapts the teacher resource guidelines in an effort to maximize student involvement and learning. Interestingly, much of Hana's disregard for the prescribed lessons plans and increased effort to individualize her teaching occurs only with the upper grades.

**Table 6.9 Assignment of LoU Rating - Hana**

<table>
<thead>
<tr>
<th>Level</th>
<th>Knowledge</th>
<th>Acquiring Information</th>
<th>Sharing</th>
<th>Assessing</th>
<th>Planning</th>
<th>Status Reporting</th>
<th>Performing</th>
<th>LoU</th>
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<tr>
<td>Nonuse (Level 0)</td>
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Comparative commentary

At a combined Routine (LoU IV A) and Refinement (LoU IV B) level of use, Hana and Bushra's ratings are the highest among the ten teachers that participated in the LoU interviews. When reviewing each teacher's professional background, it was noted that each teacher graduated from high school and received the Higher Secondary Certificate accreditation. Additionally, both teachers have been working for the NGO for long periods of time - Bushra has taught for seven years and Hana has taught for eight years. Accessibility to Bushra's school is somewhat more difficult than Hana's. Reaching Bushra at Brishti Primary school requires a short walk on a dirt path from the nearest paved road. During the LoU interview, each teacher was asked to rate her teaching competency and both teachers described themselves as "experts" at using active learning strategies. Hana based her self-assessment mostly on the positive relationships she has with her students. According to Hana, "I think I am able to reach [my students]...they seek my support and want to learn from me" (08/06/2010). Bushra also spoke confidently about her strengths as a teacher and mentioned, "there is not much problem right now. I am comfortable with a lot of the active learning pedagogy" (07/03/2010). Based on the seven categories that comprise each LoU, a comparative analysis is given for the two teachers. Table 6.9 provides a bar graph of the Bushra and Hana's ratings for each of the seven categories.
Table 6.10  Teachers at LoU IV A / IV B

![Teacher Performance Chart]

- **a. Knowledge**
  A major difference noted between the teachers' knowledge of active learning was Hana's recognition of the cognitive and affective impact of using active learning approaches, while Bushra's focus was more on logistical requirements and the importance of following the day-to-day instructions in the teacher's resource guides. According to Bushra, "In the teacher's guide there are instructions specifically about the first day, second day, and third day - it is fixed. There is no freedom to teach on your own" (07/03/2010). While Bushra appears to have a Routine (LoU IV A) knowledge of both short- and long-term teaching requirements, Hana's focus and concern appears to have shifted more to finding innovative ways to better support student learning and enjoyment while at school.

- **b. Acquiring information**
  Hana's effort to seek out new ideas and information about active learning methods was limited to specific times when she was facing a problem. According to the interview data, Hana did not make any extra effort to collect new information about active learning methods.

  Bushra's efforts to learn more about teaching methods went beyond simply talking with her supervisor or trainers. On occasion, she spent time at her daughter's private (preschool) school observing the teachers and trying to learn new techniques to support lower achieving students. Overall, Bushra seems to be trying to Refine (LoU IV B) her teaching approach by
actively collecting new ideas from teachers and trainers inside and outside of the NGO's primary education program.

c. **Sharing**

During the interview with Hana, she talked about her approach to teaching and mentioned infrequently sharing ideas or her experiences as a teacher with her colleagues. On the other hand, Bushra stated she often discusses her teaching problems with colleagues. For example, Bushra described how she regularly sits with her colleagues at school to discuss matters related to the teacher resource guides. According to Bushra, "There are many matters in the teacher's resource guide that we don't understand. At that time, all three teachers sit together and discuss the matter among ourselves" (07/03/2010). Bushra's effort to share concerns and problems with colleagues indicates a Routine (LoU IV A) level of coordination and collaboration.

d. **Assessing**

Both teachers were rated at a Routine (LoU IV A) level when it comes to assessing their teaching practice. During Hana's interview, she focused on various strengths of the active learning approach including the benefits of group work and a commitment to differentiated support for lower- and higher-achieving students. Overall, Hana's evaluation of her use of active learning was limited.

On the other hand, the strengths of active learning identified by Bushra focused more on issues to do with the contextual appropriateness of the pedagogy. According to Bushra, "In this village area there is no awareness of the value of school among the parents. If we didn't teach this way there wouldn't be much effect on the students" (07/03/2010). Without active learning classes, it is unlikely that these students would be able to succeed at school. Bushra states that without active learning, "They couldn't survive anywhere else" (07/03/2010). Reflection is another way that Bushra assesses her own practice. "Many times it happens that after my teaching there is no positive changes, at that time I question myself as to why it didn't work" (07/03/2010). Bushra's efforts to assess her teaching practice seem to focus on those activities that are administratively required such as properly following instructions in the teacher's resource guide. Overall, Bushra's efforts at assessing her teaching practice are typical of a Routine (LoU IV A) user of active learning methods within the context of teaching at this NGO.
e. **Planning**

Hana and Bushra's efforts at planning are largely focused on making the necessary adjustments to their lessons so they can complete the syllabus in time for the half-yearly or final exams. Both teachers appear to be involved in Routine (LoU IV A) planning that is focused on supporting their students' efforts to achieve positive academic results. There is little indication from the interview data that Hana or Bushra are considering making any major changes to their teaching approaches.

f. **Status reporting and performing**

Hana and Bushra are both very competent and confident users of active learning methods and they each have over 7 years of experience with the NGO. Despite the many years of teaching experience, they both comment that they struggle at times with the rigidity of having to always follow the lesson plans and teacher resource guide instructions provided by the NGO. Both teachers talked about trying to Refine (LoU IV B) their teaching practice by varying their use of active learning methods in order to maximize student performance. According to Bushra, "Basically, we are bound to follow some instructions. It is very difficult to do anything outside this, but still we try to do something different to support the children" (07/03/2010). Hana and Bushra also seem willing to periodically disregard instructions from the teacher's resource guides in favour of developing lessons based on information collected from regular student assessments.

**Extremes in LoU ratings**

**Most inconsistent LoU was acquiring information.**

Among the 10 teachers in the study, the category with the greatest variation of LoU ratings was "acquiring information". There were five teachers at a Mechanical (LoU III) level of use, three teachers at a Routine (LoU IV A) level, and two teachers at the Refinement (LoU IV B) level of use. There may be a number of reasons for the variations of LoU ratings. For example, the effort of teachers at the Mechanical LoU to solicit information about active learning was focused mainly on logistical and scheduling concerns. Many of these teachers relied heavily on the monthly refresher training as well as the support and guidance provided by head teachers and supervisors to overcome daily problems. Tahsin commented that he wants more information but is unable to find any new ideas on his own. As a result, these teachers would often seek advice and ideas from friends who were teaching in government primary schools.
The three teachers (Ritu, Anisa, and Hana) at the Routine LoU all stated that they made limited efforts to seek out new information or share their teaching experiences with colleagues. These teachers appear to look for new information only when they are having problems, which is infrequent. This is indicative of many teachers believing they are currently competent users of active learning methods, so there is little need or desire to acquire any additional information beyond what is provided during monthly refresher training. Another explanation may be a lack of incentive on part of teacher's to collect new information since they are provided with teacher resource guides from the NGO with detailed instructions for daily lesson plans.

Other possible reasons that these teachers appear to make no special effort to seek information as part of their ongoing use of active learning methods may be due to teacher isolation, a lack of pedagogical resources related to active learning methods, and a shortage of time, especially for female teachers who have often have household responsibilities before and after school hours.

**Lowest average LoU**

The assessing category had the lowest average rating with six teachers (Rezwan, Afzal, Fariha, Ritu, Tahsin, and Anisa) scoring a Mechanical (LoU III) level of use. According to Hall, Dirksen, and George (2006), someone at a Mechanical LoU generally assesses his or her use of the innovation with a focus on logistics, time constraints, proper use of supplementary materials, and general student feedback. When teachers were asked to describe the strengths of active learning and the efforts of the innovation, they were quick to point out the positive impact on student learning.

While most of the teachers are largely preoccupied with evaluating their ability to cover the lessons provided in the teacher resource guides within the allotted time, they do not appear to engage very deeply in assessing or reflecting on their use of various active learning strategies. Generally, the teachers judge their ability to manage the delivery of their lessons favourably. This lack of critical self-reflection on their teaching practice could be a product of the NGO's decision to provide comprehensive lesson plans and timelines that teachers are expected to adhere to each day. This top-down approach of administering complete lesson plan units to teachers appears to runs the risk of fostering an environment where teachers feel they have limited freedom to teach what they want or what they feel is necessary to meet the needs of their students. Under these circumstances, teachers may not feel sufficiently empowered to adapt their lessons to address
individual student needs, which has the concomitant effect of creating an environment where teachers only feel accountable to cover the lessons each day as mandated in the teacher resource guides rather than making the extra effort to support each student's individual academic and developmental needs.

**Highest average LoUs**

Most teachers confirmed that planning is important but it is generally seen as a responsibility of the NGO's curriculum developers who prepare monthly lesson plans and a yearly syllabus for each grade and each subject area. The expectation is that teachers will closely follow these plans and instructional supports with little variation in the delivery or timing of each lesson. Teachers are generally not encouraged or empowered to adapt their lessons or engage in long term planning on their own. With the increasing importance given to examination results, recent planning changes have been adopted to better prepare students for half-yearly and annual exams. Instances where teachers have made some short-term planning changes have largely been a result of time constraints and the wide variation in student competencies, which makes it difficult to cover the required content on time. There is little evidence that planning is focused on teachers' use of active learning methods or their intention to vary their teaching approach. This attitude is indicative of a Routine (LoU IV A) level of planning whereby there is little interest or apparent incentive to change their teaching strategies or use of the available pedagogical materials.

Focusing on teachers' views of their overall use of active learning, an equally high level of use was noted among the teachers. A key difference between the teachers' status reports and efforts at planning was a slight increase in the number of teachers who reported trying to refine their use of active learning in order to improve student learning outcomes. Although half of the teachers seemed satisfied and confident about their teaching performance, 30% of the teachers in the study indicated a commitment to continuous improvement and a willingness to incorporate their own ideas, explore, and experiment with slight modifications to their lessons. It is apparent that some teachers are trying to use a variety of active learning strategies to teach students but it is not clear whether teachers are replacing active learning methods with other more behaviouristic or traditional teaching approaches on their own or if changes are a result of regular training and workshop support.
During the LoU interviews, there was limited discussion among teachers about a desire to change their current teaching practice. There are many possible reasons why teachers are reporting that personal use of active learning methods is going along satisfactorily. One reason may be that teachers are not openly encouraged to teach in a 'different way'. Secondly, teachers have extremely limited personal practical experience using active learning methods. As well, teachers have had limited opportunities and exposure to alternative child-centred examples of teaching. This is clear when you look at the levels of use for acquiring information by teachers. A third possible explanation as to why so many teachers viewed their overall use of active learning as going along satisfactorily with few if any problems may be a result of the positive feedback and support these teachers regularly receive from head teachers, supervisors, and program officers. Another explanation could be a result of the generally strong exam results being achieved by students. When so many students are doing well academically, it is likely that teachers are going to be less concerned and less willing to make any modifications to their teaching approach. A fifth reason for the complacency of these teachers may be due to an apparent disconnect between parents' expectations and the schools' responsibility for education provision. Generally, parents remain silent and few come to the school to talk with teachers about their children's performance. It appears that the parents have little agency and struggle to hold teachers accountable to ensure they are doing the best possible job teaching their children.

**Absence of behaviours of users and non-users in the change process**

Similar to the Stages of Concern, the CBAM LoU framework focuses on a general pattern of teacher behaviour as they prepare to use, begin to use, and gain experience and confidence implementing a classroom innovation. According to guiding principles of the LoU framework, the levels of use are presented in a logical sequence, but this is not always followed by everyone (Hall & Hord, 2006). In the case of the participants in my study, findings from the LoU interviews indicate that regardless of years of teaching experience, none of the teachers were classified as "nonusers" of active learning methods. Therefore, among the teachers in the study, there is no need to consider the behavioural distinctions between LoU 0 - Nonuse, LoU 1 - Orientation, and LoU 2 - Preparation. Given that my participants are teachers within the NGO's primary education program implies that they are also "users", to some degree, of active learning methods. This distinction is based on the fact that the NGO concurrently refers to the primary
schools as "active learning" schools; an acknowledgment that an active learning philosophy and pedagogical approach characterizes all facets of the schools' instructional approach.

There was also a relative absence of evidence among the participants of LoU 5 - Integration. According to the developers of CBAM, the LoU 5 - Integration person makes adaptations for the benefit of students, in concert with one or more teachers (Hall & Hord, 2006). Based on the LoU interviews, it was noted that some teachers work together to better manage their lessons, solve problems related to their efficiency in the classroom such as properly using supplementary materials and fulfilling assessment requirements. For example, Bushra stated, "There are many matters in the teacher's guide that we don't understand such as math problems which are hard to solve. When there is time, all three teachers sit together and try to solve the matter among ourselves" (07/03/2010). These examples of teachers working together entail collaborating to better understand how to properly facilitate child-centred activities or incorporate supplementary materials suggested in the teacher resource guides. However, these reasons for working together are part of LoU 3 - Mechanical Use, not LoU 5, which entails collaborating to make adaptations in use for the students' benefit, not the teachers' benefit. Other teachers state that they are simply too busy with their daily teaching responsibilities to concern themselves with collaborating with colleagues. One teacher with over five years of experience commented, "We come to school to teach and we don't really have that much time to concentrate on things like [collaboration]. There are so many activities we are constantly engaged in so I don't think the three of us need to sit together and discuss ways of improving our collaboration" (10/03/2010). It is worth mentioning that even for those teachers that say they sit and discuss problems with colleagues during the school day, we do not really know from the research data how often that occurs. It is possible that teachers are recalling (for the researcher's benefit) and generalizing from a few memorable incidents when they worked together. The concepts of Integration (LoU V) and Collaboration (SoC V), fundamentally apply to regular interaction with colleagues for the purpose of improving implementation and student learning.

At LoU 6 - Renewal, none of the teachers provided evidence of exploring or implementing some means to adapt their use of active learning in a major way or to replace it completely. Findings from the interview data indicates that teachers rely heavily on the lesson plans and teacher guides provided by the NGO and appreciate having these materials. Teachers described regularly making minor adjustments to their lessons in the hope of better supporting the
individual needs of students but these examples were also part of LoU 3 - Mechanical Use, and
do not appear to have been directly intended to add up to a significant change in the pedagogical
approach used by teachers. Furthermore, none of the teachers spoke of a need or desire to explore
alternative pedagogical approaches or make any major modifications to their lessons. A teacher's
freedom to modify or substitute the active learning approach mandated by the NGO was not
 encouraged by supervisors, team leaders, or program officers from the central office. According
to Hana, "There is no freedom. If nobody comes to my class then I can teach freely"
(13/06/2010). The challenge for teachers was to manage the tension and preoccupation with the
fidelity of implementing the active learning lessons according to formal teaching expectations
mandated by the NGO and being more flexible and open-ended as per active learning /
constructivist principles.

**Relationship between Stages of Concern and Levels of Use**

Based on the research findings, it has been found that Mechanical (LoU III) and Routine
(LoU IVA) levels of Use are most predominant across novice, intermediate, and experienced
teachers (see Table 6.2). Regarding the Stages of Concern (SoC) findings, it was noted that Self,
Task, and Impact concerns were most common across teachers, although novice and intermediate
users expressed a greater number of Personal concerns than experienced teachers. According
to the developers of the CBAM model, there is, to some extent, an expectation that Personal
concerns are generally manifested or expressed by novice users and Impact or Consequence
concerns are largely the domain of more experienced teachers (Hall & Hord, 1987). Furthermore,
there is an assumption that as a teacher's SoC "matures" he or she will also progress, for example,
from a Mechanical LoU to a more Routine LoU, since higher stage concerns may occur in
advance of and perhaps motivate teacher progress towards higher LoU. This hypothesis appears
to fit relatively well with the findings from this study.

Interestingly, the results from my study appear to indicate that the teachers' LoU are
moderately related to their stages of concern - they shift parallel to one another - in terms of
implementing an innovation such as active learning. Therefore, in this study, the majority of
teachers' Self and Task oriented concerns appear to have had an impact on their efforts to
implement active learning strategies in their respective classrooms. Considering that nine out of
ten teachers were rated as Routine users of active leaning to a lesser or greater degree, their
orientation seems to put more emphasis on simply implementing the program they were trained to do and doing it right with minimal thought being given to improving innovation use. Consequently, their concerns are focused more heavily on efficiently implementing their lessons and the general affective and cognitive impact of their teaching on students. These findings suggest that the majority of teachers perceived their proficiency or LoU implementing active learning at a stage whereby the innovation is "institutionalized". According to Fullan (1985) this is the phase when innovation and change stop being regarded as something new and become embedded or a routine part of the school's way of doing things.

To better illustrate the relationship between these two CBAM tools for understanding teachers' adaptation and implementation of active learning, one novice teacher (Muna) and one experienced teacher (Bushra) have been selected to help identify similarities among SoC compared to their overall LoU. Focusing first on Muna's progress in implementing active learning methods, the outcome of her LoU branching interview determined Muna to be at a Mechanical (LoU III) level of use. Findings from Muna's LoU interview portray a teacher focused on personal, management, and logistical issues around properly using the active learning approach with minimal discussion around the impact of her teaching on student understanding. According to Hall and Hord (2006), at this level there is a day-to-day focus on planning and a general inefficiency in how the innovation is used. The implementer is largely focused on just trying to master his or her use of the innovation and any changes in use are made more to meet the teacher's needs than the students' needs. Secondly, when looking at SoC results, in Muna's case, the concerns she mentioned in her open-ended concerns statement included: (a) knowing subject matter enough to teach (Stage 2 - Personal concern), (b) managing time on-task (Stage 3 - Management concern), (c) assessing quality of student understanding (Stage 4 - Consequence concern), and (d) adapting teaching strategy based on student needs (Stage 4 - Consequence concern). These findings appear to indicate that Muna places a greater degree of concern on the impact of her teaching compared to concerns focusing on the task of implementing active learning or concerns that focus on herself rather than the act of teaching or the needs of her students. In Muna's case, her LoU rating as a Mechanical user of active learning partially matches up with some of her SoC statements but there is also a disconnect with her concerns that focus on the impact of her teaching and student understanding. In this situation, Muna's concerns about the
consequences of her efforts in the classroom may result, in time, to an increase in her LoU from Mechanical (LoU III) towards more Routine (LoU IVA) use of the active learning innovation.

In Bushra's case, she has been teaching at the NGO's schools for the past seven years and she describes herself as an expert user of active learning methods. According to Bushra, "There is not much problem right now. However, there is a lot to learn...As a teacher, I definitely want to be a good teacher and want to teach my students very well and I always have the intention to teach well" (07/03/2010). The overall LoU rating for Bushra was a split between a Routine (LoU IVA) level of use and a Refinement (LoU IVB) level of use. Findings from Bushra's LoU interview appear to portray a confident teacher who has knowledge of both short- and long-term teaching requirements and is able to fulfill the NGO's expectations as a quality implementer of active learning. Her views about using active learning methods are that she teaches her classes following the instructions provided in the resource guides but mentions that "...we still try to do something different to support the children" (07/03/2010). It appears that Bushra implements minor changes in her teaching and she desires greater opportunities to adapt or 'refine' her lessons to better support students. Bushra's views are closely aligned with Hall and Hord (1987) who describe the Refinement LoU as a state in which the teacher varies the use of the innovation to increase the impact on student learning. Based on the findings from Bushra's open-ended concerns statement, the major concerns she mentioned included: (a) applying active learning methods properly (Stage 3 - Management concern), (b) building positive relationships with students (Stage 3 - Management concern), (c) rigidity of the curriculum and teaching strategy (Stage 3 - Management concern), (d) adapting her teaching strategy based on student needs (Stage 4 - Consequence concern), and (e) assessing the quality of student understanding and learning (Stage 4 - Consequence concern). The variety of concerns mentioned by Bushra depict concerns at more than one stage - a phenomenon that Hall and Hord (2006) argue is totally possible. In Bushra's case, she clearly has Task (Stage 3 Management) concerns about students that are having an impact on her instructional decision making and she also has Impact (Stage 4 Consequence) concerns that focus more on identifying best practices to optimize student performance. These two stages of concern relate quite closely with Bushra's split LoU rating. Her Routine (LoU IVA) rating appears to match well with her concerns about implementing active learning with fidelity. It could also be argued that Bushra's concerns pertaining to a desire to adapt her teaching strategies to better meet student needs (Impact Concerns) contribute towards
raising her LoU rating to a Refinement (LoU IVB) rating, particularly when she is commenting on her attempts to vary her use of active learning. Overall, the apparent relationship between both Muna and Bushra's SoC results and LoU findings support the argument that a relationship between the two CBAM tools does exist. Although, it also appears that many of the concerns expressed by teachers in the open-ended concerns statement provide a somewhat conservative indication of a teacher's corresponding overall LoU.

Chapter summary

The Levels of Use interview data analyzed in this chapter suggests that the majority of teachers are at a Mechanical and Routine level of use of active learning methods. Among teachers trying to refine their use of active learning approaches, significant teaching experience with the NGO's primary education program and continuous professional development appear to have had an influence on the ability and willingness to initiate individual adaptations in their implementation of the NGO's pedagogical approach to teaching and learning. The following chapter I analyze the Innovation Configuration Maps which were compiled during repeated classroom observations of the ten teachers in the study. An attempt is also made to identify relationships that exist between all three CBAM diagnostic dimensions including the Stages of Concern, Levels of Use and Innovation Configuration Map findings.
Chapter 7: The Fidelity of Active Learning Methods: Comparison Across Teachers

The key CBAM instrument used to visualize and assess the various components and configurations likely to be found for any particular innovation is called an Innovation Configuration Map (IC Map). The IC Map specifies different ways of implementing the innovation and possible variations in the way teachers implement the 'behaviours' associated with each component. As mentioned in Chapter 3, the IC Map was developed in collaboration with senior members of the curriculum and teacher training units of the NGO. The various components, dimensions, and variations that comprise the IC Map illustrate the NGO's particular definition and understanding of active learning pedagogy. The IC Map in my study has seven components, and each component is made up of three to five aspects, or dimensions (see Appendix 15). The dimensions help to capture the complexity and interrelatedness of different aspects within each component (Hord, Stiegelbauer, Hall, & George, 2006).

The IC Map is the key data collection instrument I used to itemize active learning components and their variations. IC Map data enabled me to assess and judge, along a continuum of ideal (a) to less-than ideal (e), the degree to which the kinds of teaching and learning behaviours advocated by the developers of the NGO's primary education program were being put into practice by the ten teachers in my study. As mentioned in Chapter 3, each completed IC Map involved an assessment of 27 different behaviours organized within seven major components of active learning.

In addition to the IC Map data on active learning, anecdotal notes and narrative profiles of classroom practice collected during data collection provide a more qualitative basis from which to judge teacher effectiveness in the use of active learning methods (Avalos, 1990). While detailed analyses of IC Maps and field notes have been completed for each teacher in the study, space precludes presentation of all ten teacher's IC Map findings. A table is provided in Appendix 16, which displays the overall basic frequency counts for the ten teachers during 26 school visits. Each asterisk (*) shown in the frequency count table represents one assessment for each

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2 During each school visit I observed one teacher for a full shift of school (three periods). During each visit/observation, a total of 27 behaviours comprising each active learning component, dimension, and variation were assessed and recorded for each IC Map completed.
dimension of behaviour within each component of active learning. Each asterisk represents an individual teacher during one class observation. It is important to note that as one moves from the \( e \) (less than ideal) variation toward the \( a \) (ideal) variation, the behaviour and practices described increasingly approach the more ideal practices as defined by the NGO's developers including the teacher trainers, curriculum specialists, and senior education officers who helped in the development of the "active learning" IC Map. Measures for total of 702 behaviours related to the teachers' efforts to implement an active learning pedagogy were recorded for the participating teachers in 10 of the NGO's schools. The following comparative summary draws attention to key issues of the teachers' ability to implement active learning with fidelity as well as overall patterns for each of the seven active learning components. A synthesis of these findings is presented below along with a sample of classroom vignettes that draw attention to key issues of critical interest pertaining to various teachers' performance with regards to the seven active learning components. This is followed by a discussion about significant relationships between the Levels of Use (LoU) findings and the IC Map findings.

Component 1: Class environment / organization / management

Characteristics of this component were consistently given priority when teachers, trainers, program developers, and program officers with the NGO were asked to broadly define active learning. Within this component the five dimensions include: (i) creating a joyful atmosphere, (ii) teacher smiles and shows affection to students, (iii) teacher maintains a disciplined classroom, class rules, proper timing, (iv) classroom organization, and (v) teachers showcase student work. Table 7.1 displays class observation checklist judgments for the first component. The complete definitions for each dimension and possible variations are also given. A total of 104 observation checklist judgments were recorded across the ten teachers in the study for the first component. The findings indicate that the majority of teachers' behaviours (61%) were judged as ideal in terms of organizing and managing their classroom environment. This was the second highest rating among the seven components of the IC Map (see Appendix 16).

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<thead>
<tr>
<th>Component I: Classroom environment / organization / management</th>
<th>Basic frequency count / total behaviours assessed (N=130)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component I:</td>
<td>A (IDEAL)</td>
</tr>
<tr>
<td>Basic frequency count</td>
<td>104</td>
</tr>
</tbody>
</table>
### Component I: Classroom environment / organization / management
Basic frequency count / total behaviours assessed (N=130)

<table>
<thead>
<tr>
<th></th>
<th>A (IDEAL)</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E (Less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joyful Atmosphere</td>
<td>(i) Teacher creates a joyful atmosphere of respect, trust, and openness where all students are treated as equals.</td>
<td>(i) Teacher creates an atmosphere of trust and openness where students’ views are encouraged however value was only given to some.</td>
<td>(i) Teacher creates an atmosphere of openness but only some of the students’ views were encouraged.</td>
<td>(i) Teacher dominates the class and students’ views were not encouraged or valued.</td>
<td>(i) Teacher dominates the class and students’ are fearful and hesitant to contribute or ask questions.</td>
</tr>
<tr>
<td></td>
<td>80%</td>
<td>**</td>
<td>**</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Teacher Shows</td>
<td>(ii) The teacher frequently smiles and seems to enjoy the lesson. The teacher shows affection and actively encourages the students’ enjoyment during the lesson.</td>
<td>(ii) The teacher smiles and seems to enjoy the lesson but does not actively encourage a joyful learning environment among the students during the lesson.</td>
<td>(ii) The teacher occasionally smiles during the lesson but did not appear to be enjoying the lesson.</td>
<td>(ii) The teacher does not smile during the lesson and does not encourage student enjoyment during the lesson.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>73%</td>
<td>**</td>
<td>**</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Class Rules</td>
<td>(iii) The teacher always maintains a well-disciplined classroom with class rules and proper timing is followed.</td>
<td>(iii) The teacher frequently maintains a disciplined classroom with class rules and proper timing but does not ensure that students follow them.</td>
<td>(iii) The teacher occasionally maintains a disciplined classroom. Timing of lessons is often incorrect and students frequently ignore class rules.</td>
<td>(iii) The teacher does not maintain a disciplined classroom. Timing of lessons is not followed. There does not appear to be class rules.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>54%</td>
<td>30%</td>
<td>12%</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>
### Component I: Classroom environment / organization / management

**Basic frequency count / total behaviours assessed (N=130)**

<table>
<thead>
<tr>
<th>A (IDEAL)</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E (Less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class Organization</strong></td>
<td>(iv) The teacher’s classroom, desk and supplementary materials are well organized.</td>
<td>(iv) The teacher’s classroom, desk and supplementary materials are somewhat organized.</td>
<td>(iv) The teacher’s classroom, desk and supplementary materials are not organized.</td>
<td>*</td>
</tr>
<tr>
<td>**********</td>
<td>58%</td>
<td><strong>38%</strong></td>
<td>************</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Showcase Students</strong></td>
<td>(v) Bulletin boards are neatly arranged and showcase up-to-date student work.</td>
<td>(v) Bulletin boards are somewhat organized and showcase up-to-date student work.</td>
<td>(v) Bulletin boards are disorganized and showcase out-of-date student work.</td>
<td>****</td>
</tr>
<tr>
<td>**********</td>
<td>42.5%</td>
<td>42.5%</td>
<td>************</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total behaviours</strong></td>
<td>80 (61%)</td>
<td>36 (28%)</td>
<td>13 (10%)</td>
<td>1 (1%)</td>
</tr>
</tbody>
</table>

Each asterisk (*) shown in the frequency count table represents one assessment for each dimension of behaviour within each component of active learning. Each asterisk represents an individual teacher during one class observation.

An analysis of the first dimension found that 80% of teachers observed, create a joyful atmosphere of respect, trust, and openness where all students are treated as equals. Generally, teachers smile during class, frequently show affection towards students, and actively encourage the students' enjoyment during the lessons. A major reason teachers work so hard to foster a positive learning environment is to try and overcome problems with low and inconsistent attendance among students. It is believed that if students are enjoying their time at school they will attend classes regularly. This commitment by teachers is confirmed by the high overall rating for this key component of the IC Map.

Interestingly, among those that contributed to the initial development of the IC Map, there was an emphasis on the teachers' responsibility to maintain a safe and orderly learning environment. According to Parvin, one of the senior officers of the NGO's primary education program, "Discipline is emphasized. It is important to follow the class routine in a disciplined way. Rules are expected to be followed" (24/11/2009). Although class rules are rarely posted on
the walls of the classrooms, 54% of the time it was observed that teachers maintain a well-disciplined classroom where rules and timing and closely followed. The following vignette from Hana's class exemplifies an "ideal" rating for this particular dimension.

Prothama Primary School: Grade Two

Based on my two visits to Hana’s class, it appeared that she frequently maintained a disciplined classroom with class rules and proper timing. At all times, the teacher requires students to stand up when asking or answering a question. The teacher also informs students how much time remains to complete their work during class. Hana is quite strict about ensuring that students are following along when sitting together at the front of the class. Students that arrived late for class would wait outside the door of the class until the teacher gave them permission to enter and explain why they were late for school (13/06/2010).

Another characteristic identified by participants as an important dimension of active learning was the organization and cleanliness of the classroom, furniture, and teaching materials. From my observations, more than half (58%) of teachers' classrooms, desks, and supplementary materials were well-organized and 41% of the teachers' classrooms were ranked as "somewhat" organized and maintained.

The last dimension judged during class visits focused on teachers' efforts to showcase up-to-date student work around the classroom. The preparation of neatly arranged bulletin boards showcasing current student work was evident in 42.5% of classroom visited. While 53% of the classrooms were found to have student work on the walls, it was often out-dated and usually showcased work completed by older students from the second shift (grades three, four, and five). One particularly inspiring finding involved a teacher's effort to overcome the challenges of working in what can sometimes be an environmentally hostile environment. The following vignette from one of my visits to Afzal's school illustrates this point.

Nodikhat Primary School: Grade Two

Afzal’s class environment, organization, and management fluctuated from 'ideal' to 'less than ideal'. His below average rating for this component may gloss over the fact that between my first and second observations, his school was badly damaged by a violent summer storm known as a
kal boishakhi. The storm hit during the middle of the night and tore a large portion of the roof off the school building. Much of the material in Afzal's classroom was damaged or destroyed as a result of the storm. Despite this setback, Afzal made an extra effort to salvage some of the damaged storybooks to create colourful pictures and decorations for the walls of his classroom. As well, the bulletin boards were updated with student work and the reading corner was neatly set up with plenty of storybooks for students (12/06/2010).

Component 2: Teacher uses supplementary materials

Everyone who contributed to the development of the IC Map readily acknowledged that the availability and incorporation of supplementary materials into daily lessons was an integral part of a teacher's pedagogical repertoire and a major feature of the primary education program. According to Sadia, one of the primary education program coordinators, "supplementary materials are designed to help students achieve the learning competencies and bring clarification to learning concepts" (26/11/2009). There are four dimensions that contribute towards a varied definition of "supplementary materials" that largely focus on the role of the teacher. These include: (i) using the textbook during lessons, (ii) incorporating supplementary student learning materials, (iii) using the teacher's resource guide, and (iv) a teacher's attempt to include his or her own ideas into the lessons.

Despite the teachers overwhelming recognition of the value and importance of supplementary materials, when they were assessed using the IC Maps it was discovered that the fidelity (closeness to 'ideal' active learning practice) of teacher use of supplementary materials remained highly variable across teachers. The ideal use of supplementary materials was limited to 37% of the teachers observed during class observations (see Table 7.2). The proportion of teachers observed making less than ideal use of supplementary materials was also relatively high (20%). Overall average rating for this particular component when compared across teachers was the lowest, achieving only 77.2% rating for the "ideal" use of supplementary materials (see Table 7.2).

Table 7.2 Component II: Basic frequency count

<table>
<thead>
<tr>
<th>Component II: Teacher uses supplementary materials</th>
<th>A (IDEAL)</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic frequency count / total behaviours assessed (N=104)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Component II: Teacher uses supplementary materials

**Basic frequency count / total behaviours assessed (N=104)**

<table>
<thead>
<tr>
<th>Includes Textbook</th>
<th>Includes Supplementary Materials</th>
<th>Uses Teacher Guides</th>
<th>Includes Own Ideas</th>
<th>Total behaviours</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Teacher consistently uses the textbook.</td>
<td>(ii) Teacher consistently includes supplementary materials.</td>
<td>(iii) Teacher consistently uses the teacher’s guide appropriately.</td>
<td>(iv) Teacher consistently incorporates his/her own ideas and materials in the lesson.</td>
<td>Total behaviours 39 (37%)</td>
</tr>
<tr>
<td>*******</td>
<td>*******</td>
<td>*******</td>
<td>*******</td>
<td>31 (30%)</td>
</tr>
<tr>
<td>27%</td>
<td>38%</td>
<td>58%</td>
<td>27%</td>
<td>31 (30%)</td>
</tr>
<tr>
<td>(i) Teacher occasionally uses the textbook.</td>
<td>(ii) Teacher occasionally includes supplementary materials.</td>
<td>(iii) Teacher occasionally uses the teacher’s guide appropriately.</td>
<td>(iv) Teacher occasionally incorporates his/her own ideas and materials in the lesson.</td>
<td>13 (13%)</td>
</tr>
<tr>
<td>*******</td>
<td>*******</td>
<td>*******</td>
<td>*******</td>
<td>13 (13%)</td>
</tr>
<tr>
<td>27%</td>
<td>31%</td>
<td>27%</td>
<td>34%</td>
<td>13 (13%)</td>
</tr>
<tr>
<td>(i) Teacher rarely uses the textbook.</td>
<td>(ii) Teacher rarely includes supplementary materials.</td>
<td>(iii) Teacher rarely uses the teacher’s guide appropriately.</td>
<td>(iv) Teacher rarely incorporates his/her own ideas and materials in the lesson.</td>
<td>13 (13%)</td>
</tr>
<tr>
<td>****</td>
<td>****</td>
<td>**</td>
<td>***</td>
<td>13 (13%)</td>
</tr>
<tr>
<td>15%</td>
<td>8%</td>
<td>8%</td>
<td>27%</td>
<td>13 (13%)</td>
</tr>
<tr>
<td>(i) Teacher does not use the textbook.</td>
<td>(ii) Teacher does not include supplementary materials.</td>
<td>(iii) Teacher did not use the teacher’s guide in the classroom.</td>
<td>(iv) Teacher did not incorporate his/her own ideas and materials in the lesson.</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>*******</td>
<td>*******</td>
<td>****</td>
<td>*******</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>31%</td>
<td>23%</td>
<td>15%</td>
<td>12%</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

Each asterisk (*) shown in the frequency count table represents one assessment for each dimension of behaviour within each component of active learning. Each asterisk represents an individual teacher during one class observation.

The IC Map results for this component of active learning illustrate the teachers’ uneven use of supplementary materials. Although students are provided with government textbooks produced and provided free of charge from the National Curriculum and Textbook Board (NCTB) from grade one to grade five, teachers were observed consistently incorporating the textbook into lessons only 27% of the time and teachers’ efforts to use the textbook was not
evident in a substantial number (31%) of classrooms visited. One explanation for the limited use of the NCTB textbooks is that they simply do not yet exist for students in preschool. Another explanation could be that the suggested activities found in the teacher resource guides make the textbooks somewhat superfluous.

Evidence of teachers complementing their lessons with supplementary teaching materials such as word or number flash cards, student story books, big books, math blocks and manipulatives such as buttons, leaves, and sticks was also not overly encouraging. Only 38% of teachers observed were given a rating of "ideal" for consistently including supplementary materials and there were several instances (23%) where teachers did not use supplementary materials during any class visits. A finding common to teachers appeared to be their willingness to utilize supplementary materials during the teacher-led introduction and demonstration of the lesson activity but subsequently failing to provide students with any opportunities for hands-on learning with the materials. One explanations for the limited opportunities provided to students to use the supplementary materials appeared to be a result of insufficient time during class to allow students the extended time needed to properly use and benefit from such materials. The following vignette from Rezwan's class illustrates this tendency.

**Posheem Primary School: Preschool Class**

Rezwan's use of supplementary materials could be best described as inconsistent. Rezwan used flash cards to enhance lessons taught in math and Bengali reading classes but his students did not get an opportunity to handle the flash cards during these lessons. The teacher also incorporated a story from one of the NGO's own big books for Bengali reading but he did not provide his students with an opportunity to use the individual student copies of the same story despite there being sufficient copies on the teacher's desk. The teacher regularly used supplementary materials as an additional visual aid or instructional tool during the opening introduction and explanation of the lesson. Meanwhile, the students were denied any meaningful hands-on learning opportunities to use supplementary materials such as games, blocks, and reading books to apply what they were being taught in class. (18/07/10)

Another important supplementary material recognized by participants is the teacher resource guide provided to teachers for each subject. During 58% of school visits, teachers were
judged to be ideally making use of the teacher resource guides and teachers were closely following the step-by-step instructions for each lesson delivered. Teachers were observed routinely looking over their resource guides before starting a lesson and often they would refer to the guides periodically during lessons.

The last dimension of this component of active learning focuses on the teachers' attempts to include their own ideas and learning materials into the lessons. The frequency that teachers were observed consistently incorporating their own ideas and materials in lessons was not evident in a significant number (27%) of classrooms. It was more common to observe teachers who occasionally (34%) incorporated their own ideas into lessons. Encouragingly, in only 12% of lessons observed there was no evidence of teachers trying to incorporate their own ideas or materials into the lessons. Among the many teachers that were observed trying to improve the quality of their lessons, the following vignette from Tahsin's class illustrates his determined efforts to incorporate a variety of supplementary materials as well as his own ideas to improve his lessons.

Tagore Primary School: Grade Two

Tahsin received the highest rating for his use of supplementary materials. During the day I observed Tahsin, he used the NCTB textbook for math and English class. In math class, Tahsin incorporated the use of wooden blocks to help demonstrate the steps to properly solve double-digit addition problems. He did a very competent job using the blocks and provided sufficient time for students to use the blocks to help solve math equations easily. Tahsin also makes an effort to include his own ideas and materials into his lessons. For example, in English class, Tahsin incorporates flash cards to help students identify key words from a story being read and during an environmental study's class, Tahsin took his students on a mini-field trip to the school toilets to discuss the differences between hygienic and unhygienic practices (21/07/2010).

Component 3: Teacher uses an active learning approach

Another major component of active learning identified by participants focuses on less complex teacher behaviours such as: (i) modeling lesson activities properly, (ii) framing open-ended questions and encouraging discussion among students and teacher, (iii) showcasing students and their work during lessons, and (iv) linking topics with students' experiences.
Although the four dimensions listed above are less complex than instructional strategies such as group work or cooperative learning, they are essential behaviours in a teacher's instructional repertoire (Fullan, Bennett, & Rolheiser-Bennett, 1990). Based on an item analysis of IC Map findings, the ten teachers in the study were observed using active learning approaches 'ideally' during 53% of school visits (see Table 7.3).

Table 7.3  Component III: Basic frequency count

<table>
<thead>
<tr>
<th>Component III: Teacher uses an active learning approach</th>
<th>A (IDEAL)</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Teacher clearly introduces the lesson and models</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the activity properly for students.</td>
<td>********</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>********</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>88%</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Questions and Discussion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Teacher always facilitates students’ activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>by asking open-ended questions and encouraging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>discussion.</td>
<td>*****</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>23%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Showcase Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) Teacher consistently showcases students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>during the lesson.</td>
<td>********</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>********</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>73%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesson Relevancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) Teacher always makes lessons relevant by linking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>topics with students’</td>
<td>(i) Teacher frequently makes lessons relevant by linking topics with students’</td>
<td>(i) Teacher infrequently makes lessons relevant by linking topics with student’s</td>
<td>(i) Teacher rarely or never makes lessons relevant by linking topics with student’s</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
experiences.  
****** 27%  
Total behaviours 55 (53%)

experiences less well.  
****** 34.5%  
Total behaviours 27 (26%)

experiences.  
****** 34.5%  
Total behaviours 19 (18%)

experiences.  
* 4%  
Total behaviours 3 (3%)

<table>
<thead>
<tr>
<th>Total behaviours</th>
<th>Total behaviours</th>
<th>Total behaviours</th>
<th>Total behaviours</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 (53%)</td>
<td>27 (26%)</td>
<td>19 (18%)</td>
<td>3 (3%)</td>
</tr>
</tbody>
</table>

Each asterisk (*) shown in the frequency count table represents one assessment for each dimension of behaviour within each component of active learning. Each asterisk represents an individual teacher during one class observation.

Focusing on the first identified aspect of the active learning approach, there was a high degree of fidelity (88%) in the teachers' ability to clearly introduce their lessons and properly model the activities for students. Although the majority of teachers were very adept at introducing their lessons, the following vignette of Bushra's class illustrates her ability to closely follow the precise lesson plan guidelines.

**Brishti Primary School: Grade One**

Bushra clearly introduces her lessons and models the activity properly for students most of the time. For example, during a math lesson, the teacher wrote an addition problem on the blackboard (9 + ____ = 15). She then asked students to fill-in the blank. Bushra helped students solve this problem by showing/reminding them of some strategies to help solve such equations (19/07/2010).

A second instructional approach designed to encourage active learning focused on a teacher's ability to facilitate activities by asking open-ended questions and encouraging discussion. There were only six occasions (23% of class observations) when teachers were judged to be 'ideal' implementers of this particular dimension. The use of closed-ended questions that involved simple *ji* or *na* (yes or no) responses from students, for example, was more common in many of the school classrooms (38% of teachers observed). Unfortunately, it was also common to observe teachers that would dominate class discussions, giving little or no opportunity for students to actively contribute resulting in long periods of time when they would have to sit passively listening to the teacher. Reasons for the low ratings for this dimension may include logistical issues such as time constraints but it may also be a result of cultural issues such that teachers somewhat discourage students from asking a lot of questions or requests for repetition of
concepts and instructions. Another explanation could be that teachers' personal practical experience with "chalk and talk" lecturing is what they are most comfortable with and they value it as an effective and economical way to present information in class, despite their training and the availability of supplementary materials.

For the dimension focusing on the teachers' ability to showcase students and their work, almost three-quarters of the teachers (73%) consistently provided students with such opportunities during my class observations. A fundamental part of a teacher's instructional repertoire was the practice of inviting two or three students to come up to the front of the class at the end of each lesson to present their work, both orally and visually, to the rest of the class. Although a somewhat simple practice, students were consistently enthusiastic about being chosen to share their class work with their peers.

The fourth aspect used to describe how a teacher uses an active learning approach addressed his or her ability to make lessons relevant for students. According to an analysis of IC Map checklist findings, a limited number of teachers (27%) were able to consistently make lessons relevant by linking topics with students' experiences. Despite the low results for this dimension there were some notable exceptions. The following vignette of Ritu's preschool class illustrates her competency guiding a very engaging and contextually relevant discussion with her young students.

**Uttara Primary School: Preschool Class**

The topic of the lesson was "Your father's job". Ritu begins the lesson by drawing a picture of a person working in a field. Ritu asked students to explain what types of work their fathers did for a living. Students were very enthusiastic to share. This led to an interesting discussion about the different types of crops that might be grown in the surrounding fields. One student proudly stated that his father grew vegetables and another said his father grew rice. Ritu then wrote out each student's response on the black board. For example, she wrote, *Amar baba dan bhat* (My father grows rice) and then encouraged students to read out each of the words. This discussion also illustrates the teacher’s effort to make the lesson relevant by linking the topic with the students’ own lives and family (16/08/2010).
Component 4: Teacher differentiates support for students

A priority among teachers is ensuring that all students are learning and passing their exams. To achieve these goals, teachers made significant efforts to focus their support on lower achieving students. During the development of the IC Map, I interviewed Azom, who is a senior teacher trainer for the NGO's primary education program and he stated, "teachers must know students' needs and problems and design lessons according to the level of understanding of the students" (25/11/2009). Similarly, one of the senior officers with the NGO's primary education program named Parvin explained how they work hard with novice and experienced teachers to inculcate a pedagogical philosophy of "teaching for understanding" rather than emphasizing memorization and the ability to reproduce long sequences verbatim. She adds "this is a big conceptual shift for teachers" (24/11/2009). In defining what behaviours best indicate how teachers differentiate support for students, three dimensions were identified including: (i) planning lessons based on student ability, (ii) taking extra care for students with special needs, and (iii) using on-going assessment strategies. An item analysis of IC Map checklist findings for this particular component indicates that the majority of teachers (57%) made considerable efforts to differentiate support for their students during class observations (see Table 7.4).

Table 7.4 Component IV: Basic frequency count

<table>
<thead>
<tr>
<th>Basic frequency count / total behaviours assessed (N=78)</th>
<th>A (IDEAL)</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson Suitability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Teacher is very familiar with all students’ level of understanding and ability and plans the lessons accordingly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>**********</td>
<td>34%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Teacher consistently takes special care of weaker students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>**********</td>
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</tr>
</tbody>
</table>
According to Akash, one of the field coordinators for the primary education program, there is recognition that "a teachers’ understanding of every child’s level is important for planning appropriate lessons" (24/11/2009). The IC Map findings collected during class observations found that the teachers' familiarity with every student's level of understanding and ability was the norm in many of the schools (58%), but teachers' efforts to modify lesson plans to meet each student's affective and cognitive needs wasn't always successful. The following example from a preschool Bengali writing class illustrates the challenge that Ritu, a teacher with more than five years experience, faces when attempting to follow the instructions from the teacher resource guides while concurrently modifying lessons to best match student ability levels.

### Uttara Primary School: Preschool Class

Ritu began the lesson by writing a Bengali word on the blackboard. The word was *pookeray*, which means 'pond'. The teacher then spent some time helping students properly sound out the word. Once the majority of students were able to say the word on the board Ritu instructed the students to write the word in their student copies (local term for "workbooks"). It was at this point that hands shot up into the air and the students either shouted out for help or sat quietly staring at the blank page of their copies. The problem facing both the teacher and students was that the word was too difficult. The difficulty facing students was that the word contained three
short-forms of particular vowels and the students had only been taught how to read and write two of the shortened vowels. When I asked the teacher why this particular word was chosen she informed me "the word was chosen by the curriculum developers and it was in fact a specific word that the students had to know how to write properly". Ritu also mentioned that she was required to cover the syllabus in a set period of time and she had little choice but to cover this content (16/08/2010).

The second dimension focused on how teachers provide extra care for students with special needs. An analysis of IC Map findings indicate that a high proportion of teachers (62%) consistently made an effort during class observations to take care of individual student needs. Often teachers would move around the classroom helping students with their work. Another common strategy used by teachers was to sit on the floor with a small group of students that required extra support and provide them with extra encouragement to complete their work. The types of special needs included a few students with physical and/or cognitive disabilities as well as a much larger group of students I define as "low achievers". This group of students was struggling to cope academically for reasons including high absenteeism, limited support or encouragement outside of the school and language barriers between students and the teachers.

To understand which students needed extra support, teachers consistently used on-going assessment strategies. Results from the IC Maps found that 73% of teachers were observed

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8 Across Bangladesh, there are many local dialects that deviate from formal Bangla and it is common that many of the students' speak a different dialect than the teacher and the more formal Bangla used in the textbooks. Many teachers in my study struggled to properly communicate with students and guardians despite there being a distance of as little as five kilometres between their respective villages. For example, Muna taught at a school less than two kilometres from her home yet the language and cultural differences between herself and her students were vast. Interestingly, Muna lives in a semi-urban community south of a major highway that runs east - west and the school is located about one kilometre north of the highway. The highway also acts as a levee, keeping the monsoon floodwater from inundating vast tracks of farmland south of the highway. This region is a unique geographic area known as a haor (a wetland ecosystem which physically is a saucer shaped shallow depression. It is a mosaic of wetlands habitats, including rivers, streams and immense seasonally flooded cultivated plains (Van Schendel, 2009). What was unique about Muna's students was that they all came from families that earn their living by fishing. These families of fisherman are culturally unique and largely associate only with other villages made up of families that earn their living by fishing. These families work and live somewhat in isolation from other non-fishing communities. Marriages are generally between families and most social events involve only those families and communities that also catch fish for a living and live in the same geographic area. The village where the school was located consists of slightly uplifted terraces that look like small islands in the floodplain with thatch homes built atop. During the monsoon season, the area surrounding the village and school would flood from the monsoon rains and were only accessible by boat. The school itself became a small island and each day a simple wooden boat and boatman hired by the NGO paddled from home to home to collect the students for school (see photo of school in Appendix A). During the monsoon season, Muna's short commute to school took over 60 minutes as she too had to wait near the highway for a boat and boatman to collect her and paddle her to the school.
achieving an "ideal" rating for this particular dimension. Beyond the widespread technique of simply asking students "do you understand?" which always resulted in the predictable choral response of "yes" from students; teachers engaged in more thorough assessments to better determine what concepts students were or were not understanding. The majority of student assessment was done informally during class. The most common strategy involved teachers moving from student to student checking their work, pointing out mistakes, and providing extra on-the-spot guidance when necessary.

While teachers frequently monitored student progress during lessons, one of the more troubling findings observed during class visits were the times when more formal assessments were required involving teachers "testing" students on particular concepts and recording the results. During these times, problems with class management and maintaining student engagement often arose. For a novice teacher like Muna, trying to balance the need to conduct individual formal assessments within a specific calendar period while also ensuring that the rest of her students are actively engaged was fraught with difficulty. For example, during one visit I observed Muna sitting at her desk and conducting a formative reading assessment with five students, each individual assessment requiring approximately three to five minutes. During this time, the rest of the class sat on the floor with their copies closed in front of them, chatting with friends while waiting for the teacher to provide some instruction. In similar situations in other classes, more experienced teachers were observed trying to involve students in cooperative games or students were provided with reading books and worksheets to keep them occupied while individual formal assessment were being completed. Another concern stemming from the use of formal assessment is the extent to which teachers are able to use the student assessment data to adapt their teaching to better meet individual student needs. Most formal assessments appeared to be done by teachers mainly as an administrative requirement and they were often done quickly as the teacher appeared to be rushing students through the process. From my observations, few teachers appeared to conduct formal assessments with the intention of collecting and purposefully using the findings to adapt their teaching approach for the benefit of students. It was not clear that teachers knew how to analyze the student data and use the feedback to pinpoint areas in need of improvement, or to get to the root cause of problems with their teaching or student learning.
Component 5: Teacher uses cooperative learning instructional strategies

Among the NGO's teacher trainers, program officers, and teachers that contributed to the development of the IC Map, the use of cooperative learning and group work strategies was a key expectation and a main component of an active learning classroom. According to Parvin, a senior officer with the NGO's primary education program, "teachers will regularly divide students into ability groups" (24/11/2009). Similarly, a senior teacher trainer named Azom mentioned, "teachers encourage peer support and group work in our schools" (25/11/2009). Three dimensions selected to help define this component include: (i) students working in groups, (ii) teachers encouraging cooperative learning, and (iii) teachers providing support to groups of learners. Based on the IC Map checklists compiled over 26 school visits, it was observed that more than half (54%) of the teachers' were rated as ideal users of cooperative and group learning strategies (see Table 7.5).

Table 7.5 Component V: Basic frequency count

<table>
<thead>
<tr>
<th>Component V: Teacher uses cooperative learning / group learning</th>
<th>Basic frequency count / total behaviours assessed (N=78)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (IDEAL)</td>
<td>B</td>
</tr>
<tr>
<td>Group Work</td>
<td></td>
</tr>
<tr>
<td>(i) Teacher consistently organizes students into pairs or groups.</td>
<td>(i) Teacher frequently organizes students into pairs or groups.</td>
</tr>
<tr>
<td>**********</td>
<td>***</td>
</tr>
<tr>
<td>80%</td>
<td>12%</td>
</tr>
<tr>
<td>Cooperative Learning</td>
<td></td>
</tr>
<tr>
<td>(ii) Teacher consistently encourages cooperative learning.</td>
<td>(ii) Teacher frequently encourages cooperative learning.</td>
</tr>
<tr>
<td>****</td>
<td>***</td>
</tr>
<tr>
<td>15%</td>
<td>12%</td>
</tr>
</tbody>
</table>
Although there was a relatively high average rating for this component, there was quite a lot of variability in teachers' levels of competency among the three dimensions. The first dimension and the one aspect where teachers were judged to be at an ideal rating involved teachers consistently (80%) organizing students into groups. It is worth mentioning that the strategy of dividing students into three groups is a fundamental characteristic of the NGO's active learning program and it is practiced in all of the schools. According to the NGO, "In the classroom a whole class teaching learning approach is followed. This whole class delivery method, where all students are engaged in the same subject yet are split into groups, often to work collaboratively, forms the basis of all classes" (2009). Generally, organizing students into three groups reflected an organizational requirement that teachers automatically followed since every class contains two large tables at one end of the room and a large carpeted seating area near the front of the class (see Figure 4.4). Some teachers in the study such as Wasifa, made a conscious effort when dividing students into groups to do so based on ability groupings. There was one group of high achievers, another group of "average" students and a third group mostly consisting of low achievers. For six teachers in the study, the rationale for organizing students into groups appeared to be more of a class management technique than a purposeful attempt to create ability groupings.

Conversely, some teachers appeared to make a conscious decision not to use group work strategies in their classrooms. Looking at the IC Map checklist findings, it is worth mentioning that three of the teachers that received the lowest ratings for this particular component all taught
preschool during the time that I conducted class observations and completed the IC Maps. Beyond the obvious challenges of trying to organize preschool-aged students into productive learning groups, Helen Abadzi (2006) points out,

Students may benefit differentially from group work or "traditional" instruction depending on how well the activities are designed, goals are articulated, whether the roles of each student are clearly defined, whether students can do the work with minimal support, and how conflict between students is handled (p. 107).

The second dimension chosen to help define this component investigated whether or not teachers encouraged cooperative learning among their students. IC Map results for this dimension found that teachers' consistent encouragement of cooperative learning was frequently not evident (15%) in classrooms visited. It was also noted during class observations that more than one-third (35%) of teachers never encouraged students to work together during class time. There is a difference between having students work in a group and structuring students to work cooperatively. A cooperative group needs to have a common goal on which the group will be rewarded for its efforts (Johnson, Johnson, & Holubec, 1987). During most class visits, I observed students sitting at a table or on the carpet together doing their own work but free to talk with each other as they work. This arrangement was not structured to be a cooperative group as there was no positive interdependence between students. Only on a few occasions did I observe a teacher clearly instructing students to work with a partner or work with a group and sharing responsibilities for a task to be completed. Perhaps it could be called "independent group work". Despite the low ratings associated with most teachers' efforts to encourage cooperative learning, the following vignette from Hana's class illustrates that there were teachers who regularly organized activities that required cooperative pair work.

Prothama Primary School: Grade Two
Frequently, Hana would organize students into groups of two with the expectation of working together cooperatively. Types of cooperative activities encouraged by the teacher include sharing a reading book together or practicing English phrases such as “What is your father’s name?” Hana also used pair work as a means of peer support. On a few occasions, I observed one of the
higher achieving students working closely and helping a lower achieving student complete their work (13/06/2010).

A strength demonstrated by all teachers was their ability to provide support to groups of learners. A relatively high proportion (65%) of teachers were observed consistently spending time interacting and supporting groups of students. Although this support was essentially provided to individual students sitting amongst a larger group, the teacher's presence and overall encouragement appeared to help all students remain actively engaged with their work.

**Component 6: Teacher actively engages students**

Throughout the development of the IC Map, the dominant expectation of those who contributed to its multiple iterations was belief that teachers should actively engage students in learning tasks. For instance, Parvin defined the active engagement of students as "involving students in the teaching-learning process" (24/11/2009). Others involved in the development of the IC Map mentioned the importance of capturing and maintaining student interest in learning. According to Azom, "for the maximum amount of time, students should be engaged in learning and teachers should be involving students and encouraging their participation. To accomplish this, teachers are encouraged to design creative tasks, word games, and use role play" (25/11/2009). This key component of the IC Map consists of four dimensions, which is indicative of the greater complexity of the teaching strategies employed by the teachers. The teacher behaviours identified include: (i) ensuring students are engaged most of the time, (ii) encouraging students to ask questions and participate in class, (iii) encouraging self-directed learning among students, and (iv) providing opportunities for students to engage in hands-on learning. Despite the emphasis given to promoting active learning within the schools, after an item analysis of the checklist results from the IC Maps, the findings from class observations indicate that just half (50%) of the teachers earned an *ideal* rating for their ability to actively engage their students during class (see Table 7.6). This result was the second lowest *ideal* rating among the seven key components of active learning.
## Table 7.6  Component VI: Basic frequency count

### Component VI: Teacher actively engages students

<table>
<thead>
<tr>
<th>Basic frequency count / total behaviours assessed (N=104)</th>
<th>A (IDEAL)</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Engagement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Teacher consistently tries to ensure students are engaged in tasks most of the time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>***************</td>
<td>58%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Student Participation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Teacher consistently encourages all students to ask questions and participate in discussion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>***************</td>
<td>46%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-directed Learning</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) Teacher consistently encourages students to engage in self-directed learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>***************</td>
<td>77%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Supplementary Materials</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) Teacher consistently encourages hands-on learning and the students’ use of supplementary materials to achieve learning objectives.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*****</td>
<td>19%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total behaviours</td>
<td>27%</td>
<td>4%</td>
<td></td>
<td></td>
<td>50%</td>
</tr>
</tbody>
</table>

### Component VI: Basic frequency count

- A (IDEAL) represents the behaviors that meet the ideal standard.
- B, C, D, and E (less than IDEAL) represent decreasing levels of engagement.

- **Student Engagement**
  - (i) Teacher occasionally tries to ensure students are engaged in tasks.
  - (i) Teacher infrequently tries to ensure students are engaged in tasks.
  - (i) Teacher did not try to ensure students were engaged in tasks.

- **Student Participation**
  - (ii) Teacher occasionally encourages students to ask questions and participate in discussion.
  - (ii) Teacher rarely encourages students to ask questions and participate in discussion.
  - (ii) Teacher did not encourage students to ask questions and participate in discussion.

- **Self-directed Learning**
  - (iii) Teacher occasionally encourages students to engage in self-directed learning.
  - (iii) Teacher rarely encourages students to engage in self-directed learning.
  - (iii) Teacher did not encourage students to engage in self-directed learning.

- **Supplementary Materials**
  - (iv) Teacher occasionally encourages hands-on learning and the students’ use of supplementary materials to achieve learning objectives.
  - (iv) Teacher rarely encourages hands-on learning and the students’ use of supplementary materials to achieve learning objectives.
  - (iv) Teacher did not encourage hands-on learning and the students’ use of supplementary materials to achieve learning objectives.
According to the IC Map findings, more than half (58%) of teachers observed during class observations were consistently attempting to ensure students were engaged in tasks during their lessons. From repeated school visits among the ten teachers in the study, there appears to be a common instructional approach employed to help maintain student attentiveness and participation during lessons. The formalized cycle of activities begins with a teacher introducing the lesson in a lecture format, followed by a brief discussion where students are encouraged to ask questions, followed by practice time to allow students to complete an activity, and concluding with some form of evaluation that usually involves students coming up front to showcase their work for the rest of the class. Although the NGO describes their instructional method as "active learning", many of the underlying principles appear similar to Hattie's (2009) definition of direct instruction. According to Hattie, direct instruction involves "guides to how the teacher should present the lesson - including notions such as input, modeling, and checking for understanding" (p. 205).

Teachers who were judged to be making concerted efforts to engage students incorporated a variety of strategies including fostering a mildly competitive atmosphere in class such that students work hard to finish their work quickly with the fewest mistakes. For example, during the two observations of Hana's class, she frequently provided students with opportunities to solve problems or demonstrate they have mastered a particular concept on the blackboard. During these types of activities that involved showcasing an individual student's work, Hana expected the rest of the class to monitor the progress of the student at the black board and clap when he or she was able to answer correctly or help suggest corrections when necessary. Frequently though it was noted that many other teachers had less success with this strategy as they struggled to sustain the attention of the rest of the class while one student worked closely with the teacher at the black board. During the transition time between subjects, a common strategy used by a number of the teachers involved leading students in a song that often involved simple physical movements. These types of activities were always very popular with students.

Recognizing that it is difficult to keep all students engaged all the time with curriculum-related activities, nearly half of the teachers observed struggled to sustain the engagement
particularly among the more high achieving students. Usually consisting of no more than five students per class, this group would regularly complete the class activity within a few minutes and were then required to wait patiently for the remainder of the class to catch up and complete their work. Unfortunately, when the higher performing students completed their work they would sit quietly for a minute or two and then begin to talk with other students and distract those students that had not completed their work. These disruptions resulted in more time being required for the majority of students to complete their work, which had the concomitant effect of forcing those that had completed their work to have to wait even longer for the next task. Students were never encouraged to provide peer support to other slower students still trying to complete their work. Based on class observations, it was uncommon for teachers to provide additional materials such as supplementary work sheets or storybooks so as to enable students who finished early to further challenge themselves academically.

Another instructional strategy identified as a key characteristic of the NGO's active learning approach involved teachers encouraging students to ask questions and participate in discussions and class activities. The IC Map findings for this dimension were quite variable. Less than half (46%) of teachers observed consistently managed this strategy, and 18% of teachers were found to rarely encourage students to ask questions and participate in discussions. Generally, teachers appeared to struggle to engage students in open-ended discussions and often seemed to prefer a more "teacher-centred" style of teaching; relegating students to providing intermittent yes and no responses. According to Abadzi (2006), teachers with limited pedagogical content knowledge may feel less confident and uncomfortable when students ask questions, particularly if they are difficult questions. It was a routine observation to witness a teacher addressing the entire class and inviting recall that tended to involve students responding in chorus, which is less effective than focusing on independent student contribution.

Defining "self-directed learning" within the context of the NGO's schools does not necessarily mean that students have a choice in what, when, or how they might engage with the curriculum and learning materials. These decisions were determined well before the start of class. In fact, the curriculum development team at the NGO's head office provides detailed lesson plans to every teacher in the form of teacher resource guides (see Appendix 20). Rather, repeated class observations and IC Map findings support a definition of self-directed learning that focuses on the ability of students to work independently with minimal support and guidance from the
teacher. Some typical examples of self-directed learning include opportunities given to students to help present and demonstrate skills and knowledge during the opening explanation of each lesson or working independently during class time to complete an activity. It is important to note that students are expected to complete every learning task, ideally in a constructivist way, within the limited time allocated for each subject. A challenge for all of the NGO's teachers was to somehow overcome this issue around time. Every teacher mentioned that the majority of students needed more time than was available to them to achieve the necessary learning competencies.

With a relatively short school day lasting between 120 and 150 minutes for students in preschool to grade two, students and teachers are under pressure to use their time efficiently. There is very little or no carry-over of lesson topics and activities from one day to the next. Therefore, a student's ability to succeed is measured by their ability to be effective self-directed learners.

Taking into consideration the perspective of teachers and other NGO personnel involved in the primary education program, IC Map checklist findings indicate that teachers consistently (77%) encourage students to engage in self-directed learning while at school.

According to Hall and Hord (2006), normally, IC maps will deal not just with the role of the teachers and their use of the materials but with the role of the students as well (p. 119). Addressing the importance of student engagement, the fourth dimension of this component focused on the teachers' efforts to make supplementary materials accessible to students during lessons. While teachers made frequent use of learning materials themselves during the delivery of lessons, 50% of those observed did not encourage or provide opportunities for hands-on learning to help students achieve the required learning objectives. When supplementary materials such as activity books were made available to students it was often done to keep students occupied while the remainder of the class completed their work. Although the number of instances I observed teachers providing students with supplementary materials was limited (19% of classes observed), there were still occasions when teachers made considerable efforts to prepare materials and provide very rewarding learning opportunities for students across subject areas. The following vignette from Hana's class provides a good example of an engaging Bengali reading class.
Prothama Primary School: Grade Two

During one class, Hana gave each group of students a set of four flashcards that when put together made a circle. On each flash card piece was a word and when properly put back together into the shape of a circle the four words combined to make a sentence. Students were encouraged to work together to try and make a proper sentence and then they were instructed to locate their sentence from a storybook that was being studied in class. The activity involved a lot of cooperation and discussion amongst students and each group was ultimately successful in developing a proper sentence and locating it within the original story being studied in class (06/03/2010).

Component 7: Teacher competency (knowledge, skills, attitude, concerns)

In the process of developing the IC Maps, there was a good deal of consensus among the developers about what the active learning innovation should look like when it is in use as well as a number key professional and personal attributes about what an active learning teacher should look like in the classroom. Among the teacher trainers, curriculum developers, and program officers who offered a vision of professional development standards in operation in the field (Roy & Hord, 2004), there were high expectations about teacher competency - more specifically on teachers' knowledge, skills, attitude, and concerns. To try and help identify these less tangible operational forms, four dimensions addressing the teachers' competency were developed including: (i) familiarity with the resource guide materials, (ii) mastery of subject matter, (iii) interest and enthusiasm when teaching, and (iv) patience, kindness, and tolerance towards students. Analysis of variations of teacher competency found the degree of fidelity to be highest (79%) of all seven components of active learning (see Table 7.7).

Table 7.7 Component VII: Basic frequency count

<p>| Component VII: Teacher competency (knowledge, skills, attitude, concerns) | Basic frequency count / total behaviours assessed (N=104) |
|---|---|---|---|---|
| A (IDEAL) | B | C | D | E (less than IDEAL) |
| Resource Guides | (i) Teacher is very familiar with the suggested activities in the textbook and | (i) Teacher is somewhat familiar with the suggested activities in the | (i) Teacher is not comfortable using the suggested activities in the | (i) Teacher did not use the suggested activities in the textbook or |
| | | | | |</p>
<table>
<thead>
<tr>
<th>Teacher's Guide (including objectives and learning outcomes) of the lesson.</th>
<th>Textbook and teacher's guide (including objectives and learning outcomes) of the lesson.</th>
<th>Textbook and teacher's guide (including objectives and learning outcomes) of the lesson.</th>
<th>Teacher's guide (including objectives and learning outcomes) of the lesson.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>50%</strong></td>
<td><strong>50%</strong></td>
<td><strong>50%</strong></td>
<td><strong>50%</strong></td>
</tr>
</tbody>
</table>

### Subject Matter Knowledge

- (ii) Teacher consistently demonstrates their mastery of the subject matter. **69%**
- (ii) Teacher occasionally demonstrates their familiarity about the subject matter. **31%**
- (ii) Teacher rarely demonstrates their familiarity about the subject matter. **15%**
- (ii) Teacher does not appear to be familiar with the subject matter. **5%**

### Teacher Interest

- (iii) Teacher always demonstrates interest and enthusiasm in the lesson. **85%**
- (iii) Teacher occasionally demonstrates interest and enthusiasm in the lesson. **15%**
- (iii) Teacher rarely demonstrates interest or enthusiasm in the lesson. **5%**
- (iii) Teacher shows little or no interest or enthusiasm in the lesson. **0%**

### Teacher's Patience

- (iv) Teacher demonstrates patience, kindness and empathy for the students. **100%**
- (iv) Teacher occasionally demonstrates patience, kindness and empathy for the students. **25%**
- (iv) Teacher rarely demonstrates patience, kindness and empathy for the students. **0%**
- (iv) Teacher did not show patience, kindness or concern for students. **0%**

<table>
<thead>
<tr>
<th>Total behaviours</th>
<th>Total behaviours</th>
<th>Total behaviours</th>
<th>Total behaviours</th>
<th>Total behaviours</th>
</tr>
</thead>
<tbody>
<tr>
<td>79 (76%)</td>
<td>25 (24%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

Each asterisk (*) shown in the frequency count table represents one assessment for each dimension of behaviour within each component of active learning. Each asterisk represents an individual teacher during one class observation.

The IC Map checklist findings illustrate that teachers' knowledge, familiarity and appropriate delivery of suggested activities in the textbooks and teacher resource guides was deemed to be ideal 50% of the time. Among most of the novice and intermediate teachers, it was common to observe teachers start their day reviewing their weekly lesson plan guides to determine which subjects and topics were to be covered. Teachers would also spend some time...
closely reading the instructions for each lesson found in the teacher resource guides provided for each core subject area. The more experienced teachers often spent a minimal amount of time looking over their lesson plan guides before or during class and would often try to include their own adaptations to suggested activities in an effort to improve the effectiveness of the lessons. That most teachers routinely started the school day by looking over daily timetables and lessons seems to indicate a lack of preparation for class. It may also indicate that teachers spent a limited amount of time engaged in planning their lessons, which could partially explain why it was uncommon to observe teachers augmenting their lessons or complementing the prescribed activities with their own ideas. Although most teachers appeared to be quite dependent on the prescribed lesson plans, they would frequently change the sequence or omit some activities depending on student needs, time constraints, or their familiarity and confidence leading the activity.

Based on repeated class observations, many teachers (69%) consistently demonstrated their mastery of the various subjects taught. This finding appears to validate the commitment and effort made by the NGO to provide regular follow-up subject-based training for all teachers. The one subject where teacher competency was most inconsistent was English. The level of fluency among all teachers was quite low and some teachers were clearly more successful and confident teaching this particular subject than others. Among teachers with limited exposure to English there was a high reliance on the lesson plan instructions provided in the teacher resource guide for English and supplementary teaching materials like alphabet posters. The following vignette illustrates Wasifa's attempt to demonstrate the proper way to write letters in English.

Dohkeen Primary School: Grade One

Wasifa almost always demonstrates a strong grasp of the subject matter but on one occasion when teaching an English lesson it was clear she wasn’t very confident. The lesson was on the English alphabet. Wasifa wrote a number of English letters on the black board but she used the Times New Roman font rather than a font more appropriate for children’s handwriting. When asked about this during the interview, Wasifa explained that her instructions tell her to make the letter shapes that way. This illustrates a high degree of dependency on the teacher resource guide for English class (25/07/2010).
The final dimensions of the active learning IC Map focused on the teachers' attitude and concern for their students. Teachers consistently (100%) demonstrated a high degree of patience, kindness, and tolerance towards their students. In spite of the frequently oppressive heat and humidity in the classrooms, there was clearly a strong commitment among all NGO staff to foster a friendly and welcoming classroom environment in an effort to ensure that students would attend school regularly and parents would be confident that sending their children to school was safe and worthwhile. Among teacher trainers and program officers, it was repeatedly mentioned that teachers need to be friendly towards the students and any form of physical discipline is strictly prohibited. According Parvin, "teachers are taught how to talk with children in a more positive and supportive way" (24/11/2009). Positive reinforcement was the key and teachers frequently praised their students and would thank them for their efforts. Many teachers appeared concerned and committed to ensuring their students were successful learners at school and respectful members of the community.

**Relationships between Stages of Concern, Levels of Use, and IC Map findings**

A discussion about relationships between Stages of Concern (SoC) findings and Levels of Use (LoU) findings was presented in Chapter 6. Recognizing that an apparent relationship does exist between these two CBAM instruments, such that as a teacher's SoC "matures" he or she will also progress in parallel, to lesser and or greater degrees, to a higher LoU of an innovation, an attempt will now be made to investigate what, if any, relationship exists between the LoU findings and the IC findings.
Before attempting to discuss any potential relationships between LoU and IC findings, it is necessary to first modify the IC Map checklist results into numerical representations. First, there are seven major components on the IC Map for active learning. Each of these has a number of dimensions and each dimension has either four or five variations, labeled "a" through "e". The most ideal component variations or "a" represent "high fidelity" or "ideal" teacher and student behaviours, i.e. classroom practices most closely aligned with the NGO's standards and expectations. The "d" and "e" variations represent "less than ideal" or "low fidelity" representations of what teachers and students could be doing in class. Second, for the purpose of clustering and to help display variability across teachers, I converted these ratings to numbers; "a" to 4, "b" to 3, "c" to 2, "d" to 1, and "e" to 0. Therefore, a higher rating corresponds to a more "ideal" or higher fidelity implementation of active learning. Using the highest number for the highest fidelity rating makes the results easier to interpret. Third, to determine the overall IC Map rating for each teacher, the number ratings for each component were added up and divided by the possible total rating for each component (depending on number of classroom observations completed for each teacher) in order to determine an aggregate percentage score. Fourth, total aggregate percentage values could then be converted back into letter ratings; 0 - 20% for "e", 21 - 40% for "d", 41 - 60% for "c", 61 - 80% for "b", and 81 - 100% for "a". To help illustrate this conversion more clearly, see Table 7.8 that shows Afzal's results for Component 1: Classroom Environment, Organization, and Management. This component is made up of five dimensions and each dimension has a total possible value of 12 points (maximum of 4 points for each class observation). Accordingly, Afzal received an "a" rating for Component One. The same procedure was followed in order to determine a letter rating for the other six components.

**Table 7.8 IC Map checklist: Component one results for Afzal**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Class observation IC Map checklist result</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>(i) Joyful atmosphere</td>
<td>a (4)</td>
<td>b (3)</td>
</tr>
<tr>
<td>(ii) Teacher smiles and shows affection to students</td>
<td>a (4)</td>
<td>a (4)</td>
</tr>
<tr>
<td>(iii) Disciplined classroom, class rules, proper timing</td>
<td>a (4)</td>
<td>b (3)</td>
</tr>
<tr>
<td>(iv) Classroom organization</td>
<td>a (4)</td>
<td>b (3)</td>
</tr>
<tr>
<td>(v) Showcase student work</td>
<td>a (4)</td>
<td>a (4)</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>17</td>
</tr>
</tbody>
</table>
This four-step conversion process was completed for all 10 teachers in the study and the overall IC Map component variations can be found in Table 7.9 along with each teacher's corresponding years of experience and Levels of Use rating.

### Table 7.9 IC Map analysis with teacher Levels of Use and years of experience

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Years of Experience</th>
<th>IC Map Components</th>
<th>Levels of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Component Letter Ratings*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Muna</td>
<td>Novice (&lt; 2 years)</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Afzal</td>
<td>Novice (&lt; 2 years)</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>Fariha</td>
<td>Experienced (&gt; 5 years)</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>Rezwan</td>
<td>Intermediate (2 - 5 years)</td>
<td>b</td>
<td>b</td>
</tr>
<tr>
<td>Ritu</td>
<td>Experienced (&gt; 5 years)</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Tahsin</td>
<td>Novice (&lt; 2 years)</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>Anisa</td>
<td>Experienced (&gt; 5 years)</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Wasifah</td>
<td>Experienced (&gt; 5 years)</td>
<td>a</td>
<td>c</td>
</tr>
<tr>
<td>Bushra</td>
<td>Experienced (&gt; 5 years)</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Hana</td>
<td>Experienced (&gt; 5 years)</td>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

* Component letter ratings: (a = 81 - 100%), (b = 61 - 80%), (c = 41 - 60%), (d = 21 - 40%), (e = 0 - 20%)

To more easily display each teacher's fidelity rating for the seven innovation configuration components, the percentage values for each teacher and each component were compiled into a table (see Table 7.10). These ratings are based on individual teacher IC Map checklist aggregate results.
### Table 7.10  Teacher fidelity configurations

<table>
<thead>
<tr>
<th>Fidelity</th>
<th>Comp I</th>
<th>Comp II</th>
<th>Comp III</th>
<th>Comp IV</th>
<th>Comp V</th>
<th>Comp VI</th>
<th>Comp VII</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Tahsin</td>
<td>Tahsin</td>
<td>Ritu</td>
<td>Hana</td>
<td>Tahsin</td>
<td>Tahsin</td>
<td>Anisa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tahsin</td>
<td></td>
<td></td>
<td>Tahsin</td>
</tr>
<tr>
<td></td>
<td>Wasifa</td>
<td>Fariha</td>
<td>Hana</td>
<td>-</td>
<td>Hana</td>
<td>Hana</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Anisa</td>
<td>Afzal</td>
<td>Bushra</td>
<td>Fariha</td>
<td>Wasifa</td>
<td>Anisa</td>
<td>Fariha</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hana</td>
</tr>
<tr>
<td></td>
<td>Fariha</td>
<td>Hana</td>
<td>Tahsin</td>
<td>Ritu</td>
<td>Fariha</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Medium</td>
<td>Ritu</td>
<td>Muna</td>
<td>Wasifa</td>
<td>Rezwan</td>
<td>Afzal</td>
<td>-</td>
<td>Ritu</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wasifa</td>
</tr>
<tr>
<td></td>
<td>Hana</td>
<td>Anisa</td>
<td>Anisa</td>
<td>Wasifa</td>
<td>Anisa</td>
<td>Bushra</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Muna</td>
<td>Bushra</td>
<td>Afzal</td>
<td>Afzal</td>
<td>Bushra</td>
<td>Muna</td>
<td>Rezwan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rezwan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Afzal</td>
<td>-</td>
<td>Rezwan</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Afzal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Afzal</td>
<td>Muna</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Bushra</td>
<td>Ritu</td>
<td>Fariha</td>
<td>-</td>
<td>Ritu</td>
<td>Afzal</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rezwan</td>
<td>Wasifa</td>
<td>Muna</td>
<td>Muna</td>
<td>Muna</td>
<td>Rezwan</td>
<td>-</td>
</tr>
</tbody>
</table>

Judging by the results shown in Table 7.9, it appears that lower fidelity ICs are found with teachers at a Mechanical (LoU III) levels of use and a combination of Mechanical and Routine (LoU III/IVA) levels of use. Among teachers at a Routine (LoU IVA) level of use or a combination of Routine and Refinement (LoU IVA/IVB) levels of use, only two teachers, Hana (LoU IVA/IVB) and Anisa (LoU IVA) had corresponding medium to high fidelity ICs. Interestingly, among the six teachers with medium to high fidelity ratings, five teachers had more than five years of experience teaching. Whereas, two of the three teachers with less than two years of teaching experience both had low to medium fidelity ratings. These findings seem to suggest that implementing higher fidelity configurations of active learning requires more
expertise and skill than will be found among teachers with less than two years of implementation experience.

It is important to note that caution is needed in attributing any relationships presented in this analysis and interpretation of information from the SoC, LoU, and IC Map findings. To date, there has been no formal study of the reliability of relationship findings based on IC Map data, teachers' LoU, and SoC. Realistically, this sample of 10 teachers is too small to be used as a basis for generalized inference about the effects of fidelity on teachers' use of active learning methods.

An alternative approach to determine if relationships exist between the three CBAM instruments used in this study involves focusing on what Fullan, Bennett, and Rolheiser-Bennett (1990), describe as the teachers' instructional skills and instructional strategies in the classroom. By concentrating the focus of analysis on these two major dimensions of a teacher's classroom practice it is hoped that unanticipated correlations between the SoC data, LoU data, and IC Map findings will emerge.

A teacher's instructional skills generally consist of a stock of skills and less complex teacher behaviours in a teacher's repertoire such as asking open-ended questions, including supplementary materials, and differentiating support for students. The key components and corresponding dimensions from the Innovation Configuration Map most closely associated with a teacher's instructional skills include: Component One (Classroom Environment, Organization, Management), Component Two (Teacher Uses Supplementary Materials), Component Three (Teacher Uses an Active Learning Approach), Component Four (Teacher Differentiates Support for Students), Component Six (Teacher Actively Engages Students), and Component Seven (Teacher Competency). Across these six components it was found that teachers predominantly expressed Stage 2 Personal (Self) and Stage 3 Management (Task) concerns. The emphasis on Self and Task concerns indicate that many of the teachers are still focused on themselves or on the act of teaching rather than on the needs of their students. In terms of teachers' LoU across these six components, the one teacher judged at a Mechanical (LoU III) level of use mainly had an IC fidelity rating of "a" and "b". Teachers at a combined Mechanical and Routine (III/IVA) LoU predominantly had an "a" rating across components. Teachers at a Routine (LoU IVA) level of use demonstrated variable ratings between "a" and "c". Lastly, teachers at a Routine and Refinement (LoU IVA/IVB) levels of use had generally high fidelity or "a" ratings across the four components. The high variability of these findings appear to suggest that a teacher's LoU
rating is not strongly related to his or her ability or success implementing various instructional skills.

The second approach for investigating relationships between the CBAM instruments focuses on teachers' instructional strategies, which Fullan, Bennett, and Rolheiser-Bennett (1990) define as more complex teaching processes that are based on models of learning. According to the IC Map findings, the key component and dimension that typifies an instructional strategy is Component Five (Teacher Uses Cooperative Learning / Group Work). Among the 10 teachers in the study, most expressed Stage 4 Consequence concerns related to their ability to encourage worthwhile cooperative learning opportunities for students. Regarding the teachers' LoU, there was a relatively equal split between "a" and "b" IC fidelity ratings across teachers. The high degree of consistency in teacher's SoC and LoU ratings for this particular component appears to add strength to the argument that the teachers' professional orientation puts more emphasis on implementing the program they were trained to do, and doing it right, rather than trying to be creative or adapting the lessons independently.

Chapter summary

Each IC Map represents the patterns of practice across all pedagogical innovation components that attempt to describe how individual teachers are implementing active learning. Based on these findings, a total of 702 teacher and student behaviours were assessed in 10 different school classrooms. Seven teachers were observed three times, two teachers were observed twice, and one teacher was observed once. Each class observation lasted for a full morning shift and efforts were made to ensure that a mix of different subjects including math, Bengali reading and writing, English, and environmental science classes were observed.

It should be noted that teachers do not regularly implement all components of active learning in every lesson. Despite this limitation, an analysis of dimensions and variations among the seven key components indicates that the majority (64%) of teachers were judged to be 'ideal' implementers of active learning according to the definitions provided in the IC Map. Despite the high proportion of teachers observed using active learning methods appropriately, there are some areas where teachers can show improvement in their ability to adapt and implement active learning practices in their classrooms. A large proportion of teachers were judged as less than ideal in their abilities to use supplementary materials and facilitate worthwhile cooperative and group learning experiences for students. The key strengths that should enable these teachers to
continue to improve include their ability to create a happy and healthy learning environment for their students as well as their optimistic attitude, commitment, and professional competency as primary school teachers. In the next chapter, I analyze qualitative interview data based on the social constructivist ideas that teachers construct new knowledge based on past experiences and their current teaching practice.
Chapter 8: Teacher Understanding of the Concept and Practice of Active Learning

A second core theoretical component informing this study relates to and builds upon CBAM's inadequacy for dealing in-depth with the social constructivist side of teacher change. This study is partially grounded in the assumption that past and present schooling experiences and social interaction amongst teachers shape their understanding of active learning methods and in turn their teaching practice. Therefore, I draw upon social constructivist theory as a tool for analysis to better understand how teachers developed their practice and responded to the NGO's active learning mandate, which in turn has implications for the efficacy of the NGO's ongoing professional development efforts.

This chapter is organized into two parts. In the first section, qualitative interview data is analyzed based on the social constructivist idea that individuals construct or develop new knowledge based on the vast range of past experiences, interactions, knowledge, and beliefs (Richardson, 1997; Beck & Kosnik, 2006). In the second section, two additional social constructivist principles are used to analyze qualitative interview data addressing the teachers' current teaching practice. The first principle or assumption is that experience shapes a teachers' knowledge (Beck & Kosnik, 2006). The second social constructivist principle used to analyze the interview data in this section contends that social interactions contribute to the construction of knowledge (Beck & Kosnik, 2006).

My rationale for incorporating principles of social constructivism for the purpose of data analysis is that it contributes to our understanding of why some of the sampled teachers' behaviours and progression of use of active learning methods was more advanced than others. This knowledge has significant implications for those responsible for teachers' professional development. Just providing professional development without taking into consideration insights from a social constructivist lens may result in professional development being less relevant and less effective for teachers working with the NGO's primary education program. Furthermore, as a tool for data analysis, only select aspects of social constructivism were chosen that could be supported by the interview data. Since I used a grounded theory approach, data was not limited to that collected during interviews. My analysis and interpretation of the data periodically reflected the analysis of class observation data along with my understanding and experience working in
Bangladesh and spending considerable time with the participants of my study to better illuminate participants' experiences (Punch 2009).

**Teachers' prior experiences shape their understanding and use of active learning**

Generally, those responsible for designing pedagogical innovations neglect the possibility that a teacher’s past experiences might be of value in the pedagogical change process (Bailey, 2000; Beck & Kosnik, 2006). The challenge of implementing an unfamiliar pedagogical approach like active learning, which is often difficult to define, is not lost on the participants in my study. None of the sampled teachers reported having any knowledge or personal experience with active learning, given their definition and understanding of active learning principles, prior to joining the NGO's primary education program. According to constructivists, this void in teachers' past educational experiences places them at a disadvantage when attempting to adopt more child-centred teaching methods. Similarly, Darling-Hammond (2006) stated, "It is impossible to teach people how to teach powerfully by asking them to imagine what they have never seen or to suggest they 'do the opposite' of what they have observed in the classroom" (p. 308). Based on Dewey's (1938) theory of experience, prior experiences profoundly shape present and future experiences. Consequently, I was interested to better understand the nature of my participants' experiences in school prior to becoming teachers at the NGO. According to Lortie (1975), a person's early schooling experience can be described as an "apprenticeship of observation" and contends that it has a major impact on teachers' worldviews about quality teaching and learning. However, if not challenged, these formative school experiences can have a lasting and often limiting affect on teachers bound by a relatively narrow view of schooling and what it takes to be a teacher. Many studies conducted in developed countries argue that teachers are likely to view their early schooling experiences in a positive light and the "apprenticeship of observation" consequently remains one of the more challenging limitations to overcome (Darling-Hammond, 2006; Lortie, 1975). To this end, Beattie (2006) suggests teachers' experiences of school – and the beliefs about schooling that are derived from these experiences – should be brought to the surface and critically examined.

For the Bangladeshi teachers involved in my study, early schooling experiences were generally viewed much more negatively. As such, I was interested to try and determine if the "apprenticeship of observation" described by Lortie (1975) has relevance, at least for the 10
teachers in my study, in the context of schooling in rural northeast Bangladesh. In this section, I explore and analyze teachers’ experiences during their time in school in an effort to better understand the relationship between a teacher's personal practical knowledge or experience of schooling and their current teaching practice.

To explore issues around social constructivist theories of learning, I asked the teachers if they had any previous experience or knowledge about active learning teaching methods before joining the NGO's primary education program. Findings from the interview data indicate that none of the teachers had any prior knowledge or personal experience with active learning teaching methods. For example, Anisa said: "After completion of my intermediate (HSC) exam, I joined [the NGO], so I did not have any chance to learn about it" (05/07/2010). Despite participants contention that they had no prior experience with active learning methods, I wondered if they were only judging an "active learning" classroom confined within the parameters defined by the NGO and their current professional teaching experiences.

In an effort to better understand my participants' prior schooling experiences, I also asked them to describe the style of teaching and learning they experienced as students. My objective was to look for examples of teaching and learning that might not necessarily match with the NGO's definition of "active learning" but still exhibit some characteristics of child-centred, activity-based learning. Findings from my analysis of the interview data indicate that the majority of the teachers had experienced very few child-centred or activity-based learning experiences that they could now incorporate into their own technical repertoire of active learning strategies. For example, Hana described her experiences in grades two and three stating: "At that time, there were two hundred to three hundred students in one class. Teachers only delivered lectures and we used to listen only. They [teachers] used to cane [hit] us if we didn't do our homework" (13/06/2010). Ritu also appeared to have found little value from her formative schooling experiences, stating that attending school brought about more feelings of fear than feelings of accomplishment. She described how one of her teachers delivered lessons in such a way that provided little chance for students to meaningfully engage in the lessons beyond choral recitation. Our teacher told us to count from one to ten. We used to count all together. When our teacher told us to write alphabets then some of us could do it and many of us could not. They used to give us home task and told us to do it at home. If we could not do the home
task they used to cane [hit] us or banish us on next day. For this reason we used to do our studies with fear (07/07/2010).

Another common schooling experience described by many of the participants was the lack of individual support provided by teachers. Both Muna and Bushra described teacher-centred classrooms in which lessons were predominantly taught using only the lecture method and little effort was made to support weaker students in class. According to Muna,

[they] used to tell us to read some pages of the textbook or tell us to answer the questions from the textbook. They were not much supportive to the weaker students. All the weak students were 'backbenchers'. The teachers did not feel that they needed attention (17/08/10).

Abadzi (2006) suggests that the high degree of differentiated support provided to students suggests that teachers today, including those in my study, may have learned from their own schooling experiences that only a few students can meet the required standards. As a result, teachers today may very well be consciously and/or subconsciously teaching only to a select few students and expect the lower achieving students to just drop out or only complete their primary education.

Without a supportive classroom environment for learning, many of the participants described completing most of their lessons after school and generally on their own or with help from their families. It appears that there was little expectation that students would accomplish much work while at school. This may have been partly a consequence of very large class sizes and partly a result of teachers who provided minimal individual support during class time. For example, Hana mentioned that because there were so many students in class, students understood that their teachers were unlikely to provide individual support: "Our teachers used to deliver lessons for a mass audience. I had to go for private tuition. There was no expectation that we were going to complete our lessons at school" (13/06/2010).

In my analysis of the interview data I did not find any clear examples of "active learning" occurring during the participants early schooling experiences. None of the teachers mentioned any instances of supportive dialogue between the teacher and students, cooperative learning or group work activities, use of supplementary materials, or activities that encouraged the practical application of new concepts during class time. For example, Fariha described how during a typical lesson her primary school teachers emphasized the memorization of facts and/or drills
related to the learning of the Bengali and English alphabet and math equations. Fariha stated, "Our Sir used to come to class and give us a lesson and told us to read. Sometimes he used to write [Bengali letters] on the blackboard “O”, “Aa”, “Ka”, “Kh”. Then at twelve o'clock he used to take us out to the field and told us to count 1, 2, 3" (06/07/2010).

As participants reflected upon their student-life experiences and despite the predominant sentiment that most of their teachers had little or no impact or influence on their present pedagogical practice, there were some participants who reflected on their time in primary school more positively. For example, despite Fariha's description of a lesson focused on drills and the memorization of facts, she also mentioned that she enjoyed going to school: "I liked to go to school, we all come to school together, me and my siblings...Several times there were celebrations for different days like independence day, I really enjoyed that" (06/07/2010). It appears that for some teachers like Fariha, the opportunity to simply go to school, regardless of whether or not school provided worthwhile learning experiences, may have ultimately had a positive influence on her attitude about teaching and her practice today. Just having the opportunity to go to school was an exceptional opportunity or privilege rather than the norm for many of the participants. The learning experiences accrued while at school may have provided few opportunities to actively engage in learning but it was still an opportunity to get a break from chores at home and spend time with friends and siblings, while hopefully learning to read and do math as well. According to Beck and Kosnik (2006), the approach whereby teachers are asked to reflect on their student-life experiences and relate them to their views on education is constructivist in several ways.

It acknowledges that new ideas must be based on old ones, and hence learning to teach is a gradual process rather than a sudden initiation. It recognizes that knowledge must make sense in terms of a person's whole way of life: one cannot separate the professional from the personal, the academic from the everyday. And it accepts the contribution of one's rich prior experience to knowing how to teach (Beck & Kosnik, 2006, p. 15).

Ritu also provided an example of a positive prior schooling experience that was not particularly related to her professional practice as much as it had to do with her decision to become a teacher. According to Ritu, one of her primary school teachers motivated and actively supported her upon completion of primary school to continue on to secondary school:
When I was in grade five, I sat for the scholarship examination and I secured sixth position among the all students of the Upazila. I received an award [scholarship] from the government. At that time my Didi Moni [class teacher] told me, 'You should study, if you study then you can be a teacher like me'... My Didi Moni sent a letter to the high school and requested them to enrol me and also informed them about my situation. Afterwards, one of my high school teachers told my mother 'You only send her to school and we will provide all the educational materials to her including textbooks' (07/07/2010).

The fact that the sample of teachers participating in my study managed to complete primary school and eventually graduate with a Secondary School Certificate or a Higher Secondary School Certificate is a significant accomplishment in itself. For many of my participants, being a "good student" was clearly difficult and likely fraught with many of the same obstacles facing children attending the NGO school today. Yet, from a social constructivist perspective it is interesting to note that many of the participants in my study, like Ritu, described how a particular teacher encouraged them to stay in school or a family member supported them at home with their studies.

Many of the teachers with positive prior experiences possibly cling to the preconception that "good" teaching and learning mainly consists of rather simple and mechanistic transfers of information from the textbook and teacher to students who acquired the information through listening and reading on their own and memorization of facts (Richardson, 1996). The attitude among some teachers appears to reflect the question posed to me by Wasifa during one of my class observations that the style of teaching and learning she encountered as a student "was good enough for me so why isn't it good enough for my students?" (25/07/2010) According to Hatton (1987), this notion of "competence" in teachers' work situations is based on teacher experience of what works in a particular situation (p. 57). Furthermore, the majority of examples provided by participants about their prior schooling experiences are conceptions of a "transmission-oriented" form of teaching, which involves top-down approaches which present best practices for teachers to understand and imitate in their teaching (Cochran-Smith & Demers, 2008, p. 1011; Crandall, 2000). The work situation is one in which pragmatic concerns such as completing the lessons on time and conducting the necessary student assessments appear to take precedence over pedagogic concerns (Hatton, 1987). Consequently, participants' past educational experiences appear to have relevance in defining how the teachers' shape the way they teach today as well as influencing the
way they perceive their own students' learning needs. Because of their prior experiences and relative success as students and eventually as teachers, their ability and/or willingness to adopt more active and inquiry-based teaching strategies into their own practice is likely quite difficult because it is so inherently different from the way they were taught and how they learned as students.

According to Beck and Kosnik (2006), ordinary teachers are constantly reinterpreting existing concepts and principles resulting in changes in pedagogical practice. Despite the overwhelmingly unconstructive student-life experiences of many of the teachers in the study, a few teachers transformed their negative schooling experiences into a commitment to be better teachers for their students than their teachers were for them. The ability of some teachers to transform their negative schooling experiences into a positive motivating force supports the idea that experiences are not static but dynamic, in that they move humans in positive or negative directions (Fletcher, 2011). Since experiences are described as moving forces, Dewey (1938) explains that they exist along a continuum, a notion summarized in the principle of continuity of experiences: "every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after" (p. 35). According to the principle of continuity of experience, the quality of an experience affects the present and future, and the quality acts in different ways on the individual (Fletcher, 2011). In this way, a teacher's negative experiences as a student can impact upon their commitment to be a better teacher today. Afzal sums up this sentiment about teacher change.

Certainly they have taught us. The way they taught us was different than the present day and it will also be different in the future. It should not be the same teaching style in all ages. The people are changing, the environment is changing, the system is changing (12/06/2010).

Where there once was little expectation that former students like Hana and Anisa would accomplish much or learn much at school, somehow they persevered, became teachers, and embraced the attitude that teaching is, according to Hana, "a noble and respectable profession" (13/06/2010). Despite their many negative childhood experiences as learners, today the teachers' have a more holistic outlook about their students. They are imbued with a sense of optimism and expectation. For example, Wasifa stated that upon completion of elementary school, her students "should achieve reading skills, speaking skills, and achieve confidence" (15/06/2010). Afzal also
spoke of the positive social impact of attending school and how an education will provide the necessary skills for his students to "benefit the progress of the country" by becoming "moral and good citizens" (12/06/2010).

Although many of the teachers' early schooling experiences were less than positive, it is interesting to note that all the participants in my study mentioned having an influential person in their lives who placed a great deal of importance on education. Participants like Hana explained that her father encouraged and supported her to become a teacher from an early age. According to Hana, "My father always put emphasis on my education. My mother died when I was four or five years old. He provided us education to become a 'somebody' and encouraged me to be a teacher" (13/06/2010). Based on my analysis of the interview data, it appears that teacher's positive worldviews about teaching and schooling were influenced by a combination of factors most notably the influential role and encouragement provided by family members.

**Teachers' current experiences shape their understanding and use of active learning**

Notably, when teachers are employed by the NGO they are initially required to participate in an intensive month-long pre-service teacher development program. During this time, they are introduced to a variety of theories, teaching skills, and teaching strategies related to active learning and child-centred pedagogy. New teachers are quickly expected to adhere to the NGO's educational philosophy and it was noted from the participants' responses on the open-ended concerns statements that many novice teachers are very knowledgeable and capable of providing detailed descriptions about the active learning method. In an effort to better understand how the teachers' professional experiences, beyond those experienced during the initial teaching training, shape their understanding and use of active learning methods, two key social constructivist assumptions are acknowledged including: (a) knowledge is shaped by experience, and (b) knowledge is constructed through social interactions (Beck & Kosnik, 2006). In the following section, data is primarily drawn from the second of three interviews with teachers as well as from anecdotal evidence collected during class observations and linked to the above assumptions.

**Experience shapes a teachers' knowledge**

A key constructivist principle or assumption is that teachers' experiences contribute to their ability not only to reinterpret existing concepts and principles, but to develop new ones, which shape how they think about and fulfill their roles as classroom teachers (Beck & Kosnik,
Recognizing that the sample of teachers in my study had no prior experience with active learning methods during their years as students, their ability to quickly learn about child-centred learning and activity-based teaching practices is notable. An objective of the study is to try to better understand how their current employment with the NGO and the subsequent teacher training and classroom teaching experiences shape their implementation and use of active learning methods in the classroom. To answer this question, participants were asked a series of questions focusing on their current teaching practice (see Appendix 17). In terms of a timeframe, teachers confided that proficient use of the active learning approach took from as little as two months up to one year. For example, Rezwan stated, "To become a good teacher the individual has to be competent...To come to this position I had to spend some time. To take full mastery on teaching it took over six months" (10/06/2010).

Among the more experienced teachers in the study, Hana described herself as an "expert" user of active learning methods but acknowledged that she was still developing her teaching skills and remarked that there was still much more to learn.

I think of myself as an expert. The way I have interacted with the children they always come to me if they face any sort of trouble. I am too friendly with the children and all children like me. I think I am able to reach them...they seek my support and want to learn from me (08/06/2010).

Despite Hana's lengthy teaching experience and confidence in the classroom, she also readily acknowledged the importance of her ongoing professional development and the need to continuously improve. She pointed out, "The training we have after every three months is the best. It is an opportunity for us to know more about the subject matter which we feel a little weakness" (08/06/2010).

Interestingly, Rezwan and Hana's comments about the duration of time it took to learn to teach well supports Rosenholtz's (1989) distinction between teachers in "stuck" schools who said they had mastered all they needed to know to be good teachers in just a few years, and teachers in "moving schools" who believed ongoing learning or continuous professional development was integral to their professional identity and work as teachers. In Rezwan's case, his assertion that he had mastered the use of active learning methods possibly suggests that his use of active learning methods was "stuck" and he was unlikely seeking new experiences that could further shape and/or improve his teaching practice. To test this hypothesis, I looked at my CBAM data,
specifically the Innovation Configuration Map findings I developed based my observations of Rezwan's class. From the analyzed data I noted that his fidelity ratings for implementing active learning methods was ranked as "low" to "medium" for each of the seven active learning components (see Table 7.10). On the other hand, Hana's acknowledgement of the benefits of ongoing teacher training suggests that her classroom and approach to ongoing teacher development is typical of a "moving" school. Again, I looked at my CBAM data and the Innovation Configuration Map findings based on my observation of Hana's class and found that her commitment to continuously improve her practice was supported by her relatively high fidelity rating in which she was ranked between "medium" to "high" for each of the seven active learning components (see Table 7.10). According to Beck and Kosnik (2006), in the process of constructing our knowledge, we may eventually modify concepts and ideas in order to make them "work" to better suit our needs and circumstances. Based on my analysis of the interview data and my Innovation Configuration Map data, there appears to be a strong correlation between those teachers who participated in teacher training, actively sought out new ideas about active learning methods, and embraced the value of continuous improvement, with the level of fidelity with which they implemented active learning practices in the classroom.

To further investigate how current teaching and teacher training experiences have influenced my participants' understanding and use of active learning methods, during the second round of semi-structured interviews I asked for my participants' opinions about the appropriateness of the active learning approach (see Appendix 17). The analysis of interview data indicates that teachers with different levels of experience and pedagogical knowledge had different interpretations about the appropriateness of using active learning methods in the classroom. Among novice teachers (those with less than two years of experience) there was consensus that active learning was suitable for all students from preschool through grade five. For example, Muna stated,

I think the active learning method is appropriate for all classes because all the children in the class are not intelligent, some of them are intelligent and some them are weak...However, some of the weak students can't even recognize alphabets, words or sentences even in grade five. So, I think active learning is needed in all grades (17/07/2010).
When the same question was posed to experienced teachers (those with more than five years of experience) there was a split between those who believed active learning was appropriate for all students and all grades compared with teachers who believed active learning was more suitable for students in preschool to grade two as well as low achievers.

In some cases it is effective in some cases not. To teach addition and subtraction in grade five we don't need to use [supplementary] materials to make the student understand the lesson. It [active learning] is appropriate for the lower classes but not for the all purposes (14/06/2010).

It appears that as Bushra gained experience in the classroom she had more opportunities to reflect on the implications of her teaching and the outcomes of her efforts implementing an active learning approach. In contrast to novice teachers who seemed to be somewhat less critical in their assessment of active learning, teachers with more experience were able to apply their knowledge and were more selective users of active learning methods. More experienced practitioners like Bushra, acknowledge that there are strengths and weaknesses with the active learning method, depending on the ability level of the student. For example, Bushra stated,

...it [active learning] is not appropriate for all children only for some of them. It is not needed for the bright children. However, we have maximum weak students, this is why we need to use this (14/06/2010).

Based on my analysis of the interview data, it appears that the more experienced teachers were more adept at applying their knowledge and experience in order to modify their lessons to best match what they deemed to be the most appropriate instructional strategies or supplementary materials that suited the ability level and needs of individual students.

**Social interactions contribute to the construction of knowledge**

A second social constructivist principle emphasizes the importance of dialogue with others in knowledge construction (Beck & Kosnik, 2006). Within social constructivist theory there is a recognition and value place upon the "constellation of contextual factors in school and community that help give shape to the curriculum (Beck & Kosnik, 2006; Jackson, 1992, p. 428). Efforts within the NGO to continuously support teachers and stimulate their development and competency in the classroom included a combination of opportunities for learning including in-class support provided by supervisors and in-service support provided through regular teaching
training. Darling-Hammond (1996) argues that the quality of teaching depends not only on the qualities of those who enter and stay, but also on workplace factors. Teachers who feel enabled to succeed with students are more committed and effective than those who feel unsupported in their learning and in their practice (McLaughlin & Talbert, 1993; Rosenholtz, 1989). She also mentions that those who have access to teacher networks, enriched professional roles, and collegial work feel more efficacious in gaining the knowledge they need to meet the needs of their students and more positive about staying in the profession. (Darling-Hammond, 1996). A major challenge for the NGO has been to try and figure out ways to structure the support system for change in ways that would actually make a difference to improving the quality of teaching and learning. The NGO aspired to tap into and respond to teachers' pedagogical and developmental needs through regular school visits by supervisors, trainers, and members of the curriculum and materials development team.

**Role of supervisors**

According to Rosenholtz (1989), teachers who felt supported in their own ongoing learning and classroom practice were more committed and effective than teachers who did not receive such support and guidance. During interviews, many participants repeatedly regarded their supervisor as the most accessible support person within the NGO and the one who most frequently helped them fulfill their day-to-day classroom responsibilities, while also providing classroom-based mentoring and professional development. The hierarchical relationship between teachers and supervisors common in schools in the developed world was not so apparent at the NGO. The study participants often referred to their supervisor as an important member of the NGO "family". The supervisors I encountered during my school visits were all in the early twenties, some had originally been teachers with the NGO and promoted, others were hired with no prior experience with the NGO's primary education program but did have Bachelor or Masters degrees. Generally, a supervisor would try to visit each teacher between one and four times each week. A supervisor's responsibilities typically entailed checking weekly lesson plans, providing guidance on student assessment, monitoring the delivery of lessons, improving instruction, and trying to increase teacher satisfaction.

To illustrate the important role of supervisors, one of my participants described a situation when she was a novice teacher struggling to properly implement active learning in her classroom.
According to Fariha, when the NGO first introduced the active learning method as its new model for teaching, a key component of the approach involved organizing students into three groups. One group was called a "focus group" and the other two were "non-focus groups". The teacher was expected to provide direct support to the focus group while the non-focus groups were expected to work independently on a different subject after receiving instructions from the teacher. At that time, Fariha was unfamiliar with this style of group-work, despite having attended the initial teacher training course. According to Fariha, her supervisor came to her classroom and explained and modeled how to implement the group work strategy. Reflecting on that particular visit, Fariha stated that

"[a]fter hearing about the incident he [supervisor] came to my school and conducted one lesson and let me observe the class and practically explained the whole matter to me involving the children of my class. Actually I understood from [the supervisor's] class otherwise I did not understand anything about focus and non-focus groups from the training (06/07/2010)."

In terms of her current level of development, Fariha stated "I have advanced so far only because of the support from the supervisor" (06/07/2010). The above example illustrates an effective mentoring strategy involving the demonstration of a lesson by the supervisor, followed by a debriefing session between the teacher and supervisor. This type of supervisory support helped the teacher construct a solid theoretical and practical understanding of the NGO's approach to group-work that appears to have been somewhat lacking in the teacher training courses provided at the regional or central office sites.

From my analysis of interview data, there appears to be a degree of collegiality between some teachers and supervisors. For example, Anisa described a process of experimenting with her lessons with the support and cooperation of her supervisor. While describing a creative writing lesson, Anisa pointed out that her efforts to adapt the lesson to better match the students' ability levels were known and encouraged by her supervisor.

"Yes, I have been encouraged to change my lesson. Today's lesson that I am delivering; it is basically based on words or alphabets. I have changed the level [of the lesson] on my own and made the focus on writing in sentences. When my supervisor sees this type of change he also appreciates it (05/07/2010)."
While most teachers had positive impressions of the role of their supervisor, there was one experienced teacher who mentioned that her supervisor was new and lacked experience with active learning methods. Ritu, who has been teaching with the NGO for more than 15 years commented that

[At present the supervisor is new. There is no point to ask support from him. It will take at least three months for him to understand the active learning method afterward he will be alert. At present he is not able to observe all the bits of a lesson. Many times I tell him to sign the official documents and tell him the procedure of the class observation (07/07/2010).]

In this situation, it appears that roles were somewhat reversed and it was the experienced teacher who provided guidance and support for the supervisor. Concern about some supervisors was not limited just to teachers. According to Shafiqah, a member of the training division from central office,

[Some supervisors understand well what needs to be done and are good trainers for the teachers that work with them but some don't understand what we do here and thus mislead the teachers. They give no support to the teacher and the teacher is usually kept under unnecessary pressure (19/08/2010).]

A major obstacle facing the NGO seems to be their ability to ensure that supervisors can continue to build the necessary rapport and trust with teachers. As the NGO continues to scale up its primary education program and as more schools are built and new teachers are hired, the need to provide effective supervisory support will also increase. What is unclear is the strategy the NGO will employ to ensure that this all important support structure for teachers continues to operate effectively. Perhaps, experienced teachers who are working at the NGO can be promoted to supervisory roles. One challenge for the NGO will be to find both male and female teachers who are able to provide the necessary leadership, role modeling, and direct assistance to teachers and schools while accepting the challenges and difficulties inherent with traveling to a group of remote and often hard-to-reach schools each week.

Overall, it appeared that the technical, and at times, emotional support provided by supervisors was a key feature in the continuous professional development of teachers. The familiarity that experienced supervisors had with each teacher and school enhanced the impact they were able to have on a teacher's ability to properly implement active learning methods.
Challenges and successes experienced by a teacher were shared with a supervisor, who in turn transmitted these experiences vertically within the organization such that trainers and programmers had a greater awareness, understanding, and empathy for the role, responsibility, and daily challenges facing class teachers.

**Role of learning communities**

A second dimension associated with the principle that learning is a social endeavour focuses on the role of "learning communities" created within educational institutions. In terms of helping foster a climate of change, Darling-Hammond (1996), Hall and Hord (2006), and McLaughlin and Talbert (1993) all agree that when teachers are given the chance to participate in collaborative inquiry they are better able to develop and share a body of wisdom that is an outcome of their experience. During interviews, most of my participants spoke about strong cooperation and the sharing of ideas, problems, and challenges among teachers and their respective principals at school. It appears that principals within the NGO's primary education program play an important role in providing ongoing support, monitoring, and daily problem-solving while leaving the responsibility of teacher evaluations to the supervisors. As a result, there appeared to be a lot of teamwork, openness, and mutual trust among staff in most of the sampled schools. From my observations of staff during school visits, I noted that principals tended to have a collegial relationship with teachers that appeared to help promote more effective teaching in the classroom. For example, when Tahsin, who is a novice teacher at the NGO, was asked about his relationship with his principal, he spoke about working collaboratively in an environment where everyone is equal and shares.

We have a very good understanding among us. In case of teaching, if I encounter any new words that I don't know I ask other teachers about it. I tell them, "I don't know the meaning of this word, if you know the meaning please help me." They help me out on those occasions...From my Head Teacher [school principal] I received a lot of help regarding class matters...Besides I also receive support regarding official matters. For example, while we have to submit official reports, he helps me out with his guidance. He also gives us early information when we have to go to the monthly follow-up meetings. He helped me out with several matters that are necessary to perform my job (21/07/2010).
When I compared Tahsin's comments from his interview with findings from my observation of his classroom teaching and the corresponding CBAM-based Innovation Configuration Map ratings, I noticed that he had the highest fidelity rating for five of the seven active learning components (see Table 7.10). It appears that the collegial support Tahsin received from the other teachers and his school principal has had a considerable impact on his understanding and implementation of active learning methods.

Within the sampled schools, it appears that a collegial relationship exists among most teachers. Despite having a limited amount of time to talk with colleagues during the school day, the majority of teachers were able to find five or ten minutes at the beginning of the day or between the morning and afternoon shifts to ask other teachers for advice and support. In one notable example of a teacher's resourcefulness, Anisa mentioned that on occasion, she would use her cell phone to call a more experienced colleague from one of the NGO's school located nearby. According to Anisa, "During school time, if we face any challenge which needs an immediate solution...we can talk with other teachers over phone" (05/07/2010). Other teachers in my study frequently spoke about their willingness to accept feedback from colleagues, trainers, and supervisors. They also spoke about continuously working towards improving their teaching practice in the classroom through a process of sharing ideas as well as developing additional learning materials for the benefit of everyone in the school.

Unfortunately, not all teachers are able to benefit from the collaboration that often exists among teachers in most of the NGO's schools. For example, Muna was a recently hired teacher posted to one of the NGO's newest schools located in a relatively remote and flood-prone region (see Photo 8.1).
With relatively low student enrolment at her school at the time of my study, Muna was working alone at her school. Despite receiving frequent school visits and support from her supervisor, Muna appeared to struggle with the isolation - both geographical and professional. Without other teachers to talk to and ask for advice during the school day, Muna could only rely on her teacher resource guidebooks or wait until her supervisor visited or until her next monthly in-service meeting. The lack of a learning community at Muna's school appeared to have had a somewhat detrimental effect on her proficiency in implementing an active learning methodology in her classroom. According to my analysis of an earlier focused-interview with Muna that used CBAM's Level of Use branching interview format, her LoU ratings were lowest among all participants in the study (see Chapter 6). It seems that the limited opportunities available to Muna to discuss her teaching practice with others not only hindered her teaching performance but also limited her ability to examine and reflect on her own use of active learning methods and make plans that might allow her to anticipate possible and/or needed steps towards improving her overall practice.
Role of teacher training courses

Another key attribute contributing toward teachers' ongoing professional development was a culture of collective learning fostered through the NGO's various teacher training courses. The two most popular types of training provided by the NGO were "cluster training", which took place each month and consisted of teachers from a particular geographic area or "cluster" of schools coming together for a day of training, and "subject-based training", which took place at the NGO's central office four times per year for two or three days at a time. The foci of many of the in-service refresher training courses were determined by classroom observations, analyses of student achievement, and ongoing needs-assessment of teachers to identify specific and contextually-relevant requirements for in-service assistance to support teachers. According to Azom, one of the lead trainers,

[w]hen we develop the training manuals, we think about the teachers' levels and look at the curriculum. We design our training manual according to the teachers' needs. We try to conduct [training] sessions by modeling active learning methods like group work ... you should see the same activities in the classroom (21/08/2010).

Both types of training offered teachers a unique opportunity to come together for their own professional development. According to Rosenholtz (1989), "Bringing together teachers from different schools invites broader views of instructional practice, and with them the possibility of infusing new knowledge into each school via teacher leaders" (p. 192). In particular, it was my goal to analyze how the training courses were shaping teachers' understanding of active learning methods.

During cluster and subject-based training, the trainers from central office and teachers from various schools worked and studied together or as a learning community. For many teachers, the training sessions were an important opportunity to interact with teachers from other schools to discuss current problems and challenges they were facing in the classroom and share ideas and personal experiences. By enabling and supporting these opportunities to collaborate and share with other teachers, the policy planners from the regional and central offices exhibited an appreciation and respect for the knowledge and skills of local classroom teachers and an understanding that their teachers may be better situated to interpret and adapt pedagogical policies to maximize positive student learning outcomes. Furthermore, providing space for teachers to share teaching strategies with colleagues appeared to help nurture a more collective
approach to professional development. According to Anisa, "In the subject-based training our
teachers can contribute from their own knowledge and experiences and we can learn something
different than what the trainers teach us" (05/07/2010). Training sessions also gave teachers the
opportunity to experiment with new instructional techniques and broaden their teaching repertoire
related to the use of active learning methods. During my interview with Bushra, she mentioned
that activities during training such as role-play have been particularly helpful.

We can share our different understandings about different subjects with other teachers.

We sometimes do role play where one teacher takes the class and we observe and I can
learn from observing his/her class (14/06/2010).

This type of collaborative work is grounded in what Louis and Kruse (1995) call reflective
dialogue, whereby teachers and other support staff conduct conversations about students,
teaching and learning, and identify related issues and challenges. Judging by the above comments
provided by those teachers sampled in the study, it appears that the opportunities to share ideas
and experiences during training had a positive impact on their ability to implement active
learning methods in the classroom.

During the interviews with teachers, it was interesting to note that there was consensus
among about the necessity for subject-based training. This need among teachers to improve their
subject-based knowledge appears to have had an impact on their teaching competency in the
classroom. Based on my repeated class observations and subsequent analysis of IC Map findings,
I noted that during only 69% of the class observations were teachers able to consistently
demonstrate mastery of the various subjects taught (see Table 7.7). Clearly, there was room for
improvement among teachers, necessitating further subject-based teacher training by the NGO.

An indirect but no less important outcome of the in-service training appeared to be the
development of a shared identity and sense of community among all participants. According to
Beck and Kosnik (2006), the opportunities that in-service training provides for teachers to
interact with peers can enhance individual understanding about teaching and ultimately bring
about positive educational changes in the classroom. For most teachers, attending subject-based
training at the NGO's head office was a significant event. Many of the teachers are young,
unmarried Muslim women and the opportunity to spend two or three days away from their homes
and families and study, eat, and sleep among other teachers was an exciting and novel
opportunity. For some of the more senior teachers, it was an opportunity to spend time away from
household responsibilities and take on the role of mentor providing professional and emotional support for many of the younger and less experienced teachers also attending training. To be part of such an experience seemed to contribute significantly towards creating and eventually strengthening ties that connected teachers, supervisors, and trainers together as a special community and that appeared to ultimately help bond them to a shared set of ideas, beliefs, and values.

For novice teachers such as Muna, the opportunity to attend in-service training courses provided her with a sense of community that she was lacking at her school since she was the only teacher. It appears that the sense of belonging and security Muna felt while she attended in-service training carried over to her own school performance whereby she appeared, during my observations, to have gained confidence over time, took risks with her lessons, and slowly developed her competency using active learning methods. According to Muna, "Many times when I don't understand something... I take the issue to the monthly follow-up meeting. There we work together and I can learn about it...All parts of this process help me to learn" (17/07/2010). The activities that teachers participated in and the experiences they had interacting with other teachers and with the trainers during various in-service training courses appeared to contribute a great deal to their sense of preparedness and overall confidence to teach using active learning methods.

**Chapter summary**

In the process of using a social constructivist theoretical framework to try to further understand and explain the process of change experienced by teachers working with the NGO's primary education program, a connection can be drawn with the earlier findings based on the CBAM model. According to Anderson (1997), "a key assumption of CBAM theory is that classroom change can be facilitated" (p. 336). According to the developers of CBAM, people in change-facilitating roles, such as school principals, school supervisors, and teacher trainers assist individuals or groups of teachers in implementing an educational innovation or change. These change facilitators closely monitor what is going on in the schools and they rarely miss an opportunity to take actions to foster and facilitate teachers' mastery of new innovations (Hall & Hord, 1987).

Throughout this chapter, I illustrated how teachers working with the NGO's primary education program were able to acquire deeper understandings of active learning methods when
given the opportunity to personally engage in the construction of their pedagogical knowledge. Findings from the interview data appear to indicate that the development and maturation of teachers' attitudes and behaviours when attempting to put active learning methods into practice was dependent on particular aspects of social constructivism. First, teachers' past and present schooling experiences were of value in the pedagogical change process. Second, in order for teachers to adapt and improve their use of active learning methods, it was crucial that they were provided with opportunities to interact with a community of like-minded learners. Overall, it appears that including a social constructivist lens helps us better understand that a concept as remote and abstract as active learning is difficult to understand, embrace, and eventually implement. Incorporating social constructivist theory as a tool for analysis provided a more personal perspective about how teachers developed and responded to the NGO's active learning mandate. It also helped us better understand why some teachers progressed beyond mechanical and routine levels of use and why other teachers appeared somewhat stuck in low-levels of routine use of active learning methods. This knowledge has potentially important implications for the design and development of my appropriate professional development supports for teachers. Simply providing professional development without taking into consideration insights from social constructivist principles may result in professional development being less relevant and less effective for teachers.

When these key social constructivist principles are compared with my CBAM findings, especially the LoU and IC Map data, it is notable how well they support one another. For example, teachers who had been teaching at the NGO for more than five years including Hana, Bushra, Anisa, and Wasif had some of the highest LoU ratings. This appears to support the argument that a teacher's knowledge and competency using active learning methods is clearly related to their experience in the classroom. Furthermore, among the six teachers with medium to high fidelity ratings based on my analysis of the IC Maps, five of the teachers had more than five years of experience as classroom teachers with the NGO. As the sample of teachers' gained experience in the classroom and combined this with frequent opportunities to meet with other teachers while participating in teacher training programs, their knowledge about how best to implement active learning methods was enriched. The NGO's commitment to a style of in-service teacher training that encourages teachers to communicate, share ideas, and learn from one another clearly demonstrates an understanding for and appreciation of social constructivist principles. In
the next chapter I analyze the role of context in shaping teachers' understanding and use of active learning methods.
Chapter 9: The Role of Context in Shaping Teachers' Implementation of Active Learning

A third major theoretical component informing this study addresses the need for more systematic CBAM-based research and theory development regarding the role of contextual factors (Hall & Hord, 1987). For the purposes of my study, I draw upon various dimensions of context as a tool for analysis to better understand how teachers adapt and implement the NGO's active learning mandate, which in turn has implications for the efficacy of the NGO's ongoing professional development.

The definition of context used in my study is based on Boyd's (1992a) definition of context comprising: (a) ecological factors, and (b) culture. The third round of semi-structured interviews with teachers attempted to address these context factors (see Appendix 18). In the first section of this chapter, qualitative interview data is analyzed with a focus on the "ecology" of the school, which includes resources, policies, and the school's surroundings (Boyd, 1992a). In the second section, interview data is further analyzed with a focus on cultural characteristics. In Boyd's (1992a) efforts to define context, she adopts Hall and Hord's (2006) definition of culture as "the individually and socially constructed values, norms, and beliefs about an organization and how it should behave that can be measured only by observation of the setting using qualitative methods" (p. 20). Building on Boyd's (1992a) as well as Hall and Hord's (2006) definitions of context and culture, Stephens' (2007) definition of culture focuses on what people think and their actions as well as how we describe and evaluate those beliefs and actions. While considering each of the above definitions of the culture of schools, for the purposes of my study I attempted to also address issues pertaining to teachers' attitudes towards their use of active learning approaches (Boyd, 1992a).

My rationale for incorporating contextual considerations, whether it is the ecology of the school or the culture of the school as defined in this study, is that "context matters when studying school level reforms" (Wells et al., 1995, p. 21). This knowledge has significant implications for those responsible for teachers' professional development. Just providing professional development without taking into consideration the role of context may result in professional development being less relevant and less effective for teachers working with the NGO's primary
education program. Furthermore, it should be noted that as a tool for data analysis, only select aspects of context were chosen which could be supported by the interview data.

The ecology of the school

Elements of a school's ecology focus on situational variables including: (a) the availability of teaching and learning resources, (b) formal education policies, and (c) the environmental surroundings (Boyd, 1992b). Among these variables, there is a degree of interaction and interrelatedness that contributes to the overall context of the school. In this section, I will describe how these three variables of school ecology shape how teachers' adapt and implement active learning in their classrooms.

Teaching and learning resources

In order to make school improvement effective, the resources made available by the educational context are very important (Boyd, 1992b; Reezigt & Creemers, 2005). Resources can be material, but there are also other resources such as time that may be essential for supporting teachers (Sarason, 1996). Within the context of rural Bangladesh, the quantity and quality of available teaching and learning resources specifically designed and developed for the NGO's schools is a hallmark of their primary education program.

Supplementary learning materials

Key learning resources produced by the NGO included specifically designed supplementary materials that supported activity-based student learning in the classroom. Working from the central office, the NGO's curriculum and materials development team continuously designed and developed a variety of teaching and learning aids (e.g., manipulatives, flash cards, games, visual aids). These materials appeared to be popular and were frequently used by teachers and students. The high regard teachers seemed to have for the large variety of available learning materials might have been partly a result of the sense of ownership teachers have over the materials. It appears that teachers actively contribute to the development and continuous improvement of the supplementary learning materials. The NGO staff responsible for the development of learning materials, frequently visit schools to observe students' interacting with materials and elicit feedback from teachers about the materials.
When teachers were invited to share their opinion about the supplementary materials available to them, most were initially surprised by the large variety of materials for students and all but one teacher stated that there was an adequate supply for their teaching needs. For example, Rezwan mentioned that his students enjoyed the opportunity to read from "realistic" storybooks developed by the NGO (10/06/2010). The NGO's material development team created the stories and illustrations for all of their supplementary storybooks. The stories addressed contextually relevant and age-appropriate topics that students could easily relate to and appreciate (see Photo 9.1). Other teaching and learning aids developed by the NGO included number and word games, wooden blocks, flash cards, sticks, buttons, wall posters, and a multitude of low-cost or no-cost materials created by teachers including posters and mobiles.

![Photo 9.1](image)

Photo 9.1. Example of a storybook called *Nana's Bari* (Grandmother's House) developed by the NGO. Notice the 'big book' used by the teacher and the smaller student copies of the same story.

Despite most teachers' appreciation and satisfaction with the available learning materials, when Parvin, a senior program officer at the NGO was asked to discuss her impression of some of the key inputs that support active learning she stated, "I don't think we have sufficient materials. Active learning methodology requires more materials" (23/08/2010). The difference of opinion between Parvin and the teachers sampled in my study seemed to highlight a disconnect between the central office's expectations and teachers' actual use of supplementary materials. One possible explanation for the teachers' point of view could have had something to do with the limited instructional time available to them each day. Given teachers were expected to complete a certain number of activity-based lessons each day and ensure students were achieving specific
learning competences in each of the lessons, the added pressure to appropriately incorporate supplementary materials may have been seen by some teachers as a burden.

It is time consuming for me to have to teach every child individually. Some students don't even know how to hold a pencil properly and this takes up a lot of time. I don't have enough [time] to complete the assigned work (16/08/2010).

Although the participants in my study tried to incorporate supplementary materials into their lessons, judging from my class observations and the subsequent IC Map ratings (see Table 7.2 for a basic frequency count of teachers' use supplementary materials), it appeared that Anisa was not alone in her struggles to properly use the supplementary materials as expected by senior program officers with the NGO's primary education program. During nearly 25% of my class observations, I noted that teachers in my study did not provide students with any supplementary materials during lessons.

Supplementary teaching materials

A major strength of the NGO's primary education program was the development of supplementary materials specifically designed to support teachers' understanding and use of active learning methods. In this section, I will describe two types of supplementary teaching materials. First, I will discuss the apparent strengths and weaknesses of the teacher resource guides. Second, I will briefly discuss the possible benefits of the relatively new teacher magazine developed to support professional development.

Teacher resource guides

In addition to pre-service and in-service teacher training, one of the most important resources available specifically for teachers appears to be the teacher resource guides. The resource guides were designed and developed by the NGO's curriculum and materials development team through a process of observing and talking to teachers about their lessons. The developers of the resource guides actively involve teachers in the development of the materials by encouraging their feedback, especially during monthly refresher training courses. The resource guides were developed for each subject from grade one to grade five and provide teachers with detailed instructions for each lesson. In particular, the guides provided teachers with lesson plan suggestions, guidelines on the amount of time to spend on each activity, a list of learning competencies for each lesson, group work instructions, assessment instructions, and a list of...
required supplementary materials (see Appendix 20 for a sample lesson). It appears that the NGO’s central office staff places a great deal of importance on the teacher resource guides to help enhance teacher effectiveness in the classroom. According to Kaniz, a senior program officer with the curriculum and materials development team,

> [w]e develop materials to help teachers teach each chapter easily to the children. If he or she reads [the teacher resource guide instructions] before conducting the class then it is easy to deliver the subject" (19/08/2010).

The value of the teacher resource guides on a teacher's development and use of active learning methods was described by Shafiqah, an experienced trainer with the NGO, as follows.

> As a teacher I might have received training but over a period of time I might forget certain aspects of it. So, referring to the resource guidebook will allow the teacher to remember in detail all the supplementary activities the teacher should be using in certain classes as well as the specific contents that the teacher should focus on in class and the objective of every lesson (19/08/2010).

When I asked the teachers in my study to share their opinion about the teacher resource guides, most viewed them as important teaching materials that contributed positively to their teaching repertoire and competency in the classroom (see Appendix 18 for a list of interview questions). This opinion seemed to be supported by my own experiences watching teachers during classroom visits. During nearly 60% of my observations, teachers were regularly and repeatedly referring to their teacher resource guidebooks, especially at the beginning of each lesson. Among my sample of teachers, their perceptions about the resource guidebooks varied. Rezwan, Ritu, Muna, Wasifa, and Fariha appeared to view the materials largely as essential lesson plan guides that ensured a high degree of implementation fidelity of the active learning pedagogy. For example, when Rezwan was asked what role the teacher resource guides played in his teaching practice he stated that the

> [t]eacher's guide is essential because if we want to work in the right way we must follow the teacher’s guide. Such as, in case of lesson delivery, routine planning, and scheduling we must follow these guides (10/06/2010).

Other teachers including Tahsin, Anisa, Bushra, and Hana seemed to utilize the resource materials periodically and as one of the available tools that enhanced their lessons and reminded
them of various active learning strategies introduced during in-service training. For example, when Bushra was asked for her opinion about the teacher resource guides, she said,

> the guides help me to recall ideas from training. I also develop some techniques, which are outside of the teacher’s guide. Suppose something is given in the teacher's guide that does not work to make children understand, in that case I have to improvise something. At that time, I develop something on my own that will help my children understand. My target is that children will understand and learn (14/06/2010).

 Depending on an individual teacher's particular needs and circumstances, the suitability of the teacher resource guides seemed somewhat variable in terms of supporting teachers' implementation of active learning. For some of the novice teachers who worked alone like Muna, the resource guides provided immediate detailed instructions for each of her lessons. Whereas, more experienced teachers appeared to have been more willing to modify their lessons and viewed the resource guides as just one in a number of teaching resources at their disposal. Generally, both novice and experienced teachers stated that they were expected to follow the resource guide instructions and only certain teachers with considerable experience were encouraged to apply new teaching techniques or strategies when they felt it was necessary. The freedom to adapt lessons appeared to be somewhat of a contentious issue for my sample of teachers. In one of the stronger critiques against the resource guides, Wasifa described the materials as,

> not always helpful and at times creating a barrier for teachers especially if they are required to follow the instructions word for word. We don't have full freedom (25/07/2010).

 One possible interpretation for the lack of consensus among my sample of teachers regarding the usefulness of the teacher resource guide materials was that the teaching resource provided a standardized teaching strategy that was highly scripted. From my understanding, the curriculum development team's main objective was to reduce variability in teachers' understanding and delivery of lessons and ultimately produce outcomes that were better than what would be expected from the majority of teachers if they were left to their own devices. According to Hammerness et al., (2005) the decision to develop daily lesson plans like those in the teacher resource guides is a response to two factors: (a) the perception of low levels of teaching skill on the part of teachers, and (b) an attempt to create more standardization in
students' experiences across classrooms and schools (p. 363). Within the NGO, similar considerations appeared to be at play regarding the senior education officers’ decisions to adopt a more prescribed set of teaching strategies. Another factor was the adoptive decision-making process whereby supplemental teaching resources and teaching guidelines were developed at the central office level and distributed down to the regional offices and eventually into the schools and classrooms. From my experience in the field, there appeared to be little expectation, encouragement (especially from school supervisors) or opportunity for teachers to innovate and experiment with their use of active learning methods at the classroom level, hence the over-reliance on the teacher resource guide materials and over-emphasis on adhering to a fidelity perspective on active learning.

It appeared that a major challenge facing the NGO involved the teachers' willingness and ability to individually determine how they used active learning in the classroom. Although the teacher resource guide materials mentioned that teachers should try to incorporate their own ideas into their lessons, this did not appear to be happening. Given factors such as the teachers' lack of prior experience with active learning methods, the type of supervision, and the teaching resources provided to the teachers, it is not surprising that most teachers seemed unwilling or unprepared to implement an alternative form of active learning in the classroom.

From my analysis of the interview data and from my class observations over the course of 10 months, very few of the teachers sampled had purposefully altered the instructions provided in the teacher resource guides. When teachers did modify their lessons, it appeared to be done as a result of time constraints and it usually involved skipping an activity or choosing not to provide supplementary materials to the students. According to my class observations and subsequent IC Map ratings (see Table 7.6), 50% of the time I observed the teachers they failed to provide students with opportunities to use supplementary materials during the student-led portion of each lesson. My interpretation of the data is that teachers understood the importance of incorporating supplementary materials in their lessons but were hesitant to provide students with opportunities for hands-on learning, knowing the additional time needed to distribute the materials, allow students an opportunity to interact with the materials, and eventually collect the materials was greater than the available class time. Furthermore, among the teachers I spoke with, most pointed out that their supervisors openly discouraged them from diverging from the lessons in the
resource guide. When teachers did modify their lessons, it was done infrequently, or left until the end of the class after completing the prescribed lesson, or done without informing the supervisor.

*Teacher's magazine*

During the period of time I was conducting my data collection, the NGO's materials development unit was busy completing the first issue of its new magazine called *Shikok Potrika* (Teacher's Magazine). The NGO's objective was to develop a magazine that supported and showcased the NGO's teachers while also providing an additional resource for teachers to develop their teaching skills and strategies. To try and better understand the rationale for the teacher's magazine, I conducted an informal interview with Azom, who was a senior member of the teacher development unit and he pointed out that when teachers come up with a new lesson plan activity or "innovation" they can have it published in the magazine. He also mentioned that the magazine helps to address the need for more professional reading material for teachers.

Whenever a teacher creates a new innovation, they send it to the material development unit who publish the idea in the magazine. This way, teachers are involved in sharing their innovative activities with every other teacher. ....There are not a lot of books for teachers. Most books are for children. We face this problem. Our executive board said we have to give some books to teachers (21/08/2010).

In addition to the contributions made by teachers, the materials development unit also included a number of new activities and lesson plan ideas in each issue of the Teacher's Magazine that teachers could adopt and use in their classrooms. In an important way, the development of the magazine illustrated one small but important attempt by the NGO to foster an educational context conducive to change. By encouraging teachers to contribute content and ideas for each issue of the magazine, the NGO was potentially empowering teachers by showcasing individual teacher's efforts to explore, experiment, and share ideas about active learning that may ultimately improve their practice. The development of the teacher's magazine was an excellent example of the NGO's effort to promote a social constructivist approach to collective professional development. By distributing copies of the magazine to all teachers, the NGO hoped to create a learning community that promoted meaningful communication and the cross-fertilization of ideas between teachers.
Formal education policies

According to Datnow, Hubbard, and Mehan (2002), government policies may occupy an influential place in the context of education reform, causing schools to attempt and balance multiple, and at times, conflicting demands. In the case of Bangladesh, in 2009, the Ministry for Primary and Mass Education (MoPME) implemented a new national policy requiring all students attending government, non-government, and semi-private schools to write a national primary education terminal exam at the end of grade five. Also known as the *samapony* exams (pronounced: shoma-ponee), the new public exams were designed to replace a primary scholarship exams with a view of bringing qualitative changes in the primary education system and reducing the gap in the quality of education between urban and rural areas. The examinations comprise six subjects (Bangla, English, math, social studies, general science and religion) and consist of three examinations of two hours each scheduled each day over a period of three days. Students hoping to continue their studies into secondary school (grade six) were required to pass these new high stakes accountability exams.

For the NGO's primary education program this was the first time their students were required to sit and write the end-of-primary exams. Unfortunately, Bangladesh's primary curriculum is overburdened and the end-of-cycle examinations are comprehensive, factually-oriented, and not particularly child-centred. This may explain why a high proportion of the NGO's grade five students' terminal exam results were discouraging. According to the Executive Director of the NGO, the increasing attention and importance directed towards test scores was "a global issue" (17/08/2010). According to the executive director, the importance given to test scores was not an inherent objective of the NGO.

We would like to see that children are able to learn and achieve. One the one hand, students should be able to be fluent readers, able to express his or her views, able to write, able to do the basic mathematic operations well. Critical thinking, abstract reasoning skills, and being able to learn to learn. Morally, we’d like to build a kind of pluralistic, diverse, tolerant, society. Different children from different ethnic communities working and living together (17/08/2010).

Having promoted a school culture of activity-based teaching and learning in which competition was carefully controlled, the Executive Director acknowledged,
[o]ur students have not done that well in this kind of competitive exam. So one of the things that we have to do is help students do better on these exams. There needs to be a balance (17/08/2010).

It appeared that the credibility of the NGO's primary education program was becoming increasingly dependent on demonstrating that a majority of students were able to successfully pass their final exams. Yet, this new focus for the NGO's primary education program appeared to involve a significant conceptual shift in the NGO's original norms and values. For example, while acknowledging the importance of exams results, the Executive Director of the NGO also described the goal of the primary education program as helping to empower and guide students in their personal and social development.

Our larger goal is to basically empower people, to empower women, men, and children. Primary education helps build that foundation of human potential. Education helps build certain human qualities and skills and an attitude and knowledge that helps in building and developing a human being to his or her full potential (17/08/2010).

Similarly, a high degree of consensus occurred among central office staff and teachers participating in my study regarding the mission or educational goals of the NGO schools. For example, Muna stated,

[t]he main objective of this school is to educate the underprivileged children of this area, also to make them independent in the society and to prosper in future (27/07/2010).

Various teachers also mentioned the personal and social benefits of an education. Afzal and Ritu seemed to prize certain learning objectives or values related to the morality of students and the inculcation of certain life skills. For example, Afzal spoke of the importance of educating students "properly" and teaching moral values,

I mean education and being literate is not same thing. However, if they [students] are not educated properly they can't be morally developed. Our main objective is to develop them as moral and good citizens of the country. It is our duty to present the good things to them and prevent them from the bad things (26/07/2010).

While teachers appeared to have tried to instill students with the knowledge and appreciation for being respectful and contributing members of the community, their secondary focus remained largely academic. Wasifa commented that after completing elementary school,
"A student should achieve basic literacy skills as well as increased confidence" (25/07/2010). Some teachers like Hana warned against encouraging students to memorize their lessons.

The government schools promote memorization. It is better to teach using a method that actively engages students. We use several materials and games to help them learn and they can easily remember the lesson (20/07/2010).

To support students in reaching these goals, there appeared to be agreement among teachers that the most efficacious approach to teaching involved using active learning methods. Interestingly, none of the participants in my study mentioned the importance of exam results when asked about their school's mission or goals. One possible interpretation of these findings was that teachers did not directly associate the active learning approach with adequately preparing students to write exams such as the *samapony* exam.

Defining and implementing a clear policy that supported a balance between outputs and the active learning pedagogical approach appeared to be a challenge for teachers, trainers, and program officers. Parvin, a senior program officer with the primary education program, described how she was trying to decide what message she would convey to her teachers about the increasing focus on test scores.

I am looking for the answer. I think next year, maybe this time it would be more appropriate to answer. But my initial impression is that methodology is not the whole thing but the objective or goal of the organization or program is also important. Earlier we focused more on the process, not the output. If I compare with BRAC⁹, as I heard from people and as I know BRAC, they are more focused on output. It is the attitude of an organization, it is what they want to see. Do they want to increase the glamour of the process or are they focused on the output? I don’t care which methodology we follow but at the end of the day I want results. But I think we are implementing a very modern and very effective methodology but we need to focus on the outputs. We need to balance actually the methodology and the output (23/08/2010).

Parvin's comments highlighted the difficulty she faced trying to reconcile her commitment and belief in active learning teaching strategies with the growing pressure to ensure that teachers were

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⁹ BRAC is the largest national non-government development organization in Bangladesh. Founded in 1972, it currently operates the largest private, secular education program in the world, with 15,000 pre-primary schools and over 30,000 non-formal primary schools.
adequately trained and students were adequately prepared for the national primary completion exams.

Achieving some consensus among trainers and senior program officers as to how to address the demands of the terminal exams while simultaneously remaining faithful to the active learning approach appeared to be a challenge. In particular, it seemed that the suitability of implementing an active learning methodology from preschool through to grade five was being questioned. Shafiqah, a senior teacher trainer highlighted the challenge facing teachers and trainers.

I think that active learning should only be continued until grade three and after that we should switch to the national curriculum for students to have a shot at doing well at the grade five terminal exams (19/08/2010).

Although the new exams had only been around for one academic year, it appeared that teachers were already being asked to adapt their lessons and teaching strategies, at least in grade five classes, in an effort to better prepare students. According to Azom,

[t]his year, management decided 'anyhow, anyway you will get better exam results'. In this year maybe, we are not following the teacher resource guides. This is only for grade five, next year we hope that all teacher resource guides and active learning methods and materials will be used (21/08/2010).

While interviewing the teachers sampled in my study, some suggested that the terminal exam exerted a powerful influence on their behaviour and forced them to question the pedagogic appropriateness of the active learning methodology. When teachers were asked to describe in more detail the kinds of pressures they were experiencing, many commented on feeling responsible for primarily preparing students for syllabus-based national exams. For example, Bushra spoke of her experience over the past year preparing her students and pointed out her concern about test scores.

We always need to make sure that our students do better and the head office constantly checks up on us. We are always worried about how to help our students do better in the exams (19/07/2010).

The pressure felt by Bushra to increasingly focus on exam results seemed to be indicative of a larger trend among the study participants towards placing more and more value on high stakes
exams. Muna also spoke about her desire to see her students do well on exams and the pressure that was having on her.

At the time of students' assessment, I want all the children to understand what I taught in my lesson. I feel pressure to teach better. At exam time, I feel pressure because I want my students to do better than students from other schools. I worry that teaching until 3:00 PM is not sufficient so I have arranged to extend classes after regular school hours (27/07/2010).

It appeared that teachers were also receiving mixed messages from their superiors. Despite some teachers being instructed during monthly meetings and other professional development workshops to focus more on adequately preparing students for their exams, there remained an expectation that teachers would continue to faithfully follow the teacher resource guide instructions. Parvin provided an explanation regarding the complexity of trying to accommodate the multiple demands facing the NGO's teachers.

My senior colleagues and maybe my team members, maybe they are confused. I understand their confusion. Maybe they are thinking that the primary education program is going to ignore the active learning methodology in the future. Because of the samapony exam pressure, maybe we need to think about a more traditional approach. My idea is that the methodology was not responsible for the results. To me the challenge is to instruct them that this is a good methodology. So I am thinking about establishing more active learning methods in our program (23/08/2010).

Although Parvin along with many of the teachers were strong believers in the efficacy of active learning, the ongoing dialogue between teachers, supervisors, and trainers about the need to improve exam results appeared to be having an impact on teachers' attitude and use of active learning approaches. According to my class observations and judging by my findings from the Innovation Configuration Map ratings, there were indications that teachers were using specific active learning strategies such as cooperative learning and hands-on learning sparingly. For example, only 15% of the time I observed my sample of teachers was there evidence of children working together cooperatively and only 19% of the time were children provided with supplementary materials during their lessons.
Overall, it seems that the new national exam policy for primary education had forced the NGO to reassess its existing program and consider new pedagogical reform models. Some administrators appeared to support forgoing existing components of their active learning program (at least for grade five students) while others seem steadfast in their commitment to providing a child-centred, active learning program that supported a wide range of student learning competencies across grade levels.

Regardless of whether the emphasis on exam results were driven by government mandate, or pressure from the international donor community, or a combination of the two, it appeared to have affected the messages delivered from senior staff at the NGO about what teachers were expected to accomplish in their classrooms. The apparent lack of consistency about what type of student learning was most important meant that teachers needed to be "adaptive learning experts" (Bransford, et al., 2000; Darling-Hammond, 2006), who not only use many of the active learning strategies they have been trained to use but also have a relatively high level of flexibility that enables them to adapt their teaching when the existing routines do not appear to be sufficient. According to Hattie, "adopting any innovation means discontinuing the use of familiar practice" (2009, p. 252). From my interpretation of the data and experience in the field, this was going to be a difficult expectation for teachers working with the NGO. For a very long time, the teachers appeared to measure their effectiveness in the classroom more in terms of the satisfaction and praise they received from the supervisors, trainers, principals, and parents for "doing it right" in terms of implementing active learning. Furthermore, there appeared to be few formal incentives related to student performance particularly with regards to exam results, and so often, according to Hanushek (1997), teachers are "simply reacting to the incentive structure that does not emphasize student performance" (p. 305). Now they are hearing that exam results are most important. As Hopkins' observed over a decade ago, "one of the threats to child-centred learning is the narrowing of the definition of effective student learning to ... test scores..." (2002, p. 281). The challenge now facing teachers, trainers, and senior education officers will be to figure out alternative ways of teaching when all they really know is active learning.

**Environmental surroundings**

Considering the unique and challenging context in which the NGO schools operate, I believe it is necessary to address the environmental surroundings and the effect it can have on
teachers' use of active learning methods. Despite the teachers' best efforts creating a meaningful learning environment for their students, the challenging physical environment in Bangladesh often poses significant challenges for students and teachers. During the monsoon season, this region of Bangladesh can experience continuous rain for consecutive weeks leading to widespread flooding of the surrounding countryside. Half of the teachers in the study mentioned in their interviews that the monsoon rains flood the land surrounding their schools forcing students and teachers to walk through dirty water and deep mud to get to class (see Photos 9.2).

Photos 9.2. Rain soaked paths and roads during the monsoon season. Images taken while trying to reach the NGO schools to conduct class observations and interviews during the monsoon season.

At times, no way exist for students to reach their school. In the most extreme example of the environmental impact of the monsoon floods, Muna and her students were forced to take a boat to and from their school each day (see Photo 9.3). The school is surrounded by water as much as 12 feet deep from approximately June through October each year. During my interview with Muna, she described the difficulty students faced trying to come to school:

For commuting to school the water is a big challenge. This is the rainy season and many students don’t come during this time. Out of 30 students only 20 to 27 students are in attendance. There is no day when the attendance is 30 in rainy season. However, when there was no water on that time everyday I have 30 students present in grade one and
shishu [preschool]....When there are big waves during a storm, they are afraid and don't want to come to school. There were three or four cases this year when the boat that brings students to school sank. After the boat sank the children's attendance was also reduced (27/07/2010).

Photo 9.3.  NGO's "School Boat". During the monsoon season and weather permitting, the only way for children to reach the school is by boat.

Another weather-related factor inhibiting teachers' and students' regular attendance at school was illness. In particular, diarrhea and flu seemed to affect students and teachers, most frequently resulting in significant drops in attendance during particular times of the year such as the monsoon season. Additionally, contaminated water and food-born diseases and infections including dysentery, malaria, and typhoid often resulted in lengthy teacher and student absences.

A third environmental factor that appeared to have an impact on teachers' performance was the heat and humidity. Between March and December, it can get extremely hot and very humid in Bangladesh. During the period of time I collected my data, it was not uncommon for the temperature in the classrooms I'd visit to reach over 40 degrees Celsius mixed with relative humidity levels around 80%. A contributing factor for the extremely hot classrooms was that none of the schools had electricity so there were no fans to provide a cooling breeze. Under such uncomfortable conditions, it was a huge physical challenge for teachers to make the effort throughout the day to try and consistently facilitate activity-based lessons and it was equally challenging for students to stay alert and actively participate in class. Considering the difficulties
I faced simply sitting in a corner of a classroom, struggling to keep the sweat pouring off my face from soaking my class observation notes, I was always impressed by the effort teachers made during their lessons to move around the class and support students with their lessons. Interestingly, none of my participants complained to me about the heat or humidity during my repeated class visits or interviews. The routines that made up a teacher's day like the three mile walk to and from school that Ritu had to undertake was just a part of life. According to Ritu, "I used to walk 3 miles to get to school as a little girl so it's ok" (16/08/2010). Clearly, my participating teachers' definition of an environmental challenge or hardship and the impact that had on their performance in the classroom was vastly different than my own perceptions of "reasonable" classroom comfort conducive to teaching and learning.

**School culture**

The second major contextual dimension included as a tool for analysis to better understand how teachers adopt, adapt, and implement the NGO's active learning mandate involves social and cultural considerations. School change theorists claim that every school has its own culture, which is socially constructed by members within it (Datnow, 1998). Building on Datnow's definition of school culture, I will discuss how teachers' attitudes towards teaching influence their understanding and use active learning.

**Teachers' attitudes towards teaching**

The attitudes of teachers regarding teaching, students, and professional development can influence teachers' behaviour in implementing or resisting the use of active learning in the classroom. Even among teachers with the best of intentions, their students and their personal pedagogical practice can be hampered by the social, economic, and environmental problems (Abadzi, 2006; Boyd, 1992a). During interviews with participants, every teacher mentioned that the greatest reward from teaching came from seeing their students learn. For example, Afzal states, "When I see that my students have grasped everything I have taught them it brings me most joy and I don't think that anyone who doesn't enjoy teaching can actually succeed at teaching" (26/07/2010).

Despite the teachers' satisfaction in helping students learn, the challenges posed by poverty appeared to have an impact on teachers' attitudes toward teaching. The majority of students attending the NGO's schools receive little or no help at home with their studies, so it
became the teachers' responsibility to present the material repeatedly and devise strategies that would help ensure low and high achievers were engaged and learning. During one of my interviews with Ritu, she highlighted a common complaint among teachers regarding a lack of consistent support and involvement by parents.

Parents aren't very much concerned if their children do poorly on their exams. We tell parents that their children miss too much school and we encourage the parents to send their kids to school everyday. The problem is that the parents of the weakest students never come to meetings so those students never seem to improve (16/08/2010).

In an effort to increase parental involvement, Hana explained that support teachers or school supervisors will go to parents' homes to encourage them to attend meetings and send their children to school regularly. An added difficulty facing teachers was the fact that many students came to school in the morning without having had breakfast. Hana pointed out that children who were hungry had short attention spans and were consequently that much more difficult to teach.

Sometimes I ask my students if they have had anything to eat in the morning and they say "no". How do you expect a child to come to school, concentrate, and learning when their tummies are empty (20/07/2010)?

According to Abadzi (2006), even the best of teachers is unlikely to overcome the effects of hunger and long-term malnutrition. From my repeated school visits, I noticed that teachers often struggled to maintain students' attention during class. It appeared to be a challenge for the teachers to find a way to maintain a certain level of student discipline in class while being careful not to scare away students from coming to school.

Another factor that may have had an impact on teachers' attitudes towards activity-based teaching was their limited content knowledge. It appeared that at times when teachers struggled with the content of a lesson there was a tendency to avoid active learning approaches. For example, in English classes I noticed during my class observations that teachers appeared to prefer a more didactic approach that minimized any chance for students to ask hard questions.

Last, on a number of occasions during my school visits, I noticed that some of the teachers appeared somewhat less than enthusiastic during their lessons. The repetitive nature of every lesson regardless of the subject or grade level and the detailed lesson plans provided to teachers in their resource guides seemed to have left little cognitive challenge for teachers to contend with during the instructional day. In particular, there were two experienced teachers in
my study who would frequently spend time during their lessons staring out the window rather than keeping an eye on their students. For example, while observing an environmental science lesson on the topic, "Different shapes of leaves", I made the following notes about one of the teacher's lesson delivery:

Brishti Primary School: Grade One

Teacher simply reaches out from window in her classroom and grabs a leaf from a nearby bush to show students. Teacher does not appear to have read the lesson closely ahead of time otherwise she might have made more effort to bring in a variety of different types of leaves to show students (19/07/2010).

My interpretation of these findings was that it wasn't very likely I'd observe these teachers making much effort to implement active learning in their lessons or experiment with more innovative ideas so as to make their classes more exciting for students. According to my class observation notes, neither of the teachers I observed staring off into neighbouring fields of rice paddy effectively incorporated the use of supplementary materials, small group-work, or open-ended discussion teaching strategies during their lessons.

In an effort to more fully understand the variety contextual factors influencing teachers' attitudes towards teaching, the role of religion was also discussed during interviews. Despite Bangladesh's image as a moderate Islamic country, the people of the Sylhet division are often regarded as being particularly conservative. It was anticipated that religion would be a factor influencing teachers' use of active learning methods but to my surprise, this did not come up, despite being asked directly during the interview process. The fact that teachers did not perceive religion to be a factor either limiting or enabling their use of active learning does not mean it was not present but further research is needed to better understand what impact if any religion played in the participants' teaching lives.

Chapter summary

In this chapter, the role of context in shaping teachers' understanding and use of active learning was analyzed and described. Using Boyd's (1992a) definition of the dimensions of context, I attempted to analyze the extent that the ecology of the NGO's schools including the
availability of resources, education policies, and the surrounding environment affected teachers' practice. The culture of the school was also considered, specifically to determine how teachers' attitudes towards teaching were affected. Findings from the interview data appear to indicate that the availability of teaching and learning resources emerged as an important variable in the teachers' efforts and efficacy using active learning methods in the classroom. In particular, the teachers' resource guides appeared to be the most important resource supporting the teachers' ability to implement an active learning pedagogy with a high degree of fidelity. Another key contextual factor was the recent policy shift and increased focus on high stakes examinations for students. My analysis of teacher interview data indicated that this shift in education policy has forced teachers to adapt their teaching approach and reassess what they considered to be quality teaching and learning. Although all of my participants conveyed a positive attitude about their students and teaching, there were numerous environmental, social and cultural constraints that presented barriers to the teachers' ability to consistently implement active learning in their classrooms. In the following chapter I summarize the key findings presented in Chapter 5 through Chapter 9. I also discuss implications for the NGO's commitment to continuous professional development and its teachers' understanding and use of active learning methods in light of these findings and offer suggestions for future research on teacher development and teacher change in low-income country contexts.
Chapter 10: Conclusion

Introduction

In this final chapter I draw together the main findings of this dissertation research to identify key implications for teachers implementing change in the context of low-income countries. The study was undertaken in Bangladesh and is significant to international development studies around teacher change and teacher development. The chapter is organized into five main sections. In the first section I provide a brief overview of the study including the purpose, the key research questions, and a review of the methodology. In the second section and its sub-sections I summarize the main findings about the nature and extent that primary school teachers adapt and implement pedagogical reforms in their classrooms. In the third section I identify how the research has implications for: professional development and support for teachers and the applicability of CBAM-based research in low-income country contexts like Bangladesh. In the fourth section I identify future research areas in comparative, international, and development education. In the fifth and final section I provide some final thoughts on the research and and my understandings about the teacher change process.

From the research findings, I believe that three main guidelines can assist how teachers are supported in their efforts to competently implement pedagogical innovations in the classroom. First, those supporting teachers need to better understand the challenges of teaching in rural Bangladesh. Second, professional development for teachers needs to be continuous and based on periodic "measures" that acknowledge teachers' concerns, behaviours, and quality of implementation of active learning and the curriculum as envisaged by the education provider. Third, from a methodological perspective, using the Concerns-Based Adoption Model in a low-income country context like Bangladesh can help address issues of implementation "fidelity" versus more "adaptive" approaches to pedagogical implementation by teachers.

Summary of the study

Within the field of international and development education, it is increasingly recognized that quality education is the result of the interaction of a myriad of factors including the competency of teachers (Cochran-Smith & Zeichner, 2005; Farrell, Hargreaves & Fullan, 1992). In many low-income countries, including Bangladesh, teachers are struggling to implement
progressive educational reforms requiring them to align their teaching practice with more constructivist-oriented learning strategies. Despite teachers' willingness to adapt their practice according to new policy directives, current teacher development approaches addressing pedagogical strategies like active learning remain poorly developed (Anderson, 2008). Building on research about change in teachers and teaching, this study attempts to better understand how variability in the ways teachers' mediate "modernizing reforms" (Avalos, 2012) reflects differences in their knowledge, skills, attitude, and experience using active learning methods in the classroom.

Throughout this dissertation I have sought to improve our understanding of the teacher change process in order to ultimately improve teacher professional development in the context of Bangladesh. I aim to gain a deeper understanding of the nature of stages of concern that teachers experience in relation to their levels of use of active learning pedagogy; to gain a deeper understanding how teachers' personal experiences and social interactions contribute to the construction of knowledge and shape their teaching practice; and, better understand the extent that contextual factors exert influence on teacher concerns, mastery, and patterns of classroom innovation use.

To address these research gaps within the field of teacher change, this study was guided by the following key research questions.

1. How do teachers adapt and implement active learning methods in the classroom?
2. How do teachers understand the concept and practice of active learning in the classroom?
3. What role does context play in shaping the implementation of active learning?

For this study, I devised a two-phase research design using multiple qualitative methods to gather data. Data collected during phase one utilized an open-ended concerns statement based on the Stages of Concern diagnostic dimension of CBAM (Newlove & Hall, 1976) and a pre-interview questionnaire. Phase two of the study involved additional multiple interviews, class observations, and the compilation of field notes. Specifically, two additional diagnostic dimension of CBAM including the Levels of Use interview protocol (Hall, Dirksen, & George, 2006) and an Innovation Configuration Map (Hord, Stiegelbauer, Hall, & George, 2006) were used. In addition to the focused data collected using the CBAM instruments, multiple semi-structured interviews with teachers, principals, and support staff occurred. The primary form of
data analysis involved a grounded theory approach occurring at multiple levels including comparisons across teachers involved in the study.

**Summary of the main findings**

In this section, I summarize the main findings from the dissertation. In doing so, I locate the findings within the literature and describe how these findings contribute to the field of teacher change and teacher development particularly in the context of international and development education. These findings directly address the major research questions and sub-questions outlined in Chapter 1 and follow the sequence of the five data analysis chapters.

**Common teacher concerns**

Across all teachers \( (n = 10) \) in the study, a number of key themes and trends emerged among novice, intermediate, and experienced teachers. According to the Stages of Concern (SoC) findings, the number of Personal (Stage 2) concerns, including logistical and class organization concerns was highest among novice teachers (less than two years of teaching experience). Concerns focusing on processes and tasks of using active learning (Stage 3 - Management) were evident among all teachers. Management concerns among novice teachers focused on covering all parts of a lesson within the time available while experienced teachers (more than five years of teaching experience), were mainly concerned about providing sufficient time for students to practice lessons during class time. All teachers expressed concerns about building positive relationships with students and ensuring a joyful learning environment in class. A predominant concern among teachers at the Consequence stage of concerns (Stage 4) was the impact their teaching was having on students' assessments and exam results. The focus on student evaluation among teachers was expected considering the increased emphasis on preparing students for the high stakes exams at the end of grade five. Teacher concerns at the Collaboration (Stage 5) and Refocusing (Stage 6) stages were most notable due to their absence. None of the teachers expressed concern or a willingness to regularly coordinate their planning, preparation, or teaching in cooperation with other teachers in their school or across the NGO's school. Furthermore, teachers provided little indication they were collaborating with colleagues during the school day in an attempt to refocus or change their teaching strategies. When teachers did mention collaborating with other teachers at school it was focused on overcoming small problems with the delivery of lessons or student behaviour.
The developers of CBAM mention that the developmental path of concerns is not always guaranteed, which is in line with these findings that show no clearly defined progression from novice to specialist for teachers using active learning methods (Hall & Hord, 2006). This may also reflect a possible weakness of the implementation support system (following initial teacher training) to help teachers resolve early and/or ongoing concerns. Considering that personal and management concerns persist for the majority of teachers despite the increased classroom experience of some, the argument could be made that experience alone is not sufficient for teachers to move from early self concerns to task or impact concerns.

Beyond the CBAM-based findings, the analysis of the statements of concern uncovered a number of larger themes emerging from teachers' responses. One common theme among teachers was the tension between following the mandated lesson plans and being more flexible and open-ended in the design and development of activity-based lessons. Interestingly, a split emerged among teachers who were committed to closely following the lesson plan guidelines provided by the NGO and those that lamented their lack of freedom because of the teacher resource guides. Another concern was the challenge of differentiating the prescriptive teacher guides to accommodate differences in student readiness and performance. Teachers were clearly concerned that the impact of their teaching on students was unequal. All teachers recognized they had a mix of students in the classes (low achieving and high achieving students). The challenge facing teachers was finding the time to understand individual student needs then providing the appropriate support and guidance to ensure all students were actively engaged in learning.

In summary, the prevailing concerns among novice teachers appeared to be self and task-oriented, reaffirming Huberman and Miles' (1984) finding that beginning teachers are more focused on the daily challenges of survival in class and have little attention or concern for the problems of students. On the other hand, the findings of the study also suggest that teaching experience may not be the only crucial factor affecting the developmental nature of teaching concerns. The relevant data indicates that the development of consequence and impact-oriented concerns in the future is unlikely without encouragement from school supervisors and teacher trainers and greater teacher freedom to mediate the existing teacher resource guides provided to teachers.
**Variability in teachers' use of active learning**

The Levels of Use (LoU) interview protocol provided interesting details about how teachers implemented the NGO's active learning program across grades. Because every teacher adhered to the NGO's instructional guides with no alternative to the active learning approach mandated by the NGO, none of the teachers were rated as "non-users" (LoU 0 to II). Findings from the LoU data indicate that one novice teacher was at a mechanical (LoU III) level of use and two of the more experienced teachers were actively refining (LoU IVB) their teaching practice. This is in line with the majority of CBAM research that acknowledges that most first-time users of an innovation will be at LoU III Mechanical Use, while more experienced users are making changes in their use of the innovation targeted towards increasing student outcomes (Hall & Loucks, 1977; Hall, Loucks, Rutherford, & Newlove, 1975). Analysis of the LoU interviews also revealed that seven participants comprised of novice, intermediate, experienced teachers were at a combined Mechanical and Routine LoU of active learning methods. This contrasts with previous findings suggesting that if teachers have appropriate facilitative assistance and time, they typically move to LoU IVA (Routine) levels of use (Hall, 1999; Hall & Hord, 2006). The immediate challenge for the teacher trainers and school supervisors will be to help support all teachers to develop their teaching proficiency to a Routine (LoU IVA) level of use in terms of their knowledge of active learning as well as their capacity to plan and competently use the pedagogical approach. To ensure continuous professional development of their teachers, the NGO's teacher support staff will need to find ways to adequately prepare teachers with the skills and commitment to improve their use of active learning methods through a continual process of acquiring information, sharing ideas and problems with colleagues, and engaging in self-assessment for the purpose of improving student learning outcomes.

In addition to the overall LoU ratings determined for each teacher, findings from the focused interviews were also classified according to seven behavioural indicators or categories that provided a more descriptive account of teacher behaviours. The LoU categories that provided some of the more extreme ratings included: acquiring information, assessing, planning, and status reporting. Among the 10 teachers in the study, the category with the most significant LoU variation was 'acquiring information'. There were five teachers at a Mechanical Level of Use (LoU III), three teachers at a Routine Level of Use (LoU IVA) and two teachers at the Refinement Level of Use (LoU IVB). At these levels, teachers efforts to solicit information were
dominated by personal needs such as logistic and class management issues. Those teachers at routine and refinement levels indicated they were competent users of active learning approaches and indicated there was little incentive or need to seek out new ideas beyond what they regularly received during in-service teacher training.

Worth noting are the categories in which teachers received the lowest and highest ratings based on the LoU interview findings. The LoU category that garnered the lowest average rating was 'assessing'. Findings indicate that six teachers were at a Mechanical (LoU III) level of use meaning that both novice and experienced teachers engaged in minimal self evaluation and were mainly preoccupied with their ability to cover the lessons provided in the teacher guides within the allotted class time. The highest ratings for teachers were given in the categories 'planning' and 'status reporting'. Teachers' average ratings for both categories were at a Routine (LoU IVA) level of use. In the case of planning, most teachers were involved in modifying existing short-term plans due to the increasing importance given to exam results and the need to cover the required content on time. In the case of status reporting, there was a slight increase in the number of teachers who reported trying to refine their use of active learning in order to enhance student learning. Approximately one-third of the teachers expressed a commitment to incorporating new ideas and experimenting with minor modifications to their lessons. The fact that the highest average ratings were only at a Routine level of use appears to indicate that the majority of teachers were satisfied with their current level of performance in the classroom and have little intention of making any changes in their practice or a desire to seek out new ideas or information about active learning. The interview findings also indicate an absence of teachers describing any behaviours indicating a desire to initiate changes or explore alternatives to their current use of active learning. Based on these findings, it appears that teachers' freedom to modify the current teaching approach was not widely encouraged by the NGO's support staff. The challenge for teachers remains to find ways to manage the tension and preoccupation with implementation fidelity according to formal teaching expectations mandated by the NGO while also exploring opportunities to adapt their lessons to better suit student interests and abilities.

**Teachers' patterns of practice in the classroom**

The CBAM-based Innovation Configuration (IC) Maps were the key data collection instrument I used during classroom observations. The IC Maps enabled me to assess the degree to
which teachers were putting into practice the NGO's concept of active learning. Findings from the IC Map data combined with field notes drew attention to key issues around the teachers' ability to implement active learning with fidelity as well as overall patterns of use of the major active learning components identified in the study. The following summary of the seven major active learning components assessed in the study includes the overall ideal rating which relates to the teachers' ability to demonstrate with a high degree of fidelity the teaching and learning behaviours advocated by the developers of the NGO's primary education program.

The first component assessed focused on the classroom environment, organization, management. The findings indicate that 61% of teachers were judged as ideal, which was the second highest rating among the seven components of the IC Map. The second component of the IC Map addressed the teachers' use of supplementary materials. Despite teachers recognizing the value and importance of supplementary materials, my analysis of the data indicates that the teachers' ideal use was limited to 37%, which was the lowest rating among the seven components. The third active learning component assessed teachers' use of the active learning approach during their daily lessons. Based on an item analysis of IC Map findings, the ten teachers were observed using active learning approaches 'ideally' during 53% of school visits. The fourth component focused on the teachers' efforts to differentiate support for students. Results from the IC Map data indicate that the majority of teachers (57%) made a considerable effort to ensure that all students were supported during class. The use of cooperative learning and group work strategies was identified as the fifth key characteristic of an active learning classroom. Results found that more than 54% of teachers' were rated as ideal users of cooperative and group learning strategies. Although this was a relatively high rating, there were high degrees of variability in teachers' competency, especially regarding use of cooperative learning strategies. The sixth component assessed on the IC Map focused on the teachers' efforts to actively engage students during class. Despite the emphasis given to promoting student participation and involvement in class, the analysis of the IC Map checklist found that only 50% of teachers' efforts to engage students were rated as 'ideal'. This result was the second lowest 'ideal' rating among the seven components. The seventh and final component evaluated during class observations addressed key professional and personal attributes about what an active learning teacher should look like in class. Among the NGO's staff, there were high expectations about teachers' competency in delivering lessons as well as the knowledge of the subject matter and
overall disposition in the classroom. Analysis of this component determined the degree of fidelity among all teachers to be highest (79%) of all seven components of active learning assessed. This finding appears to validate the significant commitment made by the NGO to support its teachers through regular in-service training and school-based guidance and supervisory support.

**Relationships between Stages of Concern, Levels of Use, and IC Map findings**

The findings from this study contribute to CBAM-based research literature by exploring not only the process of teacher change in a low-income country context but also by investigating the complex relationships that potentially exist between the three CBAM diagnostic dimensions with regard to teachers' implementation of active learning. Findings from this study support recommendations by other CBAM researchers (Anderson, 1997; Hall & Hord, 1987) that when the three dimensions of CBAM are combined, they can inform the policymaker and teacher trainer about a teacher's progression with a particular change process and can provide insights for more effective planning and professional support. In this sub-section, I begin by providing a brief summary of the relationships between Stages of Concern (SoC) findings and Levels of Use (LoU) finding. Next, I present a summary of the relationships between LoU and Innovation Configuration (IC) Map findings found in the study. Last, I present a brief comparative summary of factors supporting implementation fidelity of the active learning program and factors supporting adaptations in the implementation of active learning.

The results from my study indicate that teachers' LoU were moderately related to their SoC and appear to shift in parallel to one another. Findings also found that the majority of teachers' "self" and "task" oriented concerns had an impact on their growth (or lack thereof) in implementing active learning strategies. This analysis is supported by the LoU results which indicate that the majority of teachers were rated as Mechanical and Routine users of active learning. Interestingly, among the three teachers that had higher stage concerns, their corresponding LoU ratings indicate they were trying to refine their use of active learning. These findings further support Hall and Hord's (2006) argument that "there is an obvious correspondence between LoU and SoC" (p. 173). Based on these findings, a challenge for the NGO's teacher support staff will be to provide professional and emotional support that
encourages teachers to progress towards the later higher-level stages (i.e., toward impact concerns) over time.

Determining if relationships exist between the LoU and IC Map findings was another goal of this study. The process that I devised to conduct this analysis (see Chapter 7) provided a number of worthwhile insights. The findings seem to suggest that efforts at implementing various components of active learning at optimal or ideal levels required more expertise, skill, and teaching experience than was typically found among teachers with less than five years of experience. When the analysis focused on teachers' instructional skills and other less complex teacher behaviours, it was noted that teachers predominantly expressed Stage 2 Personal (Self) and Stage 3 Management (Task) concerns. In terms of teachers' LoU, the findings were much less consistent suggesting that teachers' LoU ratings were not strongly related to their ability or success implementing various instructional strategies. The study also investigated relationships between CBAM instruments specifically focusing on teachers' instructional strategies, which involved more complex teaching processes like teachers' use of group work and cooperative learning activities for students. Results from the study indicate that the majority of teachers expressed Stage 4 Consequence (Impact) concerns where as teachers' LoU for this component ranged widely between an "ideal" rating for the group work dimension and a "less than ideal" rating for their ability to facilitate cooperative learning among students. Although there was consistency in teachers' SoC ratings, the LoU results pose a larger concern for the developers and teacher trainers at the NGO. The findings appear to support the argument that higher stage concerns among teachers do not directly translate into equally high LoU of active learning instructional strategies. Despite the teachers' variable LoU ratings with regards to group work and pair work, the fact that their concerns ranked so highly may motivate teachers to progress toward higher LoU in the future.

During the complex process of identifying relationships between the SoC, LoU, and IC Map findings, a number of themes or factors emerged supporting teachers' implementation fidelity of the NGO's active learning model and themes or factors supporting adaptations in teachers' implementation of active learning. Table 10.1 notes some of the key qualities, attitudes, and behaviours that appear to limit and/or support changes in teachers' practice.
Table 10.1  Factors limiting and supporting change

<table>
<thead>
<tr>
<th>Factors supporting implementation fidelity of AL program</th>
<th>Factors supporting adaptations in implementation of AL program</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Teachers' attitudes, beliefs in active learning are less critical, more complacent</td>
<td>• Teachers' attitudes, beliefs in active learning are positive but also see value in alternative approaches</td>
</tr>
<tr>
<td>• Teachers try to closely follow the NGO's expectations</td>
<td>• Teachers try to closely follow the NGO's expectations but are willing to exert more individual freedom</td>
</tr>
<tr>
<td>• Supervisors' expectations and support geared towards closely following lesson plan guidelines</td>
<td>• Supervisors quietly support adaptations to lessons</td>
</tr>
<tr>
<td>• NGO and International Donor pressure to produce strong exam results</td>
<td>• Priority is to ensure a quality learning experience possibly at the expense of strong exam results</td>
</tr>
<tr>
<td>• Syllabus and curricular requirements are fixed and a priority</td>
<td>• Syllabus and curricular requirements are important but secondary to student learning</td>
</tr>
<tr>
<td>• Teachers lack confidence, experience, competency</td>
<td>• Teachers are confident, experienced, competent</td>
</tr>
<tr>
<td>• Teachers have limited active learning experience, skills, or subject-matter knowledge</td>
<td>• Teachers have adequate/strong pedagogical content knowledge, subject-matter knowledge, skills and experience</td>
</tr>
<tr>
<td>• Priority is to complete daily lesson plans as prescribed in the teacher resource guides</td>
<td>• Priority is total student engagement in meaningful learning</td>
</tr>
<tr>
<td>• Teachers are less willing or able to adapt lessons to meet individual learner's needs</td>
<td>• Teachers willing and able to adapt lessons to meet individual learner's needs</td>
</tr>
<tr>
<td>• Limited effort to collaborate, gather new ideas, continue to improve as a teacher</td>
<td>• Teachers make an effort to collaborate, gather new ideas to better support students</td>
</tr>
<tr>
<td></td>
<td>• Teachers use variety of instructional strategies (active learning, direct instruction, etc.)</td>
</tr>
<tr>
<td></td>
<td>• Teachers are more critical of personal practice and reflect on their teaching</td>
</tr>
</tbody>
</table>
Teachers' prior experiences with active learning

In addition to the data collected using the CBAM instruments, I also drew upon social constructivist theory as a tool for analysis to enhance our understanding of how teachers developed their teaching practice and responded to the NGO's active learning program. Among the ten teachers participating in the study, none reported having any prior experience with active learning. Furthermore, most teachers viewed their early schooling experiences negatively and struggled to identify any particularly worthwhile student-centred strategies that they would willingly incorporate into their teaching practice today. Much of the current literature on teacher development would argue that this void in the teachers' early schooling experiences puts them at a disadvantage when it comes to implementing more progressive pedagogies like active learning (Beck & Kosnik, 2006; Darling-Hammond, 2006). Interestingly, findings from the study indicate that many participants have embraced teaching and are committed practitioners of active learning methods. Despite not finding any examples of active learning occurring during the participants' early schooling experiences, it appears that a culmination of factors have contributed towards their willingness to embrace active learning methods today. Those factors, many of which are similar to those found in Avalos' (2010) study of Chilean teachers, include an appreciation for the value of education, early encouragement and support to succeed as a student from a past teacher or family member, as well as perseverance and determination to provide students with a better educational experience than many of the participants once encountered as students.

Teachers' current experiences with active learning

Given that teachers' current experiences contribute to their ability to mediate existing pedagogical concepts as well as develop new ones (Beck & Kosnik, 2006; Richardson, 1997), analysis of interview data from Chapter 8 suggests that years of teaching experience influenced teachers' opinions about the suitability of using active learning methods. Generally, novice teachers expressed sweeping support for using active learning methods across all grades where as experienced teachers were slightly more critical and selective of the active learning method, arguing that it was best suited to younger students and lower achieving students.

Another notable contrast among teachers was their attitude towards ongoing professional development. Teachers that received the highest Innovation Configuration (IC) Map ratings for each of the seven active learning components assessed during class observations spoke most
positively of the need to continuously improve their practice, seek out new ideas, and learn from their experiences in the classroom. Participants with lower IC Map ratings often mentioned being satisfied with their current teaching abilities and were less likely to seek out new ideas or teaching experiences.

According to Anderson (1997), "classroom change can be facilitated" and the NGO's primary education program appears to try and model this assumption through its regular in-service support for teachers. In an effort to continuously support teachers and enhance their competency in the classroom, the NGO made concerted efforts to foster dialogue and a strong sense of community among teachers and school principals, supervisors, program officers, teacher trainers, and various curriculum specialists. Recognizing that teachers who are supported are more committed and effective has been highlighted as a key principle of social constructivism theories of learning and integral concept in teacher development research (Beck & Kosnik, 2006; Darling-Hammond, 1996; McLaughlin & Talbert, 1993; Rosenholtz, 1989).

A key support person mentioned by teachers was their school supervisor. Each supervisor was responsible for a group of schools and would try to visit each school a couple of times each week. Supervisors were viewed as helpful largely because they were most familiar with the unique challenges facing each teacher and were able to provide individualized support that addressed teachers' needs and concerns. Specifically, their responsibilities involved monitoring lesson plans, providing advice, modelling new instructional strategies, providing guidance on student assessment techniques, and generally trying to ensure teachers were comfortable and confident in the classroom.

Teachers also described how the NGO's efforts to provide regular in-service training created a sense of collegiality between teachers and the teacher trainers. The opportunity for teachers from different schools to come together each month to discuss challenges, share experiences, and learn new teaching strategies enabled the NGO to create informal learning communities that foster a shared identity among teachers and a culture that valued continuous professional development. On an individual level, the opportunity for teachers to regularly come together provided the space for teachers to freely and comfortably share ideas and concerns with other teachers about their practice. Although there was evidence of collaboration among teachers within each school, it was largely focused on overcoming the daily challenges of delivering lessons and managing student behaviour. It appears that the time away from the classroom to talk
with other teachers and reflect on one's teaching practice led to higher levels of teacher development and growth. Findings from the interview data clearly indicate that the professional development opportunities provided by the NGO and the commitment to building and sustaining strong social networks among teachers and support staff significantly helped increase teacher confidence to implement and ultimately adapt active learning methods in the classroom.

**Contextual influences on teachers' use of active learning**

A recognition of the importance of contextual factors was also considered during data collection. Interviews focusing on various dimensions of context were analyzed to help further clarify how teachers' understood and utilized active learning methods in their daily practice. Qualitative interviews were analyzed with a focus on resources, policies, and cultural characteristics. Among the most influential factors shaping teacher use of active learning methods was the availability of learning and teaching resources designed and developed by the NGO. Unique among primary education providers in Bangladesh, the NGO produced a large variety of learning aids to complement their active learning program. Although teachers' appreciated the availability of these materials, they commented that time constraints and wide-ranging student ability levels often limited the opportunities to include supplementary materials into the lessons.

Another important resource exclusive to the NGO's schools were the teacher resource guides. Teachers appeared to have mixed feelings regarding the lesson plan suggestions and various guidelines about assessment strategies and time limits for various activities. Some viewed the materials very positively, pointing out that the guides helped remind them of interesting techniques they were quickly shown in past in-service training courses. Other teachers were more critical of the materials arguing that the prescriptive nature of the daily instructional guides reduced their ability to adapt lessons to better meet individual student needs. My analysis of interview data along with repeated class observations of teachers found that very few teachers purposefully modified their lessons on a regular basis. Where adaptations were made to lessons, it was generally done by the more experienced teachers who appeared more willing to incorporate their own ideas into the lessons for the purposes of differentiating support for students. It seemed that novice teachers were more often discouraged by their supervisors from adapting their lessons although when changes were made it often involved omitting activities
involving supplementary materials due to concerns about the extra time needed for students to properly use the materials.

The introduction of a government policy requiring all grade five students to write a public final exam required a significant conceptual shift in the NGO's norms and values as well as the teachers' instructional priorities. Findings from interview data highlighted the struggle teachers faced trying to reconcile their beliefs about engaging students in "meaningful learning opportunities" in contrast to the NGO's reluctant but growing expectations for students to perform better on the high stakes exams that largely assess students' abilities to memorize facts and figures. The conflicting demands being placed on the teachers confirms Datnow, Hubbard, and Mehan's (2002) assertion that government policies force schools, and in this case the NGO and its teachers, to try and find a workable balance between multiple and at times conflicting demands. In the case of the teachers in this study, it appeared their ability to manage these conflicting pressures was done with varying degrees of success. The added challenge facing teachers were the mixed messages they seemed to be receiving from various support staff within the NGO. The apparent lack of consistency or clarity about the NGO's expectations required teachers to try and adapt their teaching approach without completely discontinuing the use of familiar and well-established pedagogical practices. The flexibility required of all teachers in this situation supports numerous studies that call for teachers to be "adaptive learning experts" (Bransford, et al., 2000; Darling-Hammond, 2006; Hattie, 2009).

The teachers' attitude about the NGO's pedagogical approach also emerged as a powerful indicator of their behaviour in implementing or resisting the use of active learning in the classroom. During interviews with teachers, they frequently praised the benefits of the active learning approach but also expressed concerns about the difficulty covering the required lesson plans and student-centred activities within the allotted class time. Although teachers all mentioned that their greatest reward came from seeing their students' learn, teachers also seemed frustrated with their students' academic results. Teachers frequently complained about the apparent lack of parental support and felt that they alone were responsible for ensuring students were succeeding at school. Additionally, teachers cited poverty constraints affecting students and the frequency in which many of the children came to school hungry and tired. Clearly, teachers were under a great deal of pressure and struggled with the burden of ensuring all students were regularly attending class, actively participating in the lessons, and achieving academically. Under
these challenging circumstances, teachers complained that it was difficult to consistently foster an active learning environment in the classroom and it seemed that their commitment to implementing active learning approaches varied. Although, the analysis of interview data alone does not adequately describe the teachers' attitude or behaviour when using the active learning approach, data from class observations indicates that teachers often adopted or reverted to more teacher-centred instructional approaches. Clearly, teachers were faced with some very challenging environmental, social, cultural, and economic obstacles in fulfilling their commitment in the classroom. Despite these challenges, teachers appeared determined to continue to develop their skills and teaching knowledge for the benefit of their students.

**Implications of the research**

The main purpose of the dissertation research was to explore how primary school teachers with a local NGO in Bangladesh adapt and implement active learning methods in their classrooms. Based on the main findings it is clear that teachers implement pedagogical practices with variability which reflects differences in their understanding, attitude, experiences, and skill as teachers. From the research findings, I believe that three main guidelines can assist how teachers are supported in their efforts to competently implement pedagogical innovations in the classroom. First, those supporting teachers need to better understand the challenges of teaching in rural Bangladesh. Second, professional development for teachers needs to be continuous and based on periodic "measures" that acknowledge teachers' concerns, behaviours, and quality of implementation of active learning and the curriculum as envisaged by the education provider. Third, from a methodological perspective, using the Concerns-Based Adoption Model in a low-income country context like Bangladesh can help address issues of implementation "fidelity" versus more "adaptive" approaches to pedagogical implementation by teachers.

**The challenges of teaching in rural Bangladesh**

According to Hurst and Rust (1990), efforts to improve the quality and efficiency of education around the world are frequently undermined by poor working conditions for teachers including low salaries, excessive workloads, limited availability of resources, low parental involvement, and difficult environmental conditions. The findings from this study highlight the challenges facing teachers that can influence their response to innovation adoption and implementation as well as attempts to improve the overall educational process.
One of the biggest challenges facing teachers was the physical environment in which they worked. Most teachers struggled to get to school each day either relying on public transport or walking long distances. During the pre-monsoon season, the hot and humid days were a physical drain on teachers and during the monsoon season, heavy rains and flooding caused additional hardships. At school, teachers would spend the day teaching and supporting students in classrooms without electricity or the relative comfort provided by ceiling fans. Although none of the teachers remarked or openly complained about the oppressive heat in the classrooms, it is likely that the heat was a major drain on their physical and mental capacity as the day progressed.

Another challenge for teachers was the heavy teaching load resulting from having to teach two shifts of school involving two different grade levels each day. For many of the teachers, the pressures during school hours were unremitting. The time before class was spent preparing lessons and ensuring the classroom was clean and free of any unwanted guests (e.g., snakes, bats, ant infestations) and the break between shifts was often occupied with marking, preparation for the next shift, meetings with parents or school management committee members, and other managerial or supervisory duties required of all teachers. The heavy demands on teachers often meant they had little time for a snack or a rest during the day thus adding to the exhausting workload requirements. Despite these challenges, the teachers in this study consistently showed up on time for their morning shift of classes and throughout my class observations they were constantly moving around the class, supporting students with their lessons, encouraging students to sing songs when clearly everyone's energy levels were flagging, and then giving time and thoughtful attention during the lengthy interviews with me.

Considering the multitude of challenges teachers must contend with in the context of rural Bangladesh, their commitment, stoicism, and passion for teaching and their students is commendable. I believe that the NGO's efforts to support their teachers both personally and professionally deserves recognition as does the individual effort given by each teacher on a daily basis. That said, findings from this study show that continued variability in the teachers' understanding and implementation of the active learning program raises questions as to the effectiveness of the existing system of teacher professional development and support for teachers.

In terms of other more subtle factors related to the challenges facing teachers in the study is the question of teachers' working conditions and more specifically, whether teachers are viewed and developed as "professionals". The professional status of teachers and the drive
toward greater professionalization of teachers has been the focus of extensive study (see Hurst & Rust, 1990; Louis & Smith, 1990; Rosenholtz, 1989). Defining teachers as "professionals" in the sense of having deep curriculum and pedagogical content knowledge, a wide-ranging repertoire of instructional skills and teaching strategies, classroom management skills, the capability to accurately assess student learning, and use their autonomy in the classroom to adapt their teaching and student support relative to their individual needs, does not always fit with the realities of the increasingly bureaucratic and regulated conditions of most schools around the world (Louis & Smith, 1990). In a challenging context like rural Bangladesh, this image or definition of teachers is often not realistic or viable at least in the short term.

Referring back to the the factors limiting and supporting pedagogical change in teacher practice (see Table 10.1), many of the factors supporting adaptations in teachers' implementation of active learning typify qualities, attitudes, and conditions often associated with teachers-as-professionals. Teachers who are committed, have a sense of autonomy and a belief that their individual actions could lead to positive change, and have the personal practical knowledge and experience to make adaptations to their lessons are often key qualities associated with expert teachers. Among the teachers participating in this study that have begun to exercise a limited degree of freedom in the delivery of their lessons, only a few have been able to demonstrate routine level of use of the key components of the active learning method. The freedom to adapt their lessons is also due to the latitude given by the NGO's senior education officers and school supervisors. It appears that the majority of teachers working with the NGO, work within a relatively restrictive structure in which they are largely limited by the government's curricular expectations and organizational constraints including the NGO's mandated lessons and prescriptive teacher guides. According to Spencer (2001), "the work of teachers has become deskilled through relegating teaching into a set of highly specified tasks within prescribed units of curriculum and instruction" (p. 819).

To help teachers overcome many of the challenges of teaching in rural Bangladesh, it is important to acknowledge the significant and worthwhile efforts by the NGO's curriculum and materials development unit and the teacher training unit to support teachers' continuous professional development. In the continual drive to better support teachers, perhaps a greater focus on the importance of strengthening the "norms of collegiality" (Fullan, Bennett, Rolheiser-Bennett, 1990) through the mutual sharing of teachers' personal stories about the challenges and
successes they experience in the classroom is needed. This should also be combined with the collaborative efforts of staff both vertically and horizontally within the NGO's primary education program committed to continuous professional development. If the NGO were to provide opportunities for teachers to contribute ideas or express concerns related to their teaching during the regular in-service training, it could potentially help overcome challenges such as teacher isolation while helping to empower teachers and increasing their self-confidence.

In the long term, efforts by the NGO to develop the professional identity of its teachers will need to proceed carefully. Based on the current mechanical and routine levels of use of the active learning approach among the majority of participants in this study, pedagogical adaptations by individual teachers potentially poses a danger to the NGO's notion of active learning. Individual pedagogical modifications tend to address only the teachers' immediate needs without enhancing student learning. Another threat posed by ad hoc changes in a teacher's use of the mandated active learning lessons is the narrowing of the definition and intended outcomes of the NGO's pedagogical approach. To avoid these problems, the NGO's professional development opportunities and support for teachers to develop beyond routine levels of use of active learning practices should occur through a collective, coordinated, and adaptive process of change.

According to Hopkins (2002), an adaptive approach is more sensitive to the context of the individual school and is concerned with developing a capacity for change within the school rather than adopting a specific approach. "What is clear is that conditions need to be created within the school that ensure that individuals are supported through the inevitably difficult and challenging process of altering their ways of thinking and doing" (Hopkins, 2002, p. 276). Two major challenges for the NGO include: (a) providing sufficient support for teachers to acquire the necessary behaviours and skills to modify their use of the innovation, and (b) providing sustained formative evaluation of teachers' use active learning to ensure that modifications to the active learning approach happen through a collaborative process involving teachers, trainers, and curriculum specialists.

**Professional development and support for teachers**

From the main research findings, I believe that continued professional development and support for teachers through a collaborative process addressing the role of the education provider (in this case, the NGO), the role of support staff, and the role of teachers can help support novice,
intermediate, and experienced teachers understand and more effectively implement the active learning approach (see Figure 10.1). First, the education provider (that is, the NGO's directors and senior education program officers) needs a coordinated and coherent approach to professional development. Second, the change facilitators (that is, the teacher trainers, supervisors, regional program officers, curriculum and material development team) need to understand the overarching goals of the NGO's primary education program and translate that into consistent support for teachers. Third, teachers must work together collaboratively in their pedagogical development and implementation of the active learning methods.

*Figure 10.1. Framework to support teacher professional development*

![Diagram](image)

**Role of the NGO**

Findings from interview and class observation data, that indicate variability of teachers' concerns, understanding, and fidelity implementing the active learning methodology, suggest that the NGO's administrators needs to maintain if not build upon its commitment to supporting professional development in a coherent manner. Perhaps, future professional development needs to find a balance between supporting teacher development that broadens the focus of teachers' concerns from simply "doing it right" according to the NGO's guidelines to doing what is best for students. If teachers are constantly trying to improve their practice they need support from the
NGO to innovate, implement, and avoid being rooted in institutionalized practice. To accomplish this change in teachers' professional practice, the NGO needs to support change that is both strategic and adaptive rather than what is often witnessed in the context of schools in low-income countries like Bangladesh as "cargo-cult" assumptions about the transferability and adoption of policy and practice of typically Western curricular constructs implemented in local South Asian contexts (Cowan, 1999, p. 73). Furthermore, recognition by the NGO that changes in teachers' attitudes and behaviours take time, can potentially result in an important shift in strategic planning and support for teachers' professional development. A growing emphasis and appreciation of leadership support among school supervisors and principals can also help to better support, evaluate, and promote different aspects of teacher development and teacher competency using active learning methods in the classroom.

**Role of support staff**

Although the existing professional development and support in the form of pre-service and regular in-service training appears to play a major role in helping teachers progress from novice to experienced teachers, variability in teacher performance is still prevalent. Findings from the study appear to indicate that teachers' efforts at acquiring information, reflecting upon their practice, and seeking out new ideas to improve their teaching were limited. Any effort by support staff including teacher trainers, school supervisors, and the curriculum and materials development team to improve teacher capacity in implementing the existing active learning approach must address these issues. Through a process of constant reflection of the teachers' pedagogical development along with targeted assessments or "measures" such as those provided by the Concerns-Based Adoption Model's diagnostic dimensions, both of which can occur during the regular in-service training sessions, may position the support staff in a stronger position to design and deliver meaningful and relevant professional development to teachers.

According to Hall and Hord (2006), "We strongly believe that each person's Level of Use and success with a change is in large measure influenced by the facilitation he or she receives. The facilitator's superficial knowledge base can provide only superficial support to the implemention of the innovation user" (p. 171). Therefore, change facilitators like the supervisor and teacher trainers must have a clear understanding and appreciation of the daily challenges facing teachers in addition to deep content knowledge of the NGO's active learning methods in
order to help teachers move along in their Level of Use. These requirements are supported by Hall and Hord (1987) who contend that "to be relevant to what a particular group of teachers perceives as problems and satisfactions, then staff development and related experiences should be designed and delivered with those differences in mind" (p. 55). Implementation studies like this dissertation can help educational organizations and schools redefine staff development and describe how roles and responsibilities must change to better implement the "standards" of an educational reform with greater reliability and competency.

**Role of teachers**

As teachers continue implementing active learning methods they need to be encouraged and closely supported by the NGO to take more of a leading role in their professional development and teaching. In Chapter 6, findings from my analysis of teachers' Levels of Use of active learning indicated that most were functioning at a routine level; their use of the innovation was going along satisfactorily with little variation in their delivery of lessons. To encourage teachers to progress towards a refinement in their use of active learning, the NGO needs to foster and support greater teacher-teacher collaboration. Building on the existing collaborative culture within the NGO as well as the existing infrastructure supporting teacher development, the NGO needs to provide school-based opportunities for teachers to collaborate by sharing ideas, stories, and experiences during regular in-service training. Within classroom settings, the establishment of support systems for teachers can also contribute to making professional development more relevant and useful to teachers. The existing role of principals can be broadened to include responsibility for mentoring new teachers, encouraging peer observations along with encouraging greater communication among teachers across schools. The continued development of the teachers' ability to implement the NGO's active learning model may also be a consequence of increased application, interpretation, and assessment of student data by teachers. It may also be a result of increasing levels of communication and sharing of teaching methodologies among teachers across school systems. Considering the continued scaling-up of the NGO's existing primary education program over the next few years, these types of collaborative teacher-focused efforts will be crucial towards maintaining adequate professional development and support for teachers.
The applicability of CBAM-based research in a non-Western context

Transferring and applying the CBAM diagnostic dimensions to non-Western contexts like Bangladesh is feasible although some premises of CBAM are not (in the case of this study) contextually relevant. As mentioned in Chapter 6, none of the participants in the study were classified as "non-users" of the pedagogical innovation. Despite the fact CBAM originated as a tool for measuring, documenting, and assessing the implementation of new programs, it can still provide worthwhile insights on teacher performance and understanding of an innovation that is well-established within schools. Another challenge researchers need to be cognizant of is the potential difficulty of ensuring accurate translations of concepts like teachers' "concerns". When using the open-ended concerns statement with teachers, it is important to emphasize to participants that the "concerns" need to be specific to the pedagogy and that concerns are not inherently always negative.

A second challenge a researcher may encounter is trying to accurately conceptualize teacher "concerns". When conducting research in a non-Western context, researchers may face a cross-cultural challenge of eliciting personal concerns from participants. Participants may struggle to understand the concept of "concerns" for a variety of reasons. One reason may be the language barrier when participants have little or no knowledge of the English language. Cultural differences may also result in participants feeling uncomfortable focusing on their own individual concerns, preferring instead to talk about concerns from the larger communal perspective of all teachers working with the NGO. Another possible explanation is that teachers may not experience the same types of emotions or feelings of professional concerns that are common in Western school settings. The possibility also exists that teachers do not have concerns related to their use of a particular pedagogical innovation. It appears that the teachers in this study had to contend with few consequences and/or received minimal feedback from supervisors or senior administrators related to the quality of their teaching, class management skills, or student learning outcomes. In such situations, if teachers are neither reprimanded for poor performance nor rewarded for their excellence then the question arises, "what is there to be professionally concerned about?" Finally, the difficulty with effectively translating the concept of "concerns" may be due to the fact that "concerns" are largely a Western construct based on ideas like: individual choice, performance evaluation, emphasis on personal results and success, and the
accompanying stress that arises from these types of concerns. These concerns may not be as prevalent in all schools in all countries.

A major strength of transferring CBAM-based research to a low-income country context like Bangladesh is that the process of developing and implementing CBAM-based research tools can support professional development for teachers, trainers, supervisors, and curriculum developers. For example, the development of the Innovation Configuration Map provides an effective way for poorly defined general pedagogical concepts like "active learning" to be locally specified through a collaborative process into terms and specific dimensions that have particular meaning for teacher practice in a particular context. Co-constructing the Innovation Configuration Maps with input and guidance from participants illustrates one way that CBAM instruments are not necessarily antithetical to local meaning-making. Furthermore, the iterative process of developing the Innovation Configuration Map provides an opportunity for teachers, trainers, and program developers to reflect on their understanding and experience with active learning, which may raise new questions, concerns, and insights not previously considered.

In this particular study, the challenges of developing the Innovation Configuration Map were complex and the lessons learned may provide worthwhile insights for other researchers considering using CBAM in non-Western educational contexts. First, I had to mediate between respecting the NGO's interpretation of active learning while still maintaining some rigour and setting parameters when developing definitions for the various components, dimensions, and variations. Often during the creation of the Innovation Configuration Map, the NGO's developers did not always delve deeply into the expertise and skill with which teachers implemented particular behaviours associated with the active learning approach. Often it remained at a level of documenting whether practices were simply being executed, not necessarily how well they were being executed. This was particularly challenging since CBAM is fundamentally more oriented towards implementation of well-defined programs or teaching methods. Second, I had to have a solid understanding and appreciation for the value that the NGO placed on their teachers' ability to implement the active learning method with a high degree of fidelity while also looking for evidence that teachers were varying their use or embracing a more "adaptive" approach to implementation. Third, I had to repeatedly explain to the NGO and the teachers involved in the study that the purpose of using CBAM research instruments was not to evaluate or assess teachers but to measure, document, and try to better understand the many variables that go into
the teachers' implementation of active learning for the purpose of professional development and implementation support. Despite these challenges, I would contend that the CBAM diagnostic dimensions are transferable to low-income country contexts like Bangladesh and may potentially provide new insights into teachers' understanding and use of pedagogical innovations like active learning.

**Implications for further research**

The findings presented in this dissertation offer important contributions to deepening our knowledge of the experiences of Bangladeshi primary school teachers as they adapt and implement innovative pedagogies into their practice. However, several recommendations for future studies arose from the findings that may contribute additional knowledge to the fields of teacher development as well as comparative, international and development education.

A qualitative research design around ways that central administrators, in particular school supervisors, can help develop professional community through their attention to individual teacher development is a study I am particularly interested in pursuing. Thus, a continuing line of research is framed by the question: How can school supervisors direct professional development assistance to individual teachers and teams of teachers? Moreover, we have little understanding about the development of professional learning communities from a comparative or international perspective. Further research questions that can be studied from the perspectives of classroom teachers, teacher trainers, and program developers working in schools include: How are school leaders promoting a culture of lifelong learning within schools? Pursuing these research questions would contribute to the literature on the role of central administrators in school improvement, and teacher development in low-income country contexts.

One of the main findings from this research suggests that on-going professional development for teachers can have a positive impact on teacher understanding and use of a particular innovation. Future research may explore the role of the central office in school improvement with a particular focus on job-embedded professional development for teachers. For example, several questions could include: To what extent does leadership among school heads and teachers support, evaluate, and promote teacher development? What impact can professional learning communities have on teacher development? This area of research has continued to expand in its various forms and incarnations fostering diverse developments and innovations.

Although this research intended to contribute to the literature on teacher change in the context of international and development education, the focus on sustainable education reform and related issues around student-centred pedagogies is potentially applicable to comparative education research. In particular, an analysis of teachers' beliefs, understanding, and practice with regard to the transfer and borrowing of Western ideas (like active learning) into non-Western contexts may contribute to this body of pedagogical research on how teachers adapt and redefine innovative pedagogies in low-income country contexts (Mundy, 2008; Niyozov, 2008; Silova & Steiner-Khamsi, 2008).

According to interview data analyzed in this dissertation, further research on the role of examinations and student assessments is largely missing from international and development education research. In particular, a study looking at the feasibility of the NGO's use of active learning and student-centred pedagogies, given the increasing demands of the competency-based curriculum and high-stakes examinations, would be of value to teacher trainers and those responsible for designing and developing curriculum and lesson plan guides for teachers.

Epilogue

I began this study believing that what goes on in classrooms, and the impact of teachers and teaching are the crucial variables for improving student learning. Yet, within the field of international and development education, there seemed to be little research focused specifically on the teacher change process. My sincere hope is that findings from this study of primary school teachers in Bangladesh will offer worthwhile insights into how teachers adapt and implement educational innovations into their practice leading to refinements in how we design professional development supports for teachers. After completing this study, I believe even more strongly that teachers are key to classroom and school improvement but recognize that sustained improvement requires continuous and comprehensive support from a variety of stakeholders. The continued development of pedagogical expertise among teachers requires much greater attention from school supervisors, head teachers, teacher trainers and curriculum specialists working collaboratively towards a shared set of goals and objectives. Those committed to professional development for teachers need to focus their efforts to establish both the structural conditions and
the norms for continuous improvement in order to establish school-based sustainable professional communities of teachers and learners. I also strongly believe that now that I have completed this doctoral study, I am better able to understand teachers' concerns, attitudes, behaviours, and use of pedagogical innovations, and I feel better equipped to help teachers, trainers, and education program planners design and implement more effective school and teacher development programs both locally and globally.
Reference List


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Fuller, F. F., Bown, O. H., & Peck, R. F. (1967). *Creating climates for growth* (No. 0002). Austin, TX: The University of Texas at Austin, Research and Development Center for Teacher Education.

Fuller, F. F., & Case, C. (1972). *A manual for scoring the teacher concerns statement* (No. 0003). Austin, TX: The University of Texas at Austin, Research and Development Center for Teacher Education.


Appendix 1: The Concerns-Based Adoption Model and Definitions

<table>
<thead>
<tr>
<th>Dimension of CBAM</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>The elliptical broken line identifies the boundary between the organization that will implement change and the external environment within which it lives (Hall &amp; Hord, 2006, p. 1).</td>
</tr>
<tr>
<td>User System:</td>
<td>The large ellipse symbolizes that the organization is engaging with change process. The various arrows within the model represent another key to the CBAM perspective. By consistently gathering information about the state of the system, facilitators can adapt and adjust their behavior to be more relevant to the particular context. As interventions are made, the system state changes, affecting individual users, groups, and their interrelationships (Hall &amp; Hord, 1987, p. 16). The CBAM provides a set of concepts and tools to help change facilitators think and work in an organic and adaptive process. According to the CBAM developers, different contexts place diverse constraints on what change facilitators can accomplish and, concurrently, develop unique opportunities for supporting change. Change facilitators differ in how skilled and effective they are in interpreting and using their context (Hall &amp; Hord, 1987, p. 15). More effective change facilitators identify opportunities in their contexts, while less effective change facilitators, in similar contexts, perceive more constraints and therefore fewer opportunities to facilitate (p. 15).</td>
</tr>
<tr>
<td><strong>Dimension of CBAM</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Resource System:</td>
<td>This represents external sources of expertise, support, and innovations.</td>
</tr>
<tr>
<td>Agent(s):</td>
<td>At the intersection of the two systems is a circle symbolizing the potential role of various <em>agents</em> that can intervene by using key diagnostic variables of SoC, LoU, and IC to monitor the change. The dilemma for the Agent(s) is to decide which resources to use, when to use them, and how to use them. Making such decisions requires an ongoing concerns-based diagnosis.</td>
</tr>
<tr>
<td>Individuals and Groups:</td>
<td>There exist a variety of combinations and interconnections within and among the individuals and groups that make up the organization.</td>
</tr>
<tr>
<td>Innovation Non-users and Users:</td>
<td>Three different levels of <em>nonusers</em> and five different <em>users</em> have been identified. They describe those who know very little or nothing at all about an innovation or change to the person [teacher] who has decided to use the new program or process. A key in making these distinctions is the type of adaptations that are being made by the user in use of the innovation or in the innovation itself (Hall &amp; Hord, 2006, p. 163).</td>
</tr>
<tr>
<td>Stages of Concern (SoC):</td>
<td>The research-based construct is used to illustrate ways of addressing the personal side of change.</td>
</tr>
<tr>
<td>Levels of Use (LoU):</td>
<td>This research-based construct focuses on the behaviors of each person as he or she gradually learns about and becomes a competent use of an innovation.</td>
</tr>
<tr>
<td>Innovation Configurations (IC):</td>
<td>This research-based construct is used to develop an Innovation Configuration Map (ICM), which is similar to a rubric for assessing innovation implementation.</td>
</tr>
</tbody>
</table>

APPENDIX 2: ETHICAL PROTOCOL

University of Toronto
Office of the Vice-President, Research
Office of Research Ethics

PROTOCOL REFERENCE #24375

September 15, 2009

Dr. Stephen Anderson  Mr. Jaddon Thomas Ray Park
OISE/ University of Toronto  OISE/ University of Toronto
252 Bloor St. West, 6th Floor  252 Bloor St. West, 6th Floor
Toronto, ON M5S 1V6  Toronto, ON M5S 1V6

Dear Dr. Anderson and Mr. Park,

Re: Your research protocol entitled “Teacher change in Bangladesh: A study of teachers adapting and implementing active learning into their practice”

ETHICS APPROVAL

| Original Approval Date: September 15, 2009 |
| Expiry Date: September 14, 2010 |
| Continuing Review Level: 1 |

We are writing to advise you that a member of the Social Sciences, Humanities & Education Research Ethics Board has granted approval to the above-named research study, for a period of one year, under the REB’s expedited review process. Please ensure that you submit an Annual Renewal Form or a Study Completion Report at least 30 days prior to the expiry date of your study.

The following consent documents (received August 10, 2009) have been approved for use in this study:

- Information Letter for Teachers and Principals/Head Teachers
- Informed Consent Form for Teacher and Principals/Head Teachers
- Information Letter for Supplementary Participants
- Informed Consent Form for Supplementary Participants

Any changes to the approved protocol or consent materials must be reviewed and approved through the amendment process prior to its implementation. Any adverse or unanticipated events should be reported to the Office of Research Ethics as soon as possible.

If your research has funding attached, please contact the relevant Research Funding Officer in Research Services to ensure that your funds are released.

Best wishes for the successful completion of your project.

Yours sincerely,

Daniel Gyetu
Research Ethics Coordinator

McMunich Building, 12 Queen's Park Cres. W, 2nd Floor Toronto, ON M5S 1S8
TEL: 416-946-3273 FAX: 416-946-5763 EMAIL: ethics.review@utoronto.ca
Appendix 3: Letter of Informed Consent

OISE
Ontario Institute for Studies in Education
UNIVERSITY OF TORONTO

Abhijit Kumar Anuradhaiah (এফআইডিভিবির চিকিৎসকরূপ, অধ্যক্ষ/ প্রধান চিকিৎসক)

নাম: _____________________________________________

এফআইডিভিবি বিদ্যালয়ের নাম: __________________________

আমি সর্বশেষ পত্র পাওয়া এবং বাংলাদেশের চিকিৎসকের পরিবর্তন: চিকিৎসকের 'গ্রন্থিবিদ্যা পত্র' তাদের পাঠানোর ব্যবস্থা এবং প্রয়োগ। নীতিক গবেষণাপত্র অংশ নিয়ে অর্জনীয়। আমি যদি সাক্ষাৎকার এবং প্রশ্নানুসারে তাদের এ কাজ পরিচালনে রাজি থাকি, তাহলে আমি তা যথাযথভাবে ধরা করতে সম্মত আছি।

প্রাক-সাক্ষাৎকার এবং কেবল উদ্ভূত সংশ্লিষ্ট বক্তব্য/ বিবৃতি

প্রাক-সাক্ষাৎকার এবং কেবল উদ্ভূত সংশ্লিষ্ট বিবৃতি, সাক্ষাৎকার এবং প্রশ্নানুসারে

পরিবর্তন

আমি জ্ঞাত প্রক্রিয়াক্রমের অংশ হিসাবে সাক্ষাৎকারের অংশ হিসেবে এবং উপায় ব্যবহারে অনুমতি দিচ্ছি, চিকিৎসক উদ্ধার প্রোগ্রামের জন্য তথ্য তত্ত্বাবধায়ক এই গবেষণাপত্র যেসব উপায় সংগ্রহ করা হয়েছে তাও ব্যবহারে সম্মত আছি।

নাম: _____________________________________________

ঝর্না: _____________________________________________

তারিখ: _____________________________________________

আপনার যদি কোন ই-মেইল ঠিকানা থেকে তবে তাও ব্যবহার করা যাবে।

ই-মেইল: ______________________________________________________________________________________________

আপনি যদি এই অধীন বিষয়ের ফলাফলে জানতে চান, এটিলিসিপি কপি এবং / অথবা চুক্তার এডিটিভেন্ড, তাহলে ই- মেইল ঠিকানা বা ভাবনাগুলো পাঠানোর ঠিকানাটি অনুযায়ী করে দিন।

ই-মেইল: ______________________________________________________________________________________________

ডাক: ______________________________________________________________________________________________
Appendix 4: Information Letter for Participants

OISE
Ontario Institute for Studies in Education
UNIVERSITY OF TORONTO

Ottawa (에스에이티치비-에스 플렉슨, 유효/프리랜서)

Dear Participants,

This Information Letter is provided to ensure full understanding of the study's purpose and procedures. Please read thoroughly before participating.

1) The study, which is part of a larger research project, aims to collect data on the effectiveness of a new educational intervention. The data will be used to evaluate its impact on student learning outcomes.

2) Participants will be asked to complete a series of assessments before and after the intervention. These assessments will help measure the effectiveness of the intervention.

3) Participation is voluntary, and no personal information will be collected from participants. Data will be kept confidential and will only be used for research purposes.

4) All participants will receive a summary of the research findings and an overview of the study's impact on educational practices.

Thank you for your participation in this important study.

Sincerely,

[Signature]

Ontario Institute for Studies in Education
University of Toronto
152 Bloor St. W
Toronto, ON, Canada M6G 1V6
www.oise.utoronto.ca


"The author is a consultant to the World Health Organization and a member of the Indian Medical Association. He has been involved in various research projects related to public health and disease prevention."

Appendix 5: Letter of Confidentiality

OISE
ONTARIO INSTITUTE FOR STUDIES IN EDUCATION
UNIVERSITY OF TORONTO

Letter of Confidentiality

Date:

Dear (Translator/Transcriber Name)......................................,

As part of the study titled, Teacher change in Bangladesh: A study of teachers adapting and implementing active learning into their practice, I will provide you with access to confidential and personal information concerning the participants and the organization Friends in Village Development Bangladesh (FIVDB). In consideration of providing you with confidential information you are required to accept and comply with the following terms and conditions:

- You will maintain the confidential and personal information about participants and FIVDB in the strictest confidence and will not divulge any of the information to any third party without our prior written permission.
- You will not make use of the confidential or personal information other than for the purpose of the research study titled, Teacher change in Bangladesh: A study of teachers adapting and implementing active learning into their practice.

You acknowledge that:

- The information and data collected in this study is highly confidential.
- Any use or outside knowledge of the confidential information collected may be damaging to the participants or FIVDB.

If you have any questions or would like more information about my study, please contact Jaddon Park at jaddon.park@utoronto.ca or phone 01715100273; or my faculty supervisor, Stephen Anderson at sanderson@oise.utoronto.ca or phone 601 416 978 1156.

Please indicate your acceptance of the above by signing and returning the enclosed copy of this letter.

Sincerely,

Jaddon Park
Doctoral Candidate
OISE/UT

Ontario Institute for Studies in Education
University of Toronto
235 Bloor St. West
Toronto, ON, Canada M6S 356
www.oise.utoronto.ca
Date:

Re: Letter of Confidentiality

I refer to your letter of confidentiality dated [ ] and agree to the terms listed in the above.

______________________________
Translator/Transcriber Name (please print)

______________________________
Translator/Transcriber Signature

______________________________
Witness Name (please print)

______________________________
Witness Signature
Appendix 6: Research Design

**DATA COLLECTION [SoC]**
- Administer open-ended statement of concerns and questionnaire to 51 teachers chosen by stratified random sampling
- Collect school background data

**DATA ANALYSIS [SoC]**
- Interpretation of concerns statements is done qualitatively (assessed according to the CBAM Stages of Concern profile)
- Document analysis of “archived” data

**DATA RESULTS [SoC]**
1. Identify emerging themes and variables
2. Identification of 10 participants for Phase 2

**DATA COLLECTION [3 interviews]**
- Structured & semi-structured interview strategies used
- Field notes compiled

**DATA ANALYSIS [Interviews with primary & secondary participants]**
- Grounded theory approach employed to analyze qualitative interview data

**DATA COLLECTION [IC Map]**
- IC Map developed in collaboration with NGO partner
- Repeated direct classroom observations conducted
- Field notes compiled

**DATA ANALYSIS [IC MAP]**
- Grounded theory approach employed to analyze qualitative classroom observations
- Analyze results obtained from IC Maps

**INTERPRETATION OF RESULTS**
- Multiple QUAL results (SoC, LoU, IC Map, Social Constructivist & Context findings) consolidated

**PRESENTATION OF FINDINGS**
Appendix 7: Development of Innovation Configuration Map for Active Learning

1. **STEP 1**
   - Ask developer for innovation components
   - Develop a list of components, dimensions, and variations
   - Ask facilitator for innovation components
   - Interview a small number of users (teachers)
   - Observe a small number of users (teachers)
   - Adjust and expand the list of components, dimensions, and variations

2. **STEP 2**
   - Draft IC Map

3. **STEP 3**
   - Interview developers, referring to components and variations on draft
   - Develop questions to use with a large sample of teachers implementing the innovation

4. **STEP 4**
   - Interview and observe a range of users
   - Construct a semifinal checklist, check with the innovation expert, and make final revisions

Source: Hord, Stiegelbauer, Hall, & George (2006)
**STEP 1: Identifying innovation components**

The first step requires the identification of components, or the major operational features, of the innovation (active learning). When it is possible to interview the program developer(s), the following questions help delineate components.

(a) Would you describe for me active learning?

As the developer(s) begins to describe each component, probe for more details using the following questions:
- What would active learning look like when it is in use?
- What do teachers do?
- What do students do?
- How do students and teachers interact?

(b) What would I see in a classroom where the innovation is in use?

(c) What do you consider the most essential components of the innovation?

Further information can be probed by questions such as the following:
- Tell me more about active learning.
- You mentioned that [x, y, z] are important parts of your innovation. What are some other parts?

(d) In order to identify the different ways each component might be exhibited in the classroom (that is, the variations), ask the following questions for each of the components named by the developer:
- What if active learning was not going exactly like [description above]?
- What are some other ways it might look? Can you give me a version of the component [x, y, z] that would be unacceptable to you?
- How would you like this component to be used in the classroom?
- How is it typically used?

**STEP 2: Identifying additional components and variations**

Next, it is important to observe the innovation in use and to interview some of the individuals who are implementing the innovation. The following questions are useful when interviewing teachers who are implementing the innovation. These questions could also be used as a basis for observation:
- Would you describe the innovation for me?
- What would I see if I visited your classroom while you were using the innovation?
- What would you be doing in the classroom?
- What would your students be doing?
STEP 3: Refining the IC Map

If possible, return to the developer to discuss what I have seen and heard while interviewing and observing users in Step 2. At this point care must be taken to:

• standardize the IC Map’s format
• use language appropriate for the user
• distinguish between critical and related components
• note any differences in variations due to student characteristics - or grade variations

The last part of Step 3 involves sketching questions and observation guidelines to use with a larger sample of users.

STEP 4: Testing and finalizing the IC Map

This step involves testing the early draft by actually using the IC Map to observe and interview a wide range of implementers.

Source: Hord, Stiegelbauer, Hall, & George (2006)
Appendix 8: Pre-interview Questionnaire (English)

Please complete the following questions:

1. Age: __________

2. Gender: ____________________

3. Highest educational level attained:
   - ☐ SSC  ☐ HSC  ☐ Bachelors  ☐ Masters

4. Name of school: ____________________________________________________________

5. Position in school (please check all that apply):
   - ☐ Head Teacher  ☐ Teacher

6. How long have you been in this position?
   - ☐ less than 2 years  ☐ 2 - 5 years  ☐ more than 5 years

7. What are your teaching responsibilities? (please check all that apply)
   - ☐ Class 1  ☐ Class 2  ☐ Class 3  ☐ Class 4  ☐ Class 5

8. In your use of ACTIVE-LEARNING, do you consider yourself to be a:
   - ☐ nonuser  ☐ novice  ☐ intermediate  ☐ specialist  ☐ past user

9. During this school year, have you received formal training in ACTIVE-LEARNING (workshops, courses)?
   - ☐ Yes  ☐ No

Thank you for taking the time to complete this questionnaire
Pre-interview Questionnaire (Bengali)

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প্রাক-সাক্ষাৎকার প্রশ্নাবলী

অনুরূপভাবে নিচের প্রশ্নগুলোর উত্তর দিন:

১. বয়স:

২. পিষ:

৩. সর্বোচ্চ শিক্ষিত মৌলায়তা:

☐ মাধ্যমিক ☐ উত্তরমাধ্যমিক ☐ গুরুকুল ☐ সামাজিক

৪. বিদ্যালয়ের নাম:

৫. বিদ্যালয়ে আসন দেওয়ার পদ্ধতিটি (এখানে যখন উল্লেখ করা হয়েছে তা নেয়া)

☐ প্রধান শিক্ষক ☐ পিষক

৬. কত বছর ধরে আপনি এই পদ্ধতিতে কার্যকর আছেন?

☐ ২ বছরের কম সময় ☐ ২-৫ বছর ☐ পিষ বছরের অধিক

৭. শিক্ষক হিসেবে আপনি কোন শ্রেণীর শিক্ষাদাতা পালন করেন? (এখানে যখন উল্লেখ করা হয়েছে তা নেয়া)

☐ প্রধান শিক্ষক ☐ বিদ্যালয় শিক্ষক ☐ কৃত্তিয় শিক্ষক ☐ চর্চা শিক্ষক ☐ সাধারণ শিক্ষক

৮. 'গ্রন্থাগত শিক্ষা' পদ্ধতি গ্রহণে আপনি কি কোন ক্রমে উল্লেখ করে বিদেশ করেন?

☐ অবস্থানীয় / অবস্থানহীন / পাসন ☐ শিক্ষানীতি ☐ মাধ্যম / মাধ্যমিক ☐ বিশেষ / দক্ষ

৯. এই বিদ্যালয়ে ধারকালীন আপনি কি কোন 'গ্রন্থাগত শিক্ষা' পদ্ধতির উপর আনুষ্ঠানিক শিক্ষক (কর্মশালা, প্রাথমিক) এনে করেন?

☐ হ্যাঁ ☐ না

প্রশ্নগুলোর উত্তর দেয়ার জন্য ধন্যবাদ।
Appendix 9: Open-ended Concerns Statement (English)

Thank you for participating in my study. Please complete the questions that will ask you about your experience as a teacher. All information will be kept confidential and at no time will it be shared with any parties other than my thesis supervisor, Dr. Stephen Anderson. It will be used only to develop an accurate description of the group of individuals involved in this study.

Name  (Optional) _____________________________________________________________

The purpose of the open-ended question on the next page is to determine what people who are using or thinking about using innovations are concerned about at various times during the innovation adoption process.

Please respond in terms of your present concerns, or how you feel about your involvement or potential involvement with the innovation of ACTIVE LEARNING. We do not hold to any one definition of this innovation, so please think of it in terms of your own perceptions of what active learning involves. Remember to respond in terms of your present concerns about your involvement or potential involvement with ACTIVE LEARNING.

Thank you very much for your participation.
Response Sheet

Please answer the following question. Do not say what you think others are concerned about, but only what concerns you now. Please write in complete sentences, and be as open as you can.

When you think about using active-learning, what are you concerned about?
Open-ended Concerns Statement (Bengali)

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আমার অভ্যাসের সাথে সংস্কৃতি ধারার জন্য ধন্যবাদ। এফআইডির শিক্ষক ধারার অভিজ্ঞতা সম্পর্কে যা প্রকাশ করে একটি জনবিদ্যা দিতে হবে অনুপ্রাণ করে তার জন্য দিন। সব তথ্য গোপনীয় রাখা হবে এবং কেবল আমার পরিকল্পনা তথ্যের অধিকারকে ডার্কনেস ছাড়া অন্য কারণে সাথে অ্যাডমিশন করা যাবেনা। এই গবেষণায় অংশ নেওয়া তথ্য ব্যবহার করা হবে।

নাম ______________________________

যারা উদ্যোক্তা প্রতিক্রিয়া ব্যবহার করেন বা যারা নমমেধ সংস্কার পরিকল্পনা প্রতিক্রিয়া সম্পর্কে চিন্তা-ভাবনা করেন, পরবর্তী পৃষ্ঠার উপাদান প্রকাশ করা হয়েছে।

অনুরূপে একটি প্রকাশনা প্রকাশনের বিষয়ে আপনার বিনিয়োগ সম্পর্কে জনবিদ্যা প্রকাশ করেন। আপনার বিনিয়োগ দৃষ্টিভঙ্গি থেকে শিক্ষার উপসাগরীয় সাথে ধরার অনুপ্রাণ রইল। একটি আপনার একটি প্রকাশনা শিক্ষার বর্তমান অভিজ্ঞতার সাথে সম্পূর্ন মান দিয়ে যাবে।

আপনার অ্যাডমিশনের জন্য ধন্যবাদ।
অনুরুপ করে নিচের প্রশ্নটির উত্তর দিন কেন্দ্রে এই বিষয়টি নিয়ে কি ভাবছে তা না বরং আপনি এই বিষয়টি নিয়ে বর্তমানে কি ভাবছেন তা বলবেন। অনুরুপ করে যতটুকু সম্ভব খোলামোল লিখিত উত্তর প্রদান করবেন।

| যখন আপনি আপনার ক্লাসে শিক্ষারকে পড়ালো সম্পর্কে চিন্তা করেন তখন আপনি কোন বিষয়কে গুরুত্ব দেন বা কোন কোন বিষয় নিয়ে চিন্তিত থাকেন? |
Appendix 10: Levels of Use Interview Protocol (Branching chart)

Are you using active-learning in your classroom?

- NO LoU 0,1
- YES LoU 0,1,2

Have you decided to use it and set a date to begin use?

- NO
  - NO LoU 0,1
  - YES LoU 0,1,2

- YES
  - II

Are you currently looking for information about active-learning?

- NO
  - 0
- YES
  - I

Are you coordinating your use with other teachers, including another not in your original group of teachers?

- NO
  - IV A
- YES
  - IMPACT-ORIENTED LoU4B, 5, 6

What kinds of changes are you making in your use of active-learning?

- NOTHING UNUSUAL
- IMPACT-ORIENTED LoU4B, 5, 6

Are you planning or exploring making major modifications or replacing active-learning?

- NO
  - IV A
- YES
  - VI

Source: Hord, Hall, & George, (2006)
Appendix 11: Levels of Use Basic Interview Protocol

The Levels of Use interview is organized around the Decision Points and the branching format. The questions shown in the branching chart must be asked for each branch taken during the interview. After the first question is asked and it is established that the person is or is not using the innovation, the appropriate branches are followed and the appropriate Levels of Use interview questions must be asked. (see next page)
<table>
<thead>
<tr>
<th>Question</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you using active learning?</td>
<td>To distinguish between users and nonusers; to break LoU 0-II from LoU III-VI</td>
</tr>
</tbody>
</table>

**IF YES**

<table>
<thead>
<tr>
<th>Question</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you see as the strengths and weaknesses of active learning in your situation? Have you made any attempt to do anything about the weakness?</td>
<td>To probe Assessing and Knowledge Categories.</td>
</tr>
<tr>
<td>Do you ever talk with others about active learning? What do you tell them?</td>
<td>To probe Sharing Category and check Decision Point E.</td>
</tr>
<tr>
<td>What do you see as being the effects of active learning? In what way have you determined this? Are you doing any evaluating, either formally or informally, of your use of active learning? Have you received any feedback from students? What have you done with the information you get?</td>
<td>To probe Assessing Category.</td>
</tr>
<tr>
<td>Have you made any changes recently in how you use active learning? What? Why? How recently? Are you considering making any changes?</td>
<td>To distinguish between LoU III (user-oriented changes), LoU IVB (impact-oriented changes), and LoU IVA (no or routine changes); to probe Status Reporting and Performing Categories.</td>
</tr>
<tr>
<td>As you look ahead to later this year, what plans do you have in relation to your use of active learning?</td>
<td>To probe Planning and Status Reporting Categories.</td>
</tr>
<tr>
<td>Are you working with others (outside of anyone you may have worked with from the beginning) in your use of active learning? Have you made any changes in your use of active learning based on this coordination?</td>
<td>To separate LoU V from III, IVA and IVB. If a positive response is given, LoU V probes (below) are used.</td>
</tr>
<tr>
<td>Question</td>
<td>Purpose</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Are you considering making or planning to make major modifications or to replace active learning at this time?</td>
<td>To separate LoU VI from III, IVA, IVB, and V.</td>
</tr>
<tr>
<td><strong>LoU V Probes</strong></td>
<td></td>
</tr>
<tr>
<td>How do you work together? How frequently?</td>
<td>To verify Decision Point E; to probe Performing Category.</td>
</tr>
<tr>
<td>What are the strengths and the weaknesses of this collaboration for you?</td>
<td>To probe Knowledge Category.</td>
</tr>
<tr>
<td>Are you looking for any particular kind of information in relation to this collaboration?</td>
<td>To probe Acquiring Information Category.</td>
</tr>
<tr>
<td>When you talk to others about your collaboration, what do you share with them?</td>
<td>To probe Sharing Category.</td>
</tr>
<tr>
<td>Have you done any formal or informal evaluation of how your collaboration is working?</td>
<td>To Probe Assessing Category.</td>
</tr>
<tr>
<td>What plans do you have for this collaborative effort in the future?</td>
<td>To probe Planning Category.</td>
</tr>
<tr>
<td>Can you summarize for me where you see yourself right now in relation to the use of active learning? (Optional question)</td>
<td>To get a concise picture of the user’s perception of his/her use or nonuse.</td>
</tr>
<tr>
<td><strong>IF NO</strong></td>
<td></td>
</tr>
<tr>
<td>Have you made a decision to use active learning in the future? If so, when?</td>
<td>To separate LoU 0 from I; to probe Status Reporting, Planning, and Performing Categories; to separate LoU I from II.</td>
</tr>
<tr>
<td>Can you describe active learning for me as you see it?</td>
<td>To probe Knowledge Category.</td>
</tr>
<tr>
<td>Question</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>What are the strengths and weaknesses of active learning for your situation?</td>
<td>To probe Assessing Category.</td>
</tr>
<tr>
<td>At this point in time, what kinds of questions are you asking about active learning? Give examples if possible.</td>
<td>To probe Assessing, Sharing, and Status Reporting Categories.</td>
</tr>
<tr>
<td>Do you ever talk with others and share information about active learning? What do you share?</td>
<td>To probe Sharing Category.</td>
</tr>
<tr>
<td>What are you planning with respect to active learning? Can you tell me about any preparation or plans you have been making for the use of active learning?</td>
<td>To probe Planning Category.</td>
</tr>
<tr>
<td>Can you summarize for me where you see yourself right now in relation to the use of active learning? (Optional question)</td>
<td>To get a concise picture of the user’s perception of his/her use or nonuse of active learning.</td>
</tr>
</tbody>
</table>

**Past-User Questions**

<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why did you stop using active learning?</td>
</tr>
<tr>
<td>Can you describe for me how you organized your use of active learning, what problems you found, and what its effects appeared to be on students?</td>
</tr>
<tr>
<td>When you assess active learning at this point in time, what are its strengths and weaknesses for you?</td>
</tr>
</tbody>
</table>

Source: Hall, Dirksen, & George, (2006)
## Appendix 12: Levels of Use (LoU) of the Innovation

### Section I

<table>
<thead>
<tr>
<th>SCALE POINT</th>
<th>CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitions of the Levels of Use of the Innovation</td>
<td>KNOWLEDGE</td>
</tr>
<tr>
<td>Levels of Use are distinct states that represent observably different types of behaviour and patterns of innovation use as exhibited by individuals and groups. These levels characterize a user's development in acquiring new skills and varying use of the innovation. Each level encompasses a range of behaviours but is limited by a set of identifiable Decision Points. For descriptive purposes, each level is defined by seven categories.</td>
<td>That which the user knows about characteristics of the innovation, how to use it, and consequences of its use. This is cognitive knowledge related to using the innovation, not feelings or attitudes.</td>
</tr>
<tr>
<td>LEVEL 0 NONUSE: State in which the use has little or no knowledge of the innovation, has no involvement with the innovation, and is doing nothing toward becoming involved.</td>
<td>Knows nothing about this or similar innovations or has only very limited general knowledge of efforts to develop innovations in the area.</td>
</tr>
<tr>
<td>DECISION POINT A</td>
<td>Takes action to learn more detailed information about the innovation.</td>
</tr>
<tr>
<td>LEVEL I ORIENTATION: State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands upon the user and the user system.</td>
<td>Knows general information about the innovation such as origin, characteristics, and implementation requirements.</td>
</tr>
<tr>
<td>DECISION POINT B</td>
<td>Makes a decision to use the innovation by establishing a time to begin.</td>
</tr>
<tr>
<td>LEVEL II PREPARATION: State in which the use is preparing for first use of the innovation.</td>
<td>Knows logistical requirements, necessary resources and timing for initial use of the innovation, and details of initial experiences for clients.</td>
</tr>
<tr>
<td>DECISION POINT C</td>
<td>Changes, if any, and use are dominated by user needs. Clients may be valued, however, management, time, or limited experimental knowledge dictate what the use does.</td>
</tr>
<tr>
<td>LEVEL III MECHANICAL USE: State in which the use focuses most</td>
<td>Knows on a day-to-day basis the requirements for using the</td>
</tr>
<tr>
<td>SCALE POINT</td>
<td>Definitions of the Levels of Use of the Innovation</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td><strong>KNOWLEDGE</strong></td>
</tr>
<tr>
<td>effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet use needs than client needs. The use is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.</td>
<td>innovation. Is more knowledgeable on short-term activities and effects than long-range activities and effects of use of the innovation.</td>
</tr>
</tbody>
</table>

| DECISION POINT D - 1 | A routine pattern of use is established. Changes for clients may be made routinely, but there are no recent changes outside the pattern. | Knows both short- and long-term requirements for use and how to use the innovation with minimum effort or stress. | Makes no special effort to seek information as a part of ongoing use of the innovation. |

| LEVEL IV A ROUTINE: Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences. | Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes. The changes must be recent. | Knows cognitive and affective effects of the innovation on clients and ways for increasing impact on clients. | Solicits information and materials that focus specifically on challenging use of the innovation to affect client outcomes. |

| DECISION POINT D - 2 | Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing. | Knows how to coordinate own use of the innovation with colleagues to provide a collective impact on clients. | Solicits information and opinions for the purpose of collaborating with others in use of the innovation. |

<p>| LEVEL V INTEGRATION: State in which the user is combining own efforts to use the innovation with the related activities of colleagues to achieve a collective impact on clients w/in their sphere of influence. | Begins exploring alternatives or major modifications to the innovation presently in use. | Knows of alternatives that could be used to change or replace the present innovation that would improve the quality of outcomes of its use. | Seeks information and materials about other innovations as alternatives to the present innovation or for making major adaptations in the innovation. |</p>
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</tr>
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<td>DECISION POINT A</td>
<td>Takes action to learn more detailed information about the innovation.</td>
<td>Takes action to learn more detailed information about the innovation.</td>
</tr>
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<td>LEVEL I ORIENTATION: State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands upon the user and the user system.</td>
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</tr>
<tr>
<td>DECISION POINT B</td>
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</tr>
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</tr>
<tr>
<td>DECISION POINT C</td>
<td>Changes, if any, and use are dominated by user needs. Clients may be valued, however, management, time, or limited experimental knowledge dictate what the use does.</td>
<td>Changes, if any, and use are dominated by user needs. Clients may be valued, however, management, time, or limited experimental knowledge dictate what the use does.</td>
</tr>
<tr>
<td>SCALE POINT</td>
<td>Definitions of the Levels of Use of the Innovation</td>
<td>CATEGORIES</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>LEVEL III MECHANICAL USE:</td>
<td>State in which the use focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet use needs than client needs. The use is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.</td>
<td>KNOWLEDGE: Discusses management and logistical issues related to use of the innovation. Resources and materials are shared for purposes of reducing management, flow, and logistical problems related to use of the innovation. ACQUIRING INFORMATION: Examines own use of the innovation with respect to problems of logistics, management, time, schedules, resources, and general reactions of clients.</td>
</tr>
<tr>
<td>DECISION POINT D - 1</td>
<td>A routine pattern of use is established. Changes for clients may be made routinely, but there are no recent changes outside the pattern.</td>
<td></td>
</tr>
<tr>
<td>LEVEL IV A ROUTINE:</td>
<td>Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.</td>
<td>DESCRIBES CURRENT USE OF THE INNOVATION WITH LITTLE OR NO REFERENCE TO WAYS OF CHANGING USE. LIMITS EVALUATION ACTIVITIES TO THOSE ADMINISTRATIVELY REQUIRED, WITH LITTLE ATTENTION PAID TO FINDINGS FOR THE PURPOSE OF CHANGING USE.</td>
</tr>
<tr>
<td>DECISION POINT D - 2</td>
<td>Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes. The changes must be recent.</td>
<td></td>
</tr>
<tr>
<td>LEVEL IV B REFINEMENT:</td>
<td>State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.</td>
<td>DISCUSSES OWN METHODS OF MODIFYING USE OF THE INNOVATION TO CHANGE CLIENT OUTCOMES. ASSESSES USE OF THE INNOVATION FOR THE PURPOSE OF CHANGING CURRENT PRACTICES TO IMPROVE CLIENT OUTCOMES.</td>
</tr>
<tr>
<td>DECISION POINT E</td>
<td>Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing.</td>
<td></td>
</tr>
<tr>
<td>LEVEL V INTEGRATION:</td>
<td>State in which the user is combining own efforts to use the innovation with the related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.</td>
<td>DISCUSSES EFFORTS TO INCREASE CLIENT IMPACT THROUGH COLLABORATION WITH OTHERS ON PERSONAL USE OF THE INNOVATION. APPRAISES COLLABORATIVE USE OF THE INNOVATION IN TERMS OF CLIENT OUTCOMES AND STRENGTHS AND WEAKNESSES OF THE INTEGRATED EFFORT.</td>
</tr>
<tr>
<td>DECISION POINT F</td>
<td>Begins exploring alternatives or major modifications to the innovation presently in use.</td>
<td></td>
</tr>
<tr>
<td>LEVEL VI RENEWAL:</td>
<td>State in which the use reevaluates the quality of use of the innovations, seeks major modifications or alternatives to the</td>
<td>FOCUSES DISCUSSIONS ON IDENTIFICATION OF MAJOR ALTERNATIVES TO OR REPLACEMENTS FOR THE CURRENT INNOVATION. ANALYZES ADVANTAGES AND DISADVANTAGES OF MAJOR MODIFICATIONS OR ALTERNATIVES TO THE PRESENT INNOVATION.</td>
</tr>
<tr>
<td>SCALE POINT Definitions of the Levels of Use of the Innovation</td>
<td>CATEGORIES</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KNOWLEDGE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACQUIRING INFORMATION</td>
<td></td>
</tr>
<tr>
<td>present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self &amp; system.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Section II**

<table>
<thead>
<tr>
<th>SCALE POINT Definitions of the Levels of Use of the Innovation</th>
<th>CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SHARING</td>
</tr>
<tr>
<td></td>
<td>ASSESSING</td>
</tr>
<tr>
<td>Levels of Use are distinct states that represent observably different types of behaviour and patterns of innovation use as exhibited by individuals and groups. These levels characterize a user's development in acquiring new skills and varying use of the innovation. Each level encompasses a range of behaviours but is limited by a set of identifiable Decision Points. For descriptive purposes, each level is defined by seven categories.</td>
<td>Discusses the innovation with others. Shares plans, ideas, resources, outcomes, and problems related to use of the innovation.</td>
</tr>
<tr>
<td><strong>LEVEL 0 NONUSE</strong>: State in which the use has little or no knowledge of the innovation, has no involvement with the innovation, and is doing nothing toward becoming involved.</td>
<td>Is not communicating with others about the innovation beyond possibly acknowledging that the innovation exists.</td>
</tr>
<tr>
<td>DECISION POINT A</td>
<td>Takes action to learn more detailed information about the innovation.</td>
</tr>
<tr>
<td><strong>LEVEL I ORIENTATION</strong>: State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands upon the user and the user system.</td>
<td>Discusses the innovation in general terms and/or exchanges descriptive information, materials, or ideas about the innovation and possible implications of its use.</td>
</tr>
<tr>
<td>DECISION POINT B</td>
<td>Makes a decision to use the innovation by establishing a time to begin.</td>
</tr>
<tr>
<td><strong>LEVEL II PREPARATION</strong>: State in which the use is preparing for first use of the innovation.</td>
<td>Discusses resources needed for initial use of the innovation. Joins others in pre-use</td>
</tr>
<tr>
<td>SCALE POINT</td>
<td>Definitions of the Levels of Use of the Innovation</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>SHARING</td>
</tr>
<tr>
<td></td>
<td>training, and in planning for resources, logistics, schedules, etc., in preparation for its first use.</td>
</tr>
<tr>
<td>DECISION POINT C</td>
<td>Changes, if any, and use are dominated by user needs. Clients may be valued, however, management, time, or limited experimental knowledge dictate what the use does.</td>
</tr>
<tr>
<td>LEVEL III MECHANICAL USE:</td>
<td>State in which the use focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet use needs than client needs. The use is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.</td>
</tr>
<tr>
<td>DECISION POINT D - 1</td>
<td>A routine pattern of use is established. Changes for clients may be made routinely, but there are no recent changes outside the pattern.</td>
</tr>
<tr>
<td>LEVEL IV A ROUTINE:</td>
<td>Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.</td>
</tr>
<tr>
<td>DECISION POINT D - 2</td>
<td>Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes. The changes must be recent.</td>
</tr>
<tr>
<td>LEVEL IV B REFINEMENT:</td>
<td>State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.</td>
</tr>
<tr>
<td>DECISION POINT E</td>
<td>Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing.</td>
</tr>
<tr>
<td>LEVEL V INTEGRATION:</td>
<td>State in which the user is combining own efforts to use the innovation with the related activities of colleagues to achieve a collective impact on clients within their common sphere of</td>
</tr>
</tbody>
</table>
### SCALE POINT Definitions of the Levels of Use of the Innovation

<table>
<thead>
<tr>
<th>LEVEL VI RENEWAL: State in which the use reevaluates the quality of use of the innovations, seeks major modifications or alternatives to the present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self &amp; system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECISION POINT F</td>
</tr>
<tr>
<td>Begins exploring alternatives or major modifications to the innovation presently in use.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEL 0 NONUSE: State in which the use has little or no knowledge of the innovation, has no involvement with the innovation, and is doing nothing toward becoming involved.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECISION POINT A</td>
</tr>
<tr>
<td>Takes action to learn more detailed information about the innovation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEL I ORIENTATION: State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLANING</td>
</tr>
<tr>
<td>Designs and outlines short- and/or long-range steps to be taken during process of innovation adoption, i.e., aligns resources with others to organize and/or coordinate use of the innovation.</td>
</tr>
</tbody>
</table>

| STATUS REPORTING |
| Reports little or no personal involvement with the innovation. |

### Section III

<table>
<thead>
<tr>
<th>LEVEL VI RENEWAL: State in which the use reevaluates the quality of use of the innovations, seeks major modifications or alternatives to the present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self &amp; system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECISION POINT F</td>
</tr>
<tr>
<td>Begins exploring alternatives or major modifications to the innovation presently in use.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEL 0 NONUSE: State in which the use has little or no knowledge of the innovation, has no involvement with the innovation, and is doing nothing toward becoming involved.</th>
</tr>
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<tbody>
<tr>
<td>DECISION POINT A</td>
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<tr>
<td>Takes action to learn more detailed information about the innovation.</td>
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</table>

<table>
<thead>
<tr>
<th>LEVEL I ORIENTATION: State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLANING</td>
</tr>
<tr>
<td>Designs and outlines short- and/or long-range steps to be taken during process of innovation adoption, i.e., aligns resources with others to organize and/or coordinate use of the innovation.</td>
</tr>
</tbody>
</table>

<p>| STATUS REPORTING |
| Reports little or no personal involvement with the innovation. |</p>
<table>
<thead>
<tr>
<th>SCALE POINT</th>
<th>Definitions of the Levels of Use of the Innovation</th>
<th>CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PLANNING</td>
<td>STATUS REPORTING</td>
</tr>
<tr>
<td>decisions upon the user and the user system.</td>
<td>Makes a decision to use the innovation by establishing a time to begin.</td>
<td></td>
</tr>
<tr>
<td><strong>DECISION POINT B</strong></td>
<td>Identifies steps and procedures entailed in obtaining resources and organizing activities and events for initial use of the innovation.</td>
<td>Reports preparing self for initial use of the innovation.</td>
</tr>
<tr>
<td><strong>LEVEL II PREPARATION</strong></td>
<td>Changes, if any, and use are dominated by user needs. Clients may be valued, however, management, time, or limited experimental knowledge dictate what the use does.</td>
<td></td>
</tr>
<tr>
<td><strong>LEVEL III MECHANICAL USE</strong></td>
<td>Plans for organizing and managing resources, activities, and events related primarily to immediate ongoing use of the innovation. Planned-for changes address managerial or logistical issues with a short-term perspective.</td>
<td>Reports that logistics, time, management, resource organization, etc., are the focus of most personal efforts to use the innovation.</td>
</tr>
<tr>
<td><strong>DECISION POINT C</strong></td>
<td>A routine pattern of use is established. Changes for clients may be made routinely, but there are no recent changes outside the pattern.</td>
<td></td>
</tr>
<tr>
<td><strong>LEVEL IV A ROUTINE</strong></td>
<td>Plans for intermediate and long-range actions with little projected variation in how the innovation will be used. Planning focuses on routine use of resources, personnel, etc.</td>
<td>Reports that personal use of the innovation is going along satisfactorily with few if any problems.</td>
</tr>
<tr>
<td><strong>DECISION POINT D - 1</strong></td>
<td>Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes. The changes must be recent.</td>
<td></td>
</tr>
<tr>
<td><strong>LEVEL IV B REFINEMENT</strong></td>
<td>Develops intermediate and long-range plans that anticipate possible and needed steps, resources, and events designed to enhance client outcomes.</td>
<td>Reports varying use of the innovation in order to change client outcomes.</td>
</tr>
<tr>
<td><strong>DECISION POINT E</strong></td>
<td>Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing.</td>
<td></td>
</tr>
</tbody>
</table>
### SCALE POINT Definitions of the Levels of Use of the Innovation

<table>
<thead>
<tr>
<th>LEVEL V INTEGRATION: State in which the user is combining own efforts to use the innovation with the related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.</th>
<th>PLANNING</th>
<th>STATUS REPORTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plans specific actions to coordinate own use of the innovation with others to achieve increased impact on clients.</td>
<td>Reports spending time and energy collaborating with others about integrating own use of the innovation.</td>
<td></td>
</tr>
</tbody>
</table>

| DECISION POINT F | Begins exploring alternatives or major modifications to the innovation presently in use. |

<table>
<thead>
<tr>
<th>LEVEL VI RENEWAL: State in which the use reevaluates the quality of use of the innovations, seeks major modifications or alternatives to the present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self &amp; system.</th>
<th>PLANS</th>
<th>STATUS REPORTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plans activities that involve pursuit of alternatives to enhance or replace the innovation.</td>
<td>Reports considering major modifications or alternatives to present use of the innovation.</td>
<td></td>
</tr>
</tbody>
</table>

### Section IV

<table>
<thead>
<tr>
<th>SCALE POINT Definitions of the Levels of Use of the Innovation</th>
<th>CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levels of Use are distinct states that represent observably different types of behaviour and patterns of innovation use as exhibited by individuals and groups. These levels characterize a user's development in acquiring new skills and varying use of the innovation. Each level encompasses a range of behaviours but is limited by a set of identifiable Decision Points. For descriptive purposes, each level is defined by seven categories.</td>
<td>PERFORMING</td>
</tr>
<tr>
<td>Carries out the actions and activities entailed in operationalizing the innovation.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEL 0 NONUSE: State in which the use has little or no knowledge of the innovation, has no involvement with the innovation, and is doing nothing toward becoming involved.</th>
<th>CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takes no discernible action toward learning about or using the innovation. The innovation and/or its accoutrements are not present or in use.</td>
<td></td>
</tr>
</tbody>
</table>

| DECISION POINT A | Takes action to learn more detailed information about the innovation. |

<table>
<thead>
<tr>
<th>LEVEL I ORIENTATION: State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands</th>
<th>CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explores the innovation and requirements for its use by talking to others about it, reviewing descriptive information and sample materials, attending orientation sessions, and observing others using it.</td>
<td></td>
</tr>
<tr>
<td>SCALE POINT</td>
<td>Definitions of the Levels of Use of the Innovation</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>upon the user and the user system.</td>
<td></td>
</tr>
<tr>
<td>DECISION POINT B</td>
<td>Makes a decision to use the innovation by establishing a time to begin.</td>
</tr>
<tr>
<td>LEVEL II PREPARATION: State in which the use is preparing for first use of the innovation.</td>
<td>Studies reference materials in depth, organizes resources and logistics, and schedules and receives skill training in preparation for initial use.</td>
</tr>
<tr>
<td>DECISION POINT C</td>
<td>Changes, if any, and use are dominated by user needs. Clients may be valued, however, management, time, or limited experimental knowledge dictate what the use does.</td>
</tr>
<tr>
<td>LEVEL III MECHANICAL USE: State in which the use focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet use needs than client needs. The use is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.</td>
<td>Manages the innovation with varying degrees of efficiency. Often lacks anticipation of immediate consequences. The flow of actions in the use and clients is often disjointed, uneven, and uncertain. When changes are made, they are primarily in response to logistical and organizational problems.</td>
</tr>
<tr>
<td>DECISION POINT D - 1</td>
<td>A routine pattern of use is established. Changes for clients may be made routinely, but there are no recent changes outside the pattern.</td>
</tr>
<tr>
<td>LEVEL IV A ROUTINE: Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.</td>
<td>Uses the innovation smoothly with minimal management problems; over time there is little variation in patterns of use.</td>
</tr>
<tr>
<td>DECISION POINT D - 2</td>
<td>Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes. The changes must be recent.</td>
</tr>
<tr>
<td>LEVEL IV B REFINEMENT: State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.</td>
<td>Explores and experiments with alternative combinations of the innovation with existing practices to maximize client involvement and to optimize client outcomes.</td>
</tr>
<tr>
<td>DECISION POINT E</td>
<td>Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing.</td>
</tr>
<tr>
<td>LEVEL V INTEGRATION: State in which the user is combining own efforts to use the innovation with the related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.</td>
<td>Collaborates with others in use of the innovation as a means for expanding the innovation's impact on clients. Changes in use are made in coordination with others.</td>
</tr>
<tr>
<td>DECISION POINT F</td>
<td>Begins exploring alternatives or major modifications to the innovation presently in use.</td>
</tr>
<tr>
<td>SCALE POINT</td>
<td>CATEGORIES</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Definitions of the Levels of Use of the Innovation</td>
<td>PERFORMING</td>
</tr>
<tr>
<td><strong>LEVEL VI RENEWAL:</strong> State in which the use reevaluates the quality of use of the innovations, seeks major modifications or alternatives to the present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self &amp; system.</td>
<td>Explores other innovations that could be used in combination with or in place of the present innovation in an attempt to develop more effective means of achieving client outcomes.</td>
</tr>
</tbody>
</table>

Source: Hall, Dirksen, & George, (2006)
### Appendix 13: Levels of Use Rating Sheet

LEVEL OF USE RATING SHEET (CBAM, 1975)
RECORDING #: SITE: INTERVIEWER:
DATE: / / PARTICIPANT #:

<table>
<thead>
<tr>
<th>Level</th>
<th>Knowledge</th>
<th>Acquiring Information</th>
<th>Sharing</th>
<th>Assessing</th>
<th>Planning</th>
<th>Status Reporting</th>
<th>Performing</th>
<th>Overall LoU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonuse</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Decision Point A</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>Orientation</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
</tr>
<tr>
<td>Decision Point B</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
</tr>
<tr>
<td>Decision Point C</td>
<td>IV A</td>
<td>IV A</td>
<td>IV A</td>
<td>IV A</td>
<td>IV A</td>
<td>IV A</td>
<td>IV A</td>
<td>IV A</td>
</tr>
<tr>
<td>Mechanical Use</td>
<td>IV B</td>
<td>IV B</td>
<td>IV B</td>
<td>IV B</td>
<td>IV B</td>
<td>IV B</td>
<td>IV B</td>
<td>IV B</td>
</tr>
<tr>
<td>Decision Point D-1</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Routine</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
</tr>
<tr>
<td>Decision Point D-2</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
<td>VI</td>
</tr>
<tr>
<td>Refinement</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td>Decision Point E</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
</tr>
<tr>
<td>Integration</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
</tr>
<tr>
<td>Decision Point F</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
</tr>
<tr>
<td>Renewal</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
</tr>
</tbody>
</table>

Is the teacher a past user? Yes No If so, what was their last LoU? ___________

How much difficulty did I have in assigning this person to a specific LoU? None 1 2 3 4 5 6 7 Very much

General Comments:

Source: Hall, Dirksen, & George (2006)
Appendix 14: Levels of Use Categories Across All Teachers
Appendix 15: Innovation Configuration Map for Active Learning

<table>
<thead>
<tr>
<th>Component 1. Classroom Environment / Organization / Management</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Teacher creates a joyful atmosphere of respect, trust, and openness where all students are treated as equals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) The teacher frequently smiles and seems to enjoy the lesson. The teacher shows affection and actively encourages the students’ enjoyment during the lesson.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) The teacher always maintains a well-disciplined classroom with class rules and proper timing is followed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) The teacher’s classroom, desk and supplementary materials are well organized.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Teacher creates an atmosphere of trust and openness where students’ views are encouraged, however value was only given to some.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) The teacher smiles and seems to enjoy the lesson but does not actively encourage a joyful learning environment among the students during the lesson.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) The teacher frequently maintains a disciplined classroom with class rules and proper timing but does not ensure that students follow them.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) The teacher’s classroom, desk and supplementary materials are somewhat organized.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Teacher creates an atmosphere of openness but only some of the students’ views were encouraged.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) The teacher dominates the class and students’ views were not encouraged or valued.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Teacher dominates the class and students’ are fearful and hesitant to contribute or ask questions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) The teacher occasionally smiles during the lesson but did not appear to be enjoying the lesson.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) The teacher does not smile during the lesson and does not encourage student enjoyment during the lesson.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) The teacher occasionally maintains a disciplined classroom. Timing of lessons is often incorrect and students frequently ignore class rules.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) The teacher does not maintain a disciplined classroom. Timing of lessons is not followed. There does not appear to be class rules.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) The teacher’s classroom, desk and supplementary materials are not organized.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(v) Bulletin boards are neatly arranged and showcase up-to-date student work.</td>
<td>(v) Bulletin boards are somewhat organized and showcase up-to-date student work.</td>
<td>(v) Bulletin boards are disorganized and showcase out-of-date student work.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Component II. Teacher Uses Supplementary Materials

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Teacher consistently uses the textbook.</td>
<td>(i) Teacher occasionally uses the textbook.</td>
<td>(i) Teacher rarely uses the textbook.</td>
<td>(i) Teacher does not use the textbook.</td>
<td></td>
</tr>
<tr>
<td>(ii) Teacher consistently includes supplementary materials.</td>
<td>(ii) Teacher occasionally includes supplementary materials.</td>
<td>(ii) Teacher rarely includes supplementary materials.</td>
<td>(ii) Teacher does not include supplementary materials.</td>
<td></td>
</tr>
<tr>
<td>(iii) Teacher consistently uses the teacher’s guide appropriately.</td>
<td>(iii) Teacher occasionally uses the teacher’s guide appropriately.</td>
<td>(iii) Teacher rarely uses the teacher’s guide appropriately.</td>
<td>(iii) Teacher did not use the teacher’s guide in the classroom.</td>
<td></td>
</tr>
<tr>
<td>(iv) Teacher consistently incorporates his/her own ideas and materials in the lesson.</td>
<td>(iv) Teacher occasionally incorporates his/her own ideas and materials in the lesson.</td>
<td>(iv) Teacher rarely incorporates his/her own ideas and materials in the lesson.</td>
<td>(iv) Teacher did not incorporate his/her own ideas and materials in the lesson.</td>
<td></td>
</tr>
</tbody>
</table>

### Component III. Teacher Uses An Active-Learning Approach

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Teacher clearly introduces the lesson and models the activity properly for students.</td>
<td>(i) Teacher introduces the lesson and models the activity less well for students.</td>
<td>(i) Teacher introduces the lesson and models the activity incompletely for students.</td>
<td>(i) Teacher does not introduce the lesson or model the activity for students.</td>
<td></td>
</tr>
<tr>
<td>(ii) Teacher always facilitates students’ activities by asking open-ended questions and encouraging discussion.</td>
<td>(ii) Teacher sometimes facilitates students’ activities by asking open-ended questions and encouraging discussion.</td>
<td>(ii) Teacher infrequently facilitates students’ activities by asking open-ended questions and encouraging discussion.</td>
<td>(ii) Teacher does not facilitate students’ activities by asking open-ended questions or encouraging discussion.</td>
<td></td>
</tr>
</tbody>
</table>
### Component IV. Teacher Differentiates Support for Students

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>Teacher is very familiar with all students’ level of understanding and ability and plans the lessons accordingly.</td>
<td>Teacher is very familiar with all students’ level of understanding and ability but modifies lesson plans less well.</td>
<td>Teacher is somewhat familiar with most students’ level of understanding and ability but does not modify lessons as needed.</td>
<td>Teacher does not understand or acknowledge different levels of student understanding or ability and does not modify lessons.</td>
<td></td>
</tr>
<tr>
<td>(ii)</td>
<td>Teacher consistently takes special care of weaker students.</td>
<td>Teacher sometimes takes special care of weaker students.</td>
<td>Teacher rarely takes special care of weaker students.</td>
<td>Teacher does not take special care of weaker students.</td>
<td></td>
</tr>
<tr>
<td>(iii)</td>
<td>Teacher consistently uses on-going assessment strategies to meet each student’s academic needs.</td>
<td>Teacher sometimes uses on-going assessment strategies to meet each student’s academic needs.</td>
<td>Teacher rarely uses on-going assessment strategies to meet each student’s academic needs.</td>
<td>Teacher does not use on-going assessment strategies to meet each student’s academic needs.</td>
<td></td>
</tr>
</tbody>
</table>

### Component V. Teacher Uses Cooperative Learning / Group Learning

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>Teacher consistently organizes students into pairs or groups.</td>
<td>Teacher frequently organizes students into pairs or groups.</td>
<td>Teacher occasionally organizes students into pairs or groups.</td>
<td>Teacher did not organize students into pairs or groups.</td>
<td></td>
</tr>
<tr>
<td>Component VI. Teacher Actively Engages Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="table.png" alt="Table" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component VII. Teacher Competency (Knowledge, Skills, Attitude, Concerns)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>(i) Teacher is very familiar with the suggested activities in the textbook and teacher’s guide (including objectives and learning outcomes) of the lesson.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(ii) Teacher consistently demonstrates their mastery of the subject matter.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(iii) Teacher always demonstrates interest and enthusiasm in the lesson.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(iv) Teacher demonstrates patience, kindness and empathy for the students.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(i) Teacher is somewhat familiar with the suggested activities in the textbook and teacher’s guide (including objectives and learning outcomes) of the lesson.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(ii) Teacher occasionally demonstrates their familiarity about the subject matter.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(iii) Teacher occasionally demonstrates interest and enthusiasm in the lesson.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(iv) Teacher occasionally demonstrates patience, kindness and empathy for the students.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(i) Teacher is not comfortable using the suggested activities in the textbook and teacher’s guide (including objectives and learning outcomes) of the lesson.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(ii) Teacher rarely demonstrates their familiarity about the subject matter.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(iii) Teacher rarely demonstrates interest or enthusiasm in the lesson.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(iv) Teacher rarely demonstrates patience, kindness and empathy for the students.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(i) Teacher did not use the suggested activities in the textbook or teacher’s guide (including objectives and learning outcomes) of the lesson.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(ii) Teacher does not appear to be familiar with the subject matter.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(iii) Teacher shows little or no interest or enthusiasm in the lesson.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>(iv) Teacher did not show patience, kindness or concern for students.</td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
</tr>
</tbody>
</table>
# Appendix 16: IC MAP Frequency Counts

## I. Class Environment /Organization /Management

<table>
<thead>
<tr>
<th></th>
<th>A. (IDEAL)</th>
<th>B.</th>
<th>C.</th>
<th>D. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Joyful atmosphere</td>
<td>**********</td>
<td>***</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>(ii) Teacher smiles and shows affection to students</td>
<td>**********</td>
<td>****</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>(iii) Disciplined classroom, class rules, proper time</td>
<td>**********</td>
<td>***</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>(iv) Classroom organization</td>
<td>**********</td>
<td>****</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>(v) Showcase student work</td>
<td>**********</td>
<td>****</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>TOTAL BEHAVIOIRS ASSESSED (N= 130)</td>
<td>80 (61%)</td>
<td>36 (28%)</td>
<td>13 (10%)</td>
<td>1 (1%)</td>
</tr>
</tbody>
</table>

## II. Teacher Uses Supplementary Materials

<table>
<thead>
<tr>
<th></th>
<th>A. (IDEAL)</th>
<th>B.</th>
<th>C.</th>
<th>D. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Incorporates the textbook into lesson</td>
<td>27%</td>
<td>27%</td>
<td>15%</td>
<td>31%</td>
</tr>
<tr>
<td>(ii) Includes supplementary materials</td>
<td>38%</td>
<td>31%</td>
<td>8%</td>
<td>*</td>
</tr>
<tr>
<td>(iii) Uses teacher’s guides</td>
<td>****</td>
<td>58%</td>
<td>27%</td>
<td>****</td>
</tr>
<tr>
<td>(iv) Incorporates own ideas</td>
<td>27%</td>
<td>34%</td>
<td>27%</td>
<td>15%</td>
</tr>
<tr>
<td>TOTAL BEHAVIOIRS ASSESSED (N= 104)</td>
<td>39 (37%)</td>
<td>31 (30%)</td>
<td>13 (13%)</td>
<td>21 (20%)</td>
</tr>
</tbody>
</table>

## III. Teacher Uses an Active Learning Approach

<table>
<thead>
<tr>
<th></th>
<th>A. (IDEAL)</th>
<th>B.</th>
<th>C.</th>
<th>D. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Models activity properly</td>
<td>88%</td>
<td>**</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>(ii) Open-ended questions &amp; encourages discussion</td>
<td>23%</td>
<td>31%</td>
<td>38%</td>
<td>8%</td>
</tr>
<tr>
<td>(iii) Showcases students during lesson</td>
<td>73%</td>
<td>27%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) Links topics with student’s experiences</td>
<td>27%</td>
<td>34.5%</td>
<td>34.5%</td>
<td>4%</td>
</tr>
<tr>
<td>TOTAL BEHAVIOIRS ASSESSED (N= 104)</td>
<td>55 (53%)</td>
<td>27 (26%)</td>
<td>19 (18%)</td>
<td>3 (3%)</td>
</tr>
</tbody>
</table>
### IV. Teacher Differentiates Support for Students

<table>
<thead>
<tr>
<th>(i) Plans lessons based on student ability</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>34%</td>
<td>58%</td>
<td>4%</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(ii) Extra care for students w/ special needs</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>62%</td>
<td>38%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(iii) Uses on-going assessment strategies</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>73%</td>
<td>27%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL BEHAVIOURS ASSESSED (N= 78)**

<table>
<thead>
<tr>
<th></th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students' engagement</td>
<td>44 (57%)</td>
<td>32 (41%)</td>
<td>1 (1%)</td>
<td>1 (1%)</td>
<td></td>
</tr>
<tr>
<td>Extra care for students w/ special needs</td>
<td>62%</td>
<td>38%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses on-going assessment strategies</td>
<td>73%</td>
<td>27%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### V. Teacher Uses Cooperative Learning / Group Learning

<table>
<thead>
<tr>
<th>(i) Students work in groups</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>80%</td>
<td>12%</td>
<td>8%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(ii) Encourages cooperative learning</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15%</td>
<td>12%</td>
<td>38%</td>
<td>35%</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL BEHAVIOURS ASSESSED (N= 78)**

<table>
<thead>
<tr>
<th></th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students' engagement</td>
<td>42 (54%)</td>
<td>12 (15%)</td>
<td>13 (17%)</td>
<td>11 (14%)</td>
<td></td>
</tr>
</tbody>
</table>

### VI. Teacher Actively Engages Students

<table>
<thead>
<tr>
<th>(i) Students are engaged most of the time</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>58%</td>
<td>30%</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(ii) Encourages questions and participation</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>46%</td>
<td>31%</td>
<td>15%</td>
<td>8%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(iii) Encourages self-directed learning</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>77%</td>
<td>15%</td>
<td>4%</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(iv) Student use of supplementary materials</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19%</td>
<td>27%</td>
<td>4%</td>
<td>50%</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL BEHAVIOURS ASSESSED (N= 104)**

<table>
<thead>
<tr>
<th></th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students' engagement</td>
<td>52 (50%)</td>
<td>27 (26%)</td>
<td>9 (9%)</td>
<td>16 (15%)</td>
<td></td>
</tr>
</tbody>
</table>

### VII. Teacher Competency (Knowledge, Skills, Attitude, Concerns)

<table>
<thead>
<tr>
<th>(i) Familiar with teacher resource guide materials</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
</thead>
<tbody>
<tr>
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<table>
<thead>
<tr>
<th>(ii) Demonstrate mastery of the subject matter</th>
<th>A. IDEAL</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
<th>E. (less than IDEAL)</th>
</tr>
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<tr>
<td></td>
<td>69%</td>
<td>31%</td>
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<tr>
<td>ALL TEACHERS</td>
<td>A. (IDEAL)</td>
<td>B.</td>
<td>C.</td>
<td>D. (less than IDEAL)</td>
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<tr>
<td>(iii) Demonstrate interest and enthusiasm</td>
<td>************</td>
<td>****</td>
<td>85%</td>
<td>15%</td>
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<tr>
<td>(iv) Demonstrate patience, kindness, tolerance</td>
<td>************</td>
<td>****</td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>TOTAL BEHAVIOURS ASSESSED (N= 104)</td>
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<td>25 (24%)</td>
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</tr>
<tr>
<td>TOTAL BEHAVIOURS ASSESSED (N= 702)</td>
<td>391 55.7%</td>
<td>190 27.1%</td>
<td>68 9.7%</td>
<td>53 7.5%</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 17: Social Constructivist Theory-based Interview Questions

HOW DO YOU UNDERSTAND THE CONCEPT AND PRACTICE OF ACTIVE LEARNING?

I. The affect of prior beliefs, ideas, and personal background on a teacher’s understanding of Active Learning methods.

1. What are the qualities of a good teacher?

2. How would you describe yourself as a teacher?

3. What do you feel is the value of an education?

4. Why did you choose to become a teacher? Why did you choose to teach at an FIVDB school?

5. How long did it take you to learn to teach well? Do you feel there is more to learn about teaching? Where can information about teaching practices be found?

6. What do you think you do especially well in teaching and how did you learn to do that?

7. What has surprised you about teaching at FIVDB?

8. What are some of the key learning goals for students? (e.g., intellectual or moral)

9. What is the purpose of using the Active Learning teaching approach? Do you feel it is appropriate for all grade levels, subject, and all students? Why or why not?

10. Can you share some specific examples of Active Learning teaching methods? (math, Bangla, English)

11. What is the purpose of group work?

II. The relationship between your personal practical knowledge and experience of schooling and your current teaching practice.

1. Before joining FIVDB, did you have any previous experience or knowledge about Active Learning teaching methods?

2. How would you describe the style of teaching you received when you were a student in school? Has that experience helped you become a better teacher?

3. As a user of Active Learning methods, would you describe yourself as a novice, intermediate or specialist? Why?

4. How important is it to have a strong understanding of the subject matter you are responsible for teaching? Why or why not?
5. Are there any particular subjects you wished you were more knowledgeable about? Which ones? How can you improve your understanding and knowledge of these subjects?

6. How important do you believe it is as a teacher to understand the level of understanding of your students? Why or why not?

III. The relationship between social interaction with colleagues and a teacher’s ability to understand and implement Active Learning methods in the classroom.

1. What role do other Teachers play in your continued development and use of Active Learning methods in your classroom? Can you give an example of how other teachers support you? (classroom management, active learning teaching strategies, etc.)

2. What is the role of the Head Teacher in your continued development and use of Active Learning methods in your classroom? Can you give an example of how they support you?

3. What is the role of Supervisors in your continued development and use of Active Learning methods in your classroom? Can you give an example of how they support you?

4. Who else besides your Head Teacher, Supervisor and other Assistant Teachers supports you in using Active Learning methods in your classroom? Can you give me an example of how they support you?

5. Who supports you the most to use Active Learning teaching methods? How?

6. Who has been your biggest influence as a teacher? Why?

A. Inputs are necessary for your continued development of instructional expertise in using Active Learning methods in your classroom.

1. What is the role of Teacher Trainers in your continued development and use of Active Learning methods in your classroom? Can you give me an example of how they support you?

2. What type of ongoing training do you find most helpful in improving your ability to use Active Learning teaching methods in your classroom? Please explain why?

3. How important are the Teacher Resource Guides in your continued development and use of Active Learning methods in your classroom? Can you give me an example?

4. Are there any other resources or materials besides the Teacher Resource Guides that you find helpful to improve your teaching practice? If yes, what are they?

B. A community of learners

1. Do you have time to meet and talk with other teachers, the Head Teacher or Supervisor during your time at the school? When is the best time to talk about your teaching practice with your colleagues?
2. Besides the training sessions you attend have you ever spent time with FIVDB teachers from another school close by? If yes, what did you talk about? If not, why not?

3. Do you feel comfortable discussing your teaching concerns and questions with your Head Teacher or School Supervisor? Why or why not? Can you describe one time you had a discussion?

4. Do you feel you have the freedom to plan and teach your lessons in your own way? Why or why not?

5. How often do you plan and teach lessons in a way that is different from what is suggested in the Teacher’s Guide or Textbook? Does your Head Teacher and Supervisor support these changes to your lessons?

6. Are you encouraged to look for new teaching ideas and strategies to improve as a teacher? Who encourages you? Can you give an example?
Appendix 18: Context-related Interview Questions

A. What features of professional context play a predominant role in shaping a teacher’s implementation of active learning pedagogy?

Local structural conditions

1. Do you feel there are adequate physical resources at the school to support you in using the Active Learning approach? (facilities, equipment, teaching/learning materials)

2. How familiar are you with the NCTB primary school curriculum? Do you know about the learning competencies listed for students in each grade level?

3. What is the mission or educational goal of your school?

4. Tell me what you find most challenging about teaching your students.

5. Tell me what you find most rewarding about teaching your students.

Human resources

1. Do you feel there is pressure to continuously improve your teaching practice? If so, where does that pressure come from?

2. What other types of pressure do you feel as a teacher? (probe about assessment practices, exam results, etc.)

3. How would you describe the level of community support and involvement in the school? Can you give an example of community involvement and support?

4. How would you describe the level of community understanding and support of FIVDB’s approach to teaching and learning?

B. What features of socio-cultural context play a predominant role in shaping a teacher’s implementation of active learning pedagogy?

Local community characteristics

1. What is the local community’s attitude about the value of education?

2. Are more parents sending their children to school now than in the past? If so, why?

3. What is the main occupation of parents from this school?

4. Do you live within the school’s catchment area?
5. How do parents provide support to their children to become successful learners? (probe about homework support, going to school vs. working or helping at home)

**Local cultural characteristics**

1. What are some of the challenges you face in being a primary school teacher in this community? (probe about social, economic, cultural, religious issues)

2. What are some of the major challenges facing your students in becoming successful learners in this community? (probe about distance to school, weather, health, economic, cultural, eve teasing, gender issues)

3. What percentage of your students are Muslim, Hindu, Christian?

4. What percentage of your students do you expect will go on to Class 6? Why?

5. Can you tell me what frustrates you as a teacher at this school?

6. Can you tell me what brings you joy in your day as a teacher at this school?

Other comments, concerns, suggestions?
Appendix 19: Interview Questions for Secondary Participants

<table>
<thead>
<tr>
<th>Social Constructivist Theory-based Questions</th>
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</thead>
<tbody>
<tr>
<td><strong>I. BACKGROUND QUESTIONS:</strong></td>
</tr>
<tr>
<td>1. How long have you been working at FIVDB?</td>
</tr>
<tr>
<td>2. Please describe your position at FIVDB? How long have you held that position?</td>
</tr>
<tr>
<td>3. How long have you been supporting/supervising/training teachers?</td>
</tr>
<tr>
<td>4. Were you ever a classroom teacher? If yes, how many years did you teach and where did you teach?</td>
</tr>
<tr>
<td><strong>II. HOW DO YOU UNDERSTAND THE CONCEPT AND PRACTICE OF ACTIVE LEARNING?</strong></td>
</tr>
<tr>
<td>1. What are the qualities of a good teacher?</td>
</tr>
<tr>
<td>2. What do you feel is the value of an education?</td>
</tr>
<tr>
<td>3. What is the mission or educational goal of an FIVDB school?</td>
</tr>
<tr>
<td>4. What is the purpose of using the Active Learning teaching approach? Do you feel Active Learning is more suitable for some grade levels, subject, students than others? Why or why not?</td>
</tr>
<tr>
<td>5. What are some of the key learning goals for students? (e.g., intellectual or moral)</td>
</tr>
<tr>
<td>6. What role do you play in supporting the teachers continued development and use of Active Learning methods? Can you give an example of how you support teachers? (classroom management ideas, active learning teaching strategies, etc.)</td>
</tr>
</tbody>
</table>

**A. What Inputs are necessary for a teacher’s continued development of instructional expertise in using Active Learning methods in the classroom.**

1. What type of ongoing training do you feel is most helpful in improving a teacher’s ability to use Active Learning teaching methods in the classroom? Please explain why?

2. How important are the Teacher Resource Guides and other Instructional Materials for a teacher’s continued development and use of Active Learning methods in the classroom? Can you give me an example?
B. A community of learners

1. How important is it for teachers to have time to talk to other teachers about their teaching practices, ideas, and problems? Why or why not?

2. Do you believe that teachers have time to meet and talk with other teachers, the Head Teacher or Supervisor during their time at the school?

3. Would you encourage teachers to plan and teach lessons in their own way? Why or why not?

4. Do you encourage teachers to look for new teaching ideas and strategies to improve? Where can they find new ideas?

C. Teaching practice

1. When was the last time you observed a teacher in the classroom? How often do you get to the schools to observe the teachers?

2. Do you believe teachers are using the supplementary materials in their classroom appropriately? Are there adequate opportunities for hands-on learning for students?

3. What is the purpose of group work?

4. Is cooperative learning a commonly used teaching technique in FIVDB schools? Can you give me an example?

5. From your experience of observing teachers in FIVDB schools, what is a major strength of the Active Learning teaching approach? Please give an example.

6. From your experience of observing teachers in FIVDB schools, what is a major weakness of the Active Learning teaching approach? Please give an example.

7. Can you tell me the purpose of on-going assessment of students that teachers conduct during class?

8. Are you satisfied with the amount of class time that students are engaged in learning (time on task)? Why or why not?

9. Based on your school visits, do you feel that school time is being used effectively for teaching and learning? How can you help ensure that school time is used for teaching?

10. Can you explain FIVDB’s policy on classroom management?
**What Role Does Context Play In Shaping The Implementation Of Active Learning In The Classroom?**

**A. Local structural conditions**

1. Do you feel there are adequate physical resources at the school to support teachers in using the Active Learning approach? (facilities, equipment, teaching/learning materials)
2. Tell me what you find most challenging about training/supporting the teachers.
3. Tell me what you find most rewarding about training/supporting the teachers.

**B. Human resources**

1. Do you feel there is pressure on teachers to continue improving their teaching practice? If so, where does that pressure come from?
2. How would you describe the level of community support and involvement in the school? Can you give an example of community involvement and support?
3. How would you describe the level of community understanding and support of FIVDB’s approach to teaching and learning?
4. How would you describe the climate for educational change within FIVDB schools?

Other comments
Appendix 20: NGO's Teacher Resource Guide

Lesson – 1
Greetings 1 and 2
What’s your name? How old are you?

পাঠের উদ্দেশ্য (Lesson Objective)

- ইংরেজিতে কুশল বিনিময় করতে পারবেন।
- নিজের নাম, বয়স ও কোন প্রেক্ষাপটে পড়া তা ইংরেজিতে বলতে পারবেন।
- ইংরেজিতে সাধারণ কথা করতে পারবেন।

শিখন-শেখানো প্রক্রিয়া (Teaching Instructions)

পাঠের পুনরালোচনা (Lesson Presentation)

- পাঠের পুনরালোচনা করবেন। যেমন- আপনি শিক্ষার্থীকে লিখতে করবেন, Good Morning Students, উভয় শিক্ষা করবেন, Good Morning Teacher, আবার বলবেন How are you? উভয়ের শিক্ষা করবেন, Fine, thank you. এখান একজন শিক্ষক প্রশ্ন করবেন, What’s your name? শিক্ষার্থী তার নাম বলবে। যেমন- Rajib, আরও কয়েকজনকে প্রশ্ন করবেন, তারা নিজেদের নাম বলবে।
- আপনি এখান পাঠের How old are you? অংশটিকে (পৃষ্ঠা -3) তম ও সপ্তম উচ্চারণে পড়বেন। সাথে সাথে বাংলা অর্থ বলে দেবেন।
- এখানে দুইজন শিক্ষক সামনে অনানন। তারা আপনার সহায়তায় প্রশ্নটি একে অপরকে করবে। যেমন- একজন শিক্ষার্থী বল্লে, How old are you? অপর শিক্ষক তার বয়স বলবে, Six / Seven. এভাবে পৃষ্ঠা নং ৩ এর বাকি প্রশ্নগুলোও করবে।

দলীয় কাজ (Group Work Activity)

- শিক্ষার্থী তিন দল বিভক্ত করবেন। এই তিন দলের মধ্যে পাঠের কথাবর্তমান চার্ট চান। যেমন- দলের একজন শিক্ষক আমাদের প্রথম দলে দান দেবে। এরপর শিক্ষার্থী বলবে Good Morning Students, উভয়ের শিক্ষা করবে Good Morning. এরপর বলবে How are you? উভয়ের শিক্ষা করবে Fine, thank you.
- তাদের দলের কয়েকজন শিক্ষক পাঠের বাকি প্রশ্নগুলো করবে।
- এভাবে পর্যায়ে একজন অভিভাষী হবে এবং বাকিগুলো এইভাবে উত্তর দেবে।

পাঠ বাঙ্গালি (Student Assessment)

- এটিও পাঠ থেকে দৃষ্টিকোণ করে শিক্ষার্থী সামনে এসে কথাবর্তমান উপস্থাপন করবে। আপনি সহায়তা করবেন।
## Appendix 21: NGO School Photos

<table>
<thead>
<tr>
<th>Student table, windows</th>
<th>Jute carpet area</th>
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<tbody>
<tr>
<td><img src="image1" alt="Student table, windows" /></td>
<td><img src="image2" alt="Jute carpet area" /></td>
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</table>

<table>
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<tr>
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<th>Supplementary learning materials</th>
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</thead>
<tbody>
<tr>
<td><img src="image3" alt="Blackboard" /></td>
<td><img src="image4" alt="Supplementary learning materials" /></td>
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Bulletin boards