All in Good Time: The Evolving Role of Faculty in Ontario Colleges

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
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Abstract

The purpose of this study was to explore how the role of Ontario college faculty has evolved since the advent of the Post-Secondary Education Choice and Excellence Act of 2000 and the Colleges of Applied Arts and Technology Act of 2002, and to consider whether or not the decision to create a research culture at the colleges included making time available to the professoriate to engage in applied research activities.

Web content was analyzed to select four Ontario colleges at various stages of research evolution using D.J. Madder’s typology of college research and innovation. The study compared the current state of the four Ontario colleges focusing on whether the institutions had developed policies or procedures to provide time for faculty-based applied research. Interviews were also conducted with two senior members from the relevant provincial government sector involved in planning the implementation of applied research in the colleges, and with five senior college leaders who were present in the college system when the Acts were introduced. Additional interviews with four senior college leaders examined the current conditions surrounding the development of applied research cultures in Ontario colleges.

Findings indicated that regardless of where a college is located on Madder’s typology of research evolution, time for applied research activities is provided to the college faculty in an inconsistent manner. This is due, in part, to the lack of planning by college and government leaders in allocating time for applied research activities to college faculty. This situation was
brought about to a large extent by the relationship between Ontario colleges and universities that hampered the evolution of a systemic research culture in the colleges.

Ontario colleges may now want to consider whether or not it is to their advantage to continue pursuing closer working relations with the provinces’ universities, or whether they should explore what other jurisdictions have done to develop successful, applied research-focused colleges. The development of a more robust, fully integrated applied research culture in the colleges will require more careful and comprehensive planning by the colleges either by themselves or in concert with agencies of the Ministry of Training, Colleges and Universities, than has been experienced to date. As long as the Collective Agreement governing the allotment of time for faculty activities exists in its current iteration, allocating time for faculty to engage in applied research activities outside the classroom will likely continue on an *ad hoc* basis. In the near term, having curriculum-based applied research activities could partially solve the problem, accommodate program specific needs, and be of enormous benefit to students and faculty alike.
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Dedication

To Jackie, Kirsten and Eric for always reminding me what matters, and to Millie and Copper for reminding me that it really only matters one day at a time.
The most fundamental characteristic of the community college may be its capacity to reinvent itself as the needs and the problems that it is asked to address change. Such plasticity is very difficult for any human organization to achieve, and at every point in the evolution of the community college there have been strong voices declaring the final destination has been reached and further change would destroy it. Yet the evolution goes on because that is the essence of the institution.

~ Michael Skolnik
Chapter 1: Introduction

Introduction

The purpose of this study was to explore how the role of Ontario college faculty has evolved since the advent of the Post-secondary Education Choice and Excellence Act (Government of Ontario, 2000) and the Colleges of Applied Arts and Technology Act of 2002, and to consider the extent to which the initial decision to create a research culture at the colleges included making time available to the professoriate to engage in applied research activities. The study also attempted to ascertain how Ontario colleges at various stages of applied research and innovation sophistication are accommodating faculty need for time to engage in applied research activities. Because release time for research activity is not currently addressed in the Standard Workload Formula (SWF) as governed by the Faculty Collective Agreement that applies to all 24 colleges (Ontario Colleges of Applied Arts and Technology, 2009), professors who want to engage in their own applied research activities tend do so for the most part on their own time – after work, on weekends or during sabbaticals. In order to find time for applied research activities it is possible for professors to have some course reduction – usually one or two courses in a semester – or a temporary reduction in other responsibilities, but these practices are dependent on the professors’ individual initiative to request the time, and their success is usually contingent on their working relationship with their departmental managers. The practices in terms of finding the necessary time for applied research activities are by no means consistent within a single institution, much less across the group of Ontario colleges, with the result that the time for applied research activities appears to be applied on a rather ad hoc basis.

The genesis of this project was a hallway conversation I had a few years ago with a faculty member at my college. We were talking about the still fairly new concept of college
professors being able to engage in applied research projects, a product of the introduction of the Colleges of Applied Arts and Technology Act of 2002, and how this possibility could enrich the experience of being a college professor. “The only problem,” said my colleague “is where are we supposed to find the time to do this?” Where indeed? Already responsible for teaching four or five courses a week – or 12 to 15 hours of in-class time – plus the attendant hours of class preparation followed by hours of grading, leaves a professor barely enough time to attend divisional meetings and perhaps devote a few days to some professional development activities over the course of a semester. As attractive as thoughts of conducting applied research may be to college professors, in a post-secondary educational institution created chiefly as a teaching institution there is, quite literally, no regularly established amount of time for applied research activities made available as a regular part of a professor’s duties. “Being able to conduct (applied) research sounds like a great idea,” my colleague noted, “and I hope it comes about, but it all seems rather poorly planned.”

This study explored:

1. In anticipation of degree-level program offerings and the advent of applied research functions in the Ontario colleges, what thought was given to providing faculty time to engage in applied research activities?

2. Since the advent of degree program offerings and of applied research functions in the colleges, what have the participating colleges done in terms of developing policies related to providing faculty the time to engage in applied research activities?

3. What differences, if any, are observed in ‘novice’ vs. ‘integrated’ colleges in this study (as described by Madder (2005) (Appendix H) in terms of how time is allocated to faculty to engage in applied research activities?
Historical Overview and Background

The traditional function of Canadian colleges as non-degree granting institutions that provide vocational, adult, and related education in support of workforce and regional economic development (Dennison & Gallagher, 1986), has undergone a significant change since the beginning of the 21st-century. This change is particularly noticeable in Ontario where in 1965, Ontario's Minister of Education, William Davis, introduced an amendment to the Department of Education Act, an amendment that established Colleges of Applied Arts and Technology (Ontario Department of Education, 1967). Admission to these colleges would be based on either a grade 12 or grade 13 completion, with an open admission policy to applicants 19 years of age and older (Ontario Department of Education, 1967, p. 31). The intent of these colleges was that they were to be occupationally oriented with an emphasis on general adult education as well as upgrading for those adults wishing to return to school for further studies.

Transfer agreements for degree completion at other institutions such as universities were not part of the original plan for how the colleges would operate. As Minister William Davis pointed out in his opening comments in the legislation establishing the college system, “You will note that I have not included in the list of courses what the Americans call the ‘transfer’ or ‘college-parallel’ courses, leading to advanced placement in universities, because there is no need for such courses in Ontario at the present time at least” (Ontario Department of Education, 1967, p. 14).

At the time the system of colleges was developed, Ontario had a number of universities (Skolnik, 2010) with a very influential lobby to protect their interests. Indeed, at the same time as the colleges were created, the province saw the establishment of five new universities as well: Laurentian University in 1960, Trent University in 1963, Brock University in 1964, Guelph
University in 1964, and Lakehead University in 1965 (Wikipedia, 2012). The province’s universities were not prepared to allow the creation of new post-secondary educational institutions that might possibly draw from the same pool of students on which the universities historically depended, or could indeed lessen what the universities might have describe as the traditional value of a baccalaureate based on theoretical as opposed to applied knowledge (Skolnik, 2006). Not surprisingly, the universities promoted growth in their own educational sector rather than support the development of alternate institutions for post-secondary education (Dennison & Gallagher, 1986; Jones, 1991).

Unable to offer degrees or transfer agreements with other institutions, colleges in Ontario were, by design and intent, limited to being vocationally specific post-secondary institutions, separate and unique from the province’s universities (Ontario Department of Education, 1967, p. 10). This would all change with the rapid growth in the provincial economy, the population, and the increase in manufacturing and the use of technology, through the quarter century following the establishment of the Ontario college system (Dennison & Gallagher, 1986).

By the 1990s, Ontario's established Colleges of Applied Arts and Technology were finding the systemic barriers to their students’ progress into degree-level education at universities increasingly troublesome. Because Ontario's universities had persistently blocked the creation of transfer agreements from the colleges to these universities, Ontario's colleges felt they had no choice but to develop transfer agreement relationships with universities outside the province, particularly in the United States, but also to some degree with universities in British Columbia, Alberta and Australia (Clark, Moran, Skolnik, 2003; Skolnik & Trick, 2009). These arrangements, however, were clearly inadequate to meet the needs of a rapidly growing community college student population seeking pathways to degree completion within their own
province. "Some college officials were openly critical of the universities’ systems; the universities were resentful of such criticism, and relations between the two sectors became antagonistic” (Skolnik, 2005, p. 57), although the curriculum of an applied, college baccalaureate program has a better balance between theoretical and applied knowledge, something that is not recognized by many universities which have a stereotypical view of colleges and institutes as specialists only in applied knowledge (Skolnik, 2006, p. 13).

The colleges continued to press the government to impose transfer arrangement policies on the universities and also, perhaps more importantly, pushed for the authority to award baccalaureate degrees themselves, even though some colleges had managed to make articulation arrangements for graduates from certain advanced diploma programs to complete a degree at a university in Ontario or elsewhere (MTCU, 2000, Section 2).

Ontario’s system of post-secondary education continued as a binary system in spite of the efforts of several commissions and task forces - at least 15 by one count - to bridge the gap by seeking equitable, formal, credit transfer arrangements (Kerr, McCloy, & Liu, 2010). These various groups were mandated to study the provincial post-secondary educational system and to advise the government how best to handle the growth in demand for post-secondary education in the province. Key among these reports were Vision 2000 in 1990, the Ontario Task Force on Advanced Training, also known as the Pitman Report, 1993, and the Ontario College University Degree-completion Accord, more commonly known as the Port Hope Accord, signed in 1999 (OCUFA, 2008, p. 1; Kerr, McCloy, & Liu, 2010). The efforts of these various commissions and task forces were met with little lasting success in terms of establishing meaningful transfer credit arrangements between colleges and universities (Skolnik, 2003; Stanyon, 2003), and although some articulation arrangements have been made between some Ontario colleges and universities,
colleges that do participate in these agreements do so by having their students’ college credits accepted only with universities where agreements have been developed on a one-by-one course basis between the two institutions (Laden, 2005a). College students who seek credit recognition in Ontario universities usually have to negotiate individually with these admitting institutions, and are not always successful. “Repetition of courses, resulting in repayment for these courses and loss of time to degree completion are often the outcomes for transfer students while the universities enjoy the extra fees and the taxpaying public contributes twice through the funding allocations” (Laden, 2005a, p. 7). It should be noted that the transfer of credits can also involve university students seeking diploma or graduate certificate completion in an Ontario college, a more recent trend that often involves university graduates seeking a credential in a field of study different from their university work (Renaud, 2000).

In December of 2000, the Ontario legislature passed the Post-secondary Education Choice and Excellence Act (Government of Ontario, 2000), replacing the former Degree-Granting Act (Government of Ontario, 1990), allowing colleges, private universities and institutes to offer degree programs, albeit within narrowly defined vocational fields with a variety of restrictions. A report from Industry Canada clearly stated the parameters of this pivotal change in the role of Ontario colleges in that the new Post-secondary Education Choice and Excellence Act enabled colleges of applied arts and technology to grant applied degrees - baccalaureates in applied areas of study - rather than the more traditional baccalaureates as granted by universities. “Applied degree programs will address emerging needs of businesses that are not currently being met, consistent with the employment-oriented mandate of colleges. The new applied degrees will not duplicate programs offered by universities” (Corkery. 2002, p. 13).
Interestingly, and with perhaps a touch of foreshadowing, the Industry Canada report goes on to note that “If this leads to a research policy discussion (given the link between education and research), this would be an unintended outcome” (Corkery, 2002, p. 13). This report was updated in 2008 (Fisher, 2008a). The restriction on colleges to only offer applied degrees in subject areas not currently addressed by universities was to become a particularly irritating – and limiting – restriction for the colleges.

Since the legislative change of 2000, and the Colleges of Applied Arts and Technology Act of 2002 that enabled formal applied research activities in the provincial colleges (Government of Ontario, 2002), applied degrees as offered by some of the Ontario colleges have become what appears to be a permanent feature of college program offerings for those colleges that have decided to participate in this re-defined college mandate. By 2003, the Minister of Education had allowed 18 colleges to offer 39 degree programs (Floyd, Skolnik, & Walker, 2005, p. 58). Full-time enrolment in the college baccalaureate programs nearly doubled from 3,863 in 2007 to 7,420 in 2011 (Skolnik, 2012, p. 4).

But getting an applied degree program developed, approved and established at a college is no easy task. Applications from colleges to offer applied degree programs are sent to the Post-secondary Education Quality Assessment Board (PEQAB) which was created as part of the Post-secondary Education Choice and Excellence Act (Jones, 2004; Government of Ontario, 2000), and which has produced extremely detailed and demanding standards for such programs. Applied degree programs - also called degrees in applied areas of study in the Ontario Qualifications Framework (OQF) (Ontario Ministry of Training Colleges and Universities, 2009) - must comprise eight semesters of on-campus study and at least one separate, paid full-time co-op work term of at least 14 consecutive weeks. At least 20 percent of the courses must be outside
the vocational field of study, and are usually referred to as ‘elective’ or ‘breadth’ courses. The application process includes a site visit and report by an assessment panel consisting of university professors (Skolnik, 2005, pp. 58-59; The Post-secondary Education Quality Assessment Board, 2010).

As things stand in 2012, 12 Ontario colleges are now offering 65 four-year baccalaureate programs to students in a variety of vocationally specific fields (Degrees in Demand, 2012; OCAS, 2012). In February of 2012, however, the Ontario government received a recommendation from the Commission on the Reform of Ontario’s Public Service, commonly known as the Drummond Report after its Chair, Don Drummond, that no new four-year baccalaureates should be developed by the colleges (Drummond, 2012). Whether or not the government will act on this aspect of the report remains to be seen, but in the meantime plans for the development of new applied degrees continue in several colleges while, at the same time, the possibility of introducing three-year baccalaureates is also being considered by the MTCU (Colleges Ontario, 2012). A complicating factor in this process, however, will likely be how to differentiate or blend the existing three-year advanced diplomas – which Ontario appears to be the only jurisdiction in North America to offer (Colleges Ontario, 2012, p. 8) - and any three-year baccalaureate offerings (Skolnik, 2012b).

While the creation of the current four-year applied degrees presents somewhat of a lengthy and exacting task, and while the reputation of the college baccalaureate degrees is still in development as student acceptance of the applied degree concept remains lower than the colleges might have expected (Academica Group, n.d.), in part because there is no consistency in which universities will accept a college undergraduate degree as qualification for post-graduate master’s degrees (Skolnik, 2006), the future of those colleges engaging in the degree granting
process has now changed, and with that change to degree granting institutions come some specific challenges (Laden, 2005).

As Glen Jones (2004) has pointed out, in light of the fact that one of the defining differences between universities and colleges in Ontario was the monopoly assigned to universities over degree-granting, “…the emergence of applied degree programmes [in colleges] signals an important blurring of the boundaries between the two sectors” (p. 47). The observation has also been made that over the course of the next 10 to 15 years, meeting the growing demand for higher education in Ontario will raise some new and significant challenges for the province’s higher education sector (Colleges Ontario, 2012; Miner, 2012; MTCU, 2012a), especially as this demand is increasingly focused on earning degrees rather than diplomas or other college-level credentials. “While a sharp spike in college applications can be expected during the current economic downturn, the long-term trend in demand from both students and prospective employers is for education that leads to degrees” (Clark, Moran, Skolnik, & Trick, 2009, p. 46).

In his keynote address to a 2006 joint Canadian Society for the Study of Higher Education and Centre for Higher Education Research and Development symposium in Toronto, Michael Skolnik (2006) noted that because of the increased demand for degrees that began in the late twentieth century, a variety of institutions and organizations have sought the authority to award degrees. Governments in four provinces - the most recent being Saskatchewan – have, for instance, decided that it is in the public interest to do so; a series of decisions that effectively ends the monopoly on degree granting held by the publicly funded universities (p. 2).

While this observation clearly speaks to the changing nature of the baccalaureate degrees and the inherent difficulties accompanying this new understanding of what it means to have such a degree, what can also be inferred is that the academic work needed to achieve a baccalaureate
degree is undergoing changes. These changes include the area of what kind of tertiary educational institution is able to offer degrees, and what exactly qualifies as academically valuable research in such institutions.

Historically it has been a core value of Canadian universities that those who teach should also be actively involved in the conduct of new research, and that faculty participation in research makes for better teaching professors, which consequently leads to a better learning experience for the students. The evidence for this assertion, however, is weak, if not non-existent or contradictory. Pascarella and Terenzini (2005), for instance, have concluded that most studies on the topic whether or not university professors who engage in research make better teachers actually suggest an inverse relationship between research productivity and teaching quality as measured by student satisfaction surveys. “Attachment to this institutional characteristic thus has the status of a value in and of itself, like the idea that theoretical knowledge is superior to applied knowledge” (Skolnik, 2006, p. 15).

Ontario’s colleges have to deal with different challenges than universities when it comes to identifying and accommodating research activities engaged in by faculty because there is no expectation or accommodation of research functions on the part of faculty in provincially negotiated collective agreements. This means, in particular, that there is no time allocated for research built into the SWF (Ontario Colleges of Applied Arts and Technology, 2009). This lack of faculty release time, and money to fund that release time, presents what may be the single greatest barrier to building a research culture at Ontario’s colleges (Catalfamo, 2010; Corkery, 2006; Fisher, 2009; Jurmain & Madder, 2011; Laden, 2005; Madder, 2005; Munro & Haimowitz, 2010; NSERC, 2007; Skolnik, 2002; Vaughan, 1988).
As has been emphasized by these and other writers, the Association of Canadian Community Colleges’ (ACCC) National Research Advisory Committee has identified “significant teaching loads, lack of funding for research release time, and unfavourable adjudication processes as key barriers to unleashing the full potential of colleges” (Fisher, 2008, p. 40), and recommended new funding mechanisms for faculty release time within national research funding programs for colleges.

In Fisher’s (2008) pilot study for his national survey of college faculty’s interest in participating in applied research activities, 85 percent of respondents identified the factors of time and funding as their primary barrier to participation in conducting applied research (p. 9).

With the exception of the Quebec College Centres for the Transfer of Technologies (CCTTs), colleges across Canada are funded through provincial education grants that normally do not provide operating funds for research activities. Some provincial governments are including applied research activities in college legislated mandates, but they do not fund the conduct of that research (Jurmain & Madder, 2011). In Quebec the CCTTs are research centres affiliated with the Collège d'enseignement général et professionnel (CÉGEP), with the mission of offering research/innovation assistance and coaching to companies and organizations by offering technical coaching, support and training through the development of personalized training programs; data searches; post-training follow-up and evaluation; market surveys and feasibility studies, and by organizing symposia and colloquia (College Centres for the Transfer of Technologies, 2011). The CCTTs are accredited by the Quebec Ministère de l'Éducation, du Loisir et du Sport, in collaboration with the Quebec Ministère du Développement économique, de l'Innovation et de l'Exportation (College Centres for the Transfer of Technologies, 2011).
A somewhat complicating factor in how time and money are allocated for various faculty activities can be traced to the rapid enrolment in both colleges and universities from 1978 through 1983 (Dennison & Gallagher, 1986), which was a key factor leading to the first strike by full-time faculty in the history of the Ontario colleges on October 17, 1984 (Roberts, 1994). One of the outcomes of the strike was the determination by an arbitrator who, after reviewing the workloads of faculty, imposed a comprehensive Standard Workload Formula (SWF) to limit faculty hours in all their responsibilities, a formula that remains essentially the same almost 28 years later (Clark, Moran, Skolnik, & Trick, 2009). Because it preceded the changes brought by The Acts of 2000 and 2002, this formula does not, however, include time for faculty to engage in research activities, which is still not recognized as a responsibility for college professors.

University faculty are given time to both teach and do research, with a professor’s time typically being allocated as 40 percent for teaching, 40 percent for research, and 20 percent for other duties. College professors are, however, hired to teach. Finding ways to pay for release time is an on-going struggle for colleges that usually have to find financial resources in small government grants or through funding that comes from industry and community partners that may benefit from the innovation and research projects conducted by colleges, but these funds tend to be small and do not necessarily off-set the cost incurred by the colleges conducting the applied research. Most national grant programs do not allow faculty release time as an eligible expense (Jurmain & Madder, 2011), with the exception of the NSERC College and Community Innovation program that will pay “about $7,000 per course load reduction” (Natural Sciences and Engineering Research Council, 2011). “Colleges do not receive operating grant monies to permit faculty, who teach up to 18 hours per week, to have reduced teaching loads in order to conduct research. External resources must be found for release time” (Jurmain & Madder, 2011, p. 20).
The total average workload hours per faculty per week in an Ontario college is 41.1 (HEQCO, 2012, p. 25).

In light of their original mission and mandate and the gradual evolution of the Ontario college system from its inception in the 1960s, it is perhaps not unexpected that not every consequence of the evolution to degree-granting institutions would have been anticipated and planned for, nor, for that matter, could it necessarily have been anticipated that vocationally focused colleges would eventually need to, for example, establish offices of research, create deans of research, and establish research ethics boards. The Ontario colleges were not intended to conduct research, nor were they expected to teach at the baccalaureate level, yet many of them are now doing both, and some are even beginning to look at the possibility of offering master’s degrees in applied programs (Humber College, 2012).

If those Ontario colleges that are engaged in offering applied undergraduate degrees, and perhaps eventually graduate applied degrees, are to successfully embrace degree granting status, decisions will eventually have to be made about how faculty are to engage in applied research activities, and how they are to be given time to engage in that process. As Fisher (2008) has shown, there is an appetite among college faculty to do research. but as Fisher and others also point out, very little thought seems to have been given to how the colleges would allocate time for faculty to engage in applied research activities (Catalfamo, 2010; Fisher, 2008; Jurmain & Madder, 2011; NSERC, 2007; Skolnik, 1995) or what form that applied research would take. That there is value for students in the research process does seem self-evident, as the scholarship and excitement of higher education is perhaps, best understood through active participation in the research process. “Students at all levels should… observe and participate in the process of
knowledge creation through discussion, problem-based learning approaches, laboratory work, field work and individual and group research projects” (Robertson & Bond, 2005, p. 531).

As a report commissioned by the ACCC (2011) notes, college faculty are, above all, professors, and are compensated for their work as such. It should perhaps be added that college professors are also hired as content experts, and usually for their vocational expertise more than for their teaching or research abilities. The difficulty arises when the teaching responsibilities – which occupy just about 100 percent of a college teacher’s time – run up against the perceived growing emphasis by college senior leadership that faculty also engage in applied research activities in order to be able to teach their students how to conduct applied research. Yet, “Given the hands-on and applied nature of the learning experience in colleges, the time required for faculty to be present in the classroom cannot be compromised” (p. 20), and still the expectation is there that applied research activities be engaged in by the applied degree students, (PEQAB, 2010a, p. 11; 4.1; p. 15) in order to satisfy degree requirements, and that these students will presumably be guided in that process by their professors.

To accommodate applied research activities, these activities may well require an increased time investment by faculty beyond the planning and delivery of curriculum. Research related duties that might devolve on college professors could include guiding the applied research process for students, and acting as mentors to students. Time for meetings to take place with project teams and industry partners outside of classroom might also be a requirement. For the time being, however, “Unlike university professors, college professors often conduct research on their own time, over and above their teaching loads” (Catalfamo, 2010, p. 15).
As has been noted by the ACCC (2006), “If the compensation and recognition for applied research is not deemed to be equitable and comparable to that provided for teaching, [college] faculty will be more reluctant to become involved in applied research” (p. 43).

Inevitably, this apparently ad hoc approach to engaging faculty in applied research activities is bound to bump up against the constraints of the collective agreements in all of Canada’s colleges. Fisher (2008a) also assessed how collective agreements in each of Canada’s post-secondary jurisdictions address the participation of faculty in research. An ACCC (2011), report included the following summary which is based on Fisher’s assessment:

- **Atlantic**: Collective agreements are silent on the role of faculty in research with the exception of Marine Institute, Nova Scotia Agricultural College, Cape Breton University and Université Sainte-Anne – Collège de l’Acadie. The collective agreement for faculty at the College of the North Atlantic does not explicitly address research and development, but the college recently launched a faculty research development plan.

- **Quebec**: The Ministère de l’Éducation, du Loisir et du Sport has a faculty release time program recognizing and supporting the involvement of [Collège d'enseignement général et professionnel] (CEGEP) faculty in research.

- **Ontario**: Collective agreements are silent on the role of faculty in research, however the Framework for a Research Policy for Ontario noted that although research is not required under the terms of employment of college faculty, many are interested in research.

- **Manitoba**: The three [publicly funded] colleges in Manitoba Red River College, Assiniboine Community College, and the École technique et professionnelle] have
negotiated separate collective agreements and applied research is recognized as a faculty activity.

- **Saskatchewan:** Collective agreements are silent on the role of faculty in research.

- **Alberta:** Colleges have the legislated mandate to perform R&D, however information on faculty recognition to participate in research was not included in Fisher’s report.

- **British Columbia:** For college faculty collective agreements, research activities are negotiated as a local provision. University colleges and institutes have included language regarding research activities in their local collective agreements.

- **Territories:** The collective agreement of Yukon College explicitly supports faculty involvement in research. Although Aurora College and Nunavut Arctic College both have territorial government recognition to perform R&D, specific information on their faculty collective agreements was not included. (p. 20)

An example of how a college collective agreement incorporates applied research in a professor’s assigned duties can be seen in the agreement governing the Red River College of Manitoba which, although the agreement does not speak to how this duty is to be accommodated in a professor’s schedule, does include applied research as a duty:

**Category (C)**

The academic year for instructors shall be the period September 1, to August 31.

(a) The parties recognize that the workload of a community college instructor includes but is not limited to the following in various proportions:

- Curriculum development;

- Assigned contact hours;

- Course/lesson preparation (new, revised or repeated);
- Evaluation (including marking, grading of oral presentations and other forms of student assessment);
- Student supervision (number of students);
- Student consultation;
- Committee work;
- **Applied Research;** [bolding and italics added for emphasis]
- Other professional duties related to instruction.

While the pattern of these duties may vary among disciplines and individual instructors, they constitute the principal obligations of an instructor during the academic year. (Red River College, 2009, p. 81)

The ACCC (2012b) 2009-2010 Applied Research Environmental Scan suggests that the most commonly identified measure for engaging faculty and staff in applied research is by supporting faculty release time (p. 4, fn. 3). Although faculty release time is typically not an eligible expense as part of federal granting council programs, the College and Community Innovation Program (CCI) does allow for some limited costs – about $7,000 - for course load reduction for faculty participating in research activities (ACCC, 2011 Feb., p. 20; NSERC, 2011).

Colleges in Ontario have, arguably, been conducting applied research and innovation activities almost since their creation as part of various contracts with local industry, through professional development activities, and as part of student in-class projects. What has been missing from those endeavours are the formal research administrative structures and reporting procedures, access to funding and granting agencies, college research networks, the presentation of research results, and the formalization of research infrastructures, many of which would
gradually be set in place in various colleges to varying levels of complexity following the Post-secondary Education Choice and Excellence Act of 2000, and the CAAT Act of 2002.

There are a number of additional, related issues emerging from this change for Ontario colleges to become applied degree offering institutions that may not have been anticipated in the original decision for colleges to offer degrees, including the possibility that there may be a growing divide between the faculty teaching in the degree programs and the faculty who are not. The academic credentials required by faculty in the degree programs are more advanced than those required to teach in diploma programs (PEQAB, 2010, pp. 24-25). There may also be a sense among college faculty that the professors in the degree programs will need time and resources set aside to conduct applied research, which would mean less teaching – much as the university model for faculty requires a balance between research, teaching and service to the community. If such a schism is developing, there could be implications for faculty morale in the colleges, and perhaps also for the terms of the Collective Agreement. Hoping, perhaps, to encourage the development of an applied research culture at the colleges, Ontario colleges have established needed research infrastructures such as research ethics boards and applied research offices and managers, and while Ontario colleges have accelerated their applied research activities and new funding opportunities have emerged, many of the findings and recommendations contained in D.J. Madder’s 2005 landmark report, *Innovation at Canadian Colleges and Institutes*, still apply in the Ontario context. (Conference Board of Canada, 2010, p. 7).

Progress has definitely been made as colleges have worked on maturing their applied research capacities and activities, but many of the fundamental challenges faced by Canadian colleges in 2005, and detailed by Madder (2005), continue to hamper Ontario colleges’ potential.
While levels of applied research interest and examples of applied research and innovation activities are evident in Ontario colleges, and at colleges across Canada (Jurmain & Madder, 2011; Fisher, 2008), this growth of research activity appears to be occurring in an uncoordinated fashion. The situation is further complicated by the scale of differentiation in terms of provincial legislation and collective agreements. “In particular, there is no established tradition, no clear organizational structure, no prevailing vision, and no coherent conceptual framework to guide the development of an effective and productive… research culture [in colleges]” (Fisher, 2009, p. 7).

**Institutional Culture**

The difficulty facing many Ontario colleges with respect to the introduction of applied research is one of culture. Making the change from being strictly vocational higher education institutions (HEI), to more academic, applied research oriented, and in some cases degree-granting institutions that require faculty to have advanced degrees as well as – for the most part – vocational experience, is one that is changing the nature and purpose of the colleges, moving them away from their original vocational education mandate (Ontario Department of Education, 1967), to one that is as yet not clearly defined nor entirely understood. This “academic drift” (Doern, 2008; Jones, McCarney, & Skolnik, 2005; Neave, 1979) – or shift from a vocational institutional focus to one that includes more academically focused applied research, innovation and applied degrees - is proving troublesome for faculty and administrators alike - and for some of the same reasons - and could be described as a force that is shifting many of the Ontario colleges away from the culture adherent to vocational HEIs, to an institutional cultural area somewhere between vocational HEIs and the historically well-established research cultures of universities.
The emergence of a more academic, institutional culture that falls somewhere between the traditional culture of vocational colleges and research universities is a new phenomenon in Ontario colleges, and given that change in institutional cultures is not easy (Becher & Trowler, 2001; Tierney, 1988), it is perhaps not surprising that some of Ontario’s colleges might find this institutional cultural evolution difficult to accommodate.

Giving the colleges the ability to engage in applied research, the Colleges of Applied Arts and Technology Act of 2002 (Ontario, Government of, 2002) followed on the heels of the Post-secondary Education Choice and Excellence Act of 2000 (Government of Ontario, 2000), which gave the colleges the ability to grant undergraduate, vocationally focused, degrees. These degrees are required by PEQAB (2010A) to include – among other elements – applied research (p. 11; 4.1; p. 15).

Considering that these changes came after some 35 years of relative stability in terms of the colleges’ sense of purpose, it is not surprising that these changes received a mixed reaction and generated a great many questions from faculty as well as administrators and potential students. The following is just one example of the sort of questions that colleges, administrators, students and parents are wrestling with – it was received by me, sent by an academic advisor, on March 28, 2012:

I just had an inquiry regarding the Bachelor of Applied Arts (Integrated Land Planning Technologies) program from a parent of an (sic) very interested applicant. The question the mom had is - are Fanshawe’s ‘applied degree’ programs recognized at the university level as a degree? For example would a graduate be able to use our applied degree as entrance to do their master’s? (Rosenkrantz, 2012).
Frustratingly, the answer is both yes and no, and depends entirely on whether or not the receiving institution has decided to recognize some or all of the credits earned in an Ontario college applied degree, or, indeed, the degree itself. This is small comfort for the students, and the parents of the students, who are trying to determine which academic track to follow in a multi-year post-secondary career. The extent to which a college offering applied degrees is able to respond accurately to such inquiries could make a difference of thousands of dollars and months of extra work for a student hoping to eventually pursue graduate work. The fact that the academic advisor who received the email and forwarded it to me for clarification felt the need to place inverted commas around the words “applied degree” speaks volumes about his/her unclear perception of the nature of a degree being offered at the college, even 12 years after the concept of college degrees was introduced. This example is a reminder that for many of the people working at all levels of the college, a “degree” is still a credential awarded by a university, and is not a notion that yet fits comfortably into the traditional institutional culture of the college.

To add to the confusion, Ontario colleges are prohibited by the PEQAB, from referring to their four-year applied degrees as “honours” degrees, the rationale being that the applied degrees have a greater focus on practice, and that the nomenclature “honours” should be reserved for the university degrees, which, by definition, have a greater research focus (Post-secondary Education Quality Assessment Board, 2010a, pp. 26, footnote 16). A report from Colleges Ontario (2012), however, makes the observation that “The restriction against the use of “honours” created an artificial distinction between college and university degrees and therefore should be lifted” (p. 9).

While it is beyond the scope of this thesis to explore the nature, history and evolution of academic institutional cultures, beyond recognizing that the emerging research culture in Ontario colleges is still in various stages of maturity and integration (Munro & Haimowitz, 2010), it is
worth noting just how important institutional culture is to the sense of identity and mission of an academic institution and the people who work there. As Tierney (1988) observes in his influential work, *Organizational Culture in Higher Education: Defining the Essentials*, even the most experienced college and university administrators will have occasion to ask themselves “What holds this place together? Is it mission, values, bureaucratic procedures, or strong personalities? How does this place run and what does it expect from its leaders?” (p. 3).

Questions such as these are questions about the nature of institutional culture, and can produce different answers in different institutions, even institutions ostensibly as similar in nature as the 24 Ontario colleges. According to Tierney (1988), “An organization’s culture is reflected in what is done, how it is done, and who is involved in doing it. It concerns decisions, actions, and communication both on an instrumental and a symbolic level” (p. 3). Quoting the anthropologist Clifford Geertz, Tierney points out that the culture of an academic institution is, as it is in any organization, built on the shared assumptions about, and understanding of, the patterns, stories and symbols of the institution.

The introduction of applied research functions and applied degree programs has changed the cultural narrative within these institutions, and such changes can lead to cultural conflicts, especially if a schism develops between those faculty members who engage in applied research, have advanced degrees, and teach primarily – if not exclusively – in the applied degree programs, and those who do not. In institutions which were essentially designed to be corporate in their operational structures and decision-making approaches, rather than academic (Dennison & Gallagher, 1986; Levin, 2000), this transition to an institutional culture that will include more academic endeavours such as the delivery of applied degrees with the attendant focus on advanced applied research, signs of a developing schism would be indicative of at least a slight
cultural shift from higher education institutions with essentially corporate governance driven by managerial concerns to institutions with a greater emphasis on academic forms of institutional governance, such as having a senate in place.

The applied degrees have been built on the expertise of faculty and the curricular foundations of the colleges, and on the ethos, traditions and values of the colleges which are rooted in the model of experiential learning (Skolnik, 2013), and on the corporate management structure. The drift toward a greater emphasis on more academic course content, taught by professors with more advanced degrees than specific vocational experience, does not necessarily come without challenges.

In terms of the institutional culture that is evolving in colleges, it is one split between the academic side of the institution, and the managerial, or corporate, side. The academic culture arises primarily from the disciplines of the faculty where teaching and student engagement are valued, as are shared governance and decision-making, whereas the managerial culture focuses on the goals and purposes of the institution and values efficiency, effective supervisory skills, and fiscal responsibility (Kezar & Eckel, n.d.). Quoting Bergquist’s (1992) *The Four Cultures of the Academy*, Kezar and Eckel (n.d.) illustrate how the managerial culture might hinder an institution's ability to change structures, whereas a collegial culture was better equipped to modify institutional structures because there was greater trust (p. 439).

The existence of a corporate management culture in a college environment tends to limit the curriculum development to those activities that prepare the students for employment. The ability of faculty to influence the decisions made in the governance of the college is essentially limited bringing influence to bear on the board of governors where the members include 12 members including one student, one academic staff member, one administrative staff member,
and one support staff member, all elected. “While other structures and arenas may provide for faculty engagement in institutional decision-making, the legal role of faculty in governance either in legislation or in collective agreements is minimal, perhaps limited to one vote on a seventeen-member governing board” (Levin, 2000, p. 101).

The culture of corporate management has, arguably, led to a fractious labour-management relationship through the contentious relationship that exists between management and the Ontario Public Service Employees Union (OPSEU), in the Ontario colleges (Skolnik, 1988), rather than a collegial, student-centric relationship with greater reliance on the professors’ understanding of the student experience (Wilson, 2008). To help overcome these conflicts it will be important for the colleges to try to accommodate and encourage the development of shared goals among the various stakeholders within the college structure, and to address organizational tensions that may arise from the efforts to introduce a research culture.

The nature and sense of identity of all post-secondary educational institutions have changed dramatically over the past 60 years or so, certainly in consequence of the transition from elite institutions to the “massification” of higher education, but also in terms of the increasing levels of competition among institutions, the uncertainty about access to resources, and changes in terms of levels of enrolments (Becher & Trowler, 2001). The emergence of online universities and programs and, for the European Union, an increasingly easy transferability for students moving among higher education institutions, is also bringing changes to the academic institutional cultural configurations, which especially for colleges, now has to include a larger element of entrepreneurism as they enter the arena of having to attract applied research partners from the community.
The evolving applied research culture in many Ontario colleges is attended by all of the concerns about academic drift, mandate changes, degree status, tenure, academic freedom to conduct research, and so on. The often unspoken question that lurks around the edges of this evolution has to do with how many of Ontario’s colleges are intent on eventually becoming universities, and if and when that happens, how will the people the colleges were originally designed to serve find opportunities to pursue vocationally focused, post-secondary education? Sheridan College, for instance, has already made a public statement that it will become a university by 2019,

Frustrated by growing demand for its degree programs that Ontario graduate schools refuse to recognize — most are called “applied” degrees when offered by a college — Sheridan president Jeff Zabudsky said the school owes it to students to become an institution that gives its grads the most options… ‘We’re being driven by student demand for degrees, but I want every graduate to be able to carry on to grad school if they choose. Currently they confront many barriers.’ (Brown, 2012)

With Humber College’s (2012) stated intent to offer applied graduate degrees, that institution may well be on the same path as Sheridan, while Sheridan College appears determined to leave behind the purely vocational college culture associated with the original mandate of the Ontario Colleges, as well as the cultural framework of the vocational college in transition - including, it would appear, the vexing problems of negotiating with the OPSEU faculty union - in order to become a university. As a university, Sheridan would become part of the research and teaching culture that has a long and established tradition in Ontario universities. Meanwhile, other colleges in the province are still trying to find some secure footing in the emergent college research culture.
This emergent culture occupies the ground between the vocational and university cultures previously identified as being a polytechnic college culture, or an Institute of Technology and Advanced Learning (ITAL) culture; distinctions that are not clearly understood in Ontario, and whose differentiation purpose appear vague.

It is not clear what benefits would result from another name change for some institutions that is unaccompanied by concrete measures to differentiate them from the rest of the colleges, especially the adoption of a name that is as laden with such ambiguity as polytechnic.” (Jones & Skolnik, 2009, p. 25).

Neither terms appear to have garnered much traction among college faculty, students or the parents of college students, all of whom likely have no difficulty identifying a university culture and a college culture, but who may be hard pressed to describe what the culture is of a college that also offers degrees, but degrees that are “applied.”

However the applied research culture evolves, the institutions that finally emerge to fill the niche between traditional, vocationally-focused community colleges, and the traditionally research-intensive universities, cannot continue to be neither fish nor fowl in the province’s post-secondary landscape. These institutions will have to decide if it is indeed possible to be all things to all people, retaining the original, accessible, vocationally focused teaching mandate of the colleges, while also offering vocationally focused degrees in applied areas of study that will be accepted by the graduate schools of the provincial universities.

Whatever this post-secondary educational model will ultimately be called, it will surely have to accommodate both faculty with advanced degree credentials conducting the kind of applied research one would expect of an advanced academic institution catering to a select group of students, and faculty with few no or advanced degrees, but extensive applied experience in
their fields of expertise, conducting little or no applied research, catering to students intent on building careers in the vocational fields of endeavour.

**College and University Research**

To differentiate between university research and college applied research in this study, university research will be thought of as fundamental – or basic – experimental and theoretical in nature (Organization for Economic Cooperation and Development, 2002). Basic or fundamental or pure research is driven by a researcher’s curiosity (Lawrence Berkeley National Laboratory, unknown). The main motivation for engaging in basic research may be said to be a desire to expand human knowledge more than to create or invent something, and there is not necessarily any commercial value to the discoveries that result from basic research. The research conducted in Ontario colleges can be thought of as primarily applied research, which, although also a form of original investigation in order to acquire new knowledge (Organization for Economic Cooperation and Development, 2002), can be said to be designed to solve practical problems rather than, by definition, acquiring knowledge for knowledge's sake as is the case with basic research (Lawrence Berkeley National Laboratory, n.d.). Gilles Paquet (2006) of the University of Ottawa distinguishes among three types of knowledge which he calls saviors, savior-faire, and savior-être. “These distinctions might, in English, be termed: knowing things or about things – theoretical knowledge; knowing how to do things – practical or applied knowledge; and knowing how to be - personal development” (Skolnik, 2006, p. 12). As Skolnik notes, universities concentrate largely on the first type of knowledge, while colleges and institutes tend to concentrate on the second type of knowledge.

The Frascati Manual (Organization for Economic Cooperation and Development, 2002), includes an added definition for research and experimental development (R&D) and defined this
activity as activities that “comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications” (p. 30). This document points out that research and experimental development activities are comprised of basic research, applied research and experimental development, where experimental development is described as “systematic work, drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed” (p. 30).

The primary output from fundamental and theoretical research – or research usually conducted in a university - is new knowledge, often disseminated in academic publications. College research is more concerned with applied - or vocational - research, and research that is compelled by a need for innovation. This kind of research is driven primarily by market demand for knowledge that can be used to improve or adapt technology, or improve industrial processes and business practices to meet client needs. Colleges are mainly involved in the applied research, development, commercialization, support and knowledge transfer stages of the research continuum. The Frascati Manual notes that the line between research and experimental development, and innovation activities, is a difficult one to draw (p. 41) because the two activities are so closely related.

“Technological innovation activities are… actually, or are intended to, lead to the implementation of technologically new or improved products and processes. R&D is only one of these activities and may be carried out at different phases of the innovation process” (p. 18).
Outputs from college applied research include new technologies adopted by organizations, new or improved products and processes, business improvements, technical solutions, and policy recommendations. Dissemination of college applied research is less focused on peer-reviewed publications, and is more likely to involve community presentations, articles in newspapers or business journals, presentations to partners, and student reports. (Jurmain & Madder, 2011, p. 7)

The distinction between basic and applied research is not always obvious, and may depend on perspective. If, for instance practical applications from research are either immediate or in the near future, it can be thought of as being essentially applied research. If, however, a practical application of the results of the research cannot be envisioned, then it can be described as pure, or basic, research (Lawrence Berkeley National Laboratory, unknown). In this light, it is evident that while universities conduct basic research, they may also conduct applied research with immediate and long-term practical applications, as evidenced by the Applied Research and Commercialization Initiative operated by the Federal Economic Development Agency for Southern Ontario, an initiative that is open to all “not-for-profit post-secondary institutions (PSIs) located in southern Ontario that are directly or indirectly authorized… to deliver post-secondary courses or programs that lead to recognized and transferable post-secondary credentials” (Federal Economic Development Agency for Southern Ontario, 2012, p.1). As an example, Brock University (2010) is one university that took advantage of the funding initiative because “The Initiative allows Brock to provide up to $100,000 in funding to establish partnerships with SMEs to undertake pre-commercialization, applied research, technology development, piloting and/or demonstration activities that will help these SMEs develop innovative products, practices and processes” (Brock University, 2010, p. 1).
Polytechnics Canada, however, point out that members of Polytechnics Canada, an organization established to support colleges, conduct research that can be considered “in contrast” to the basic research done at Canadian universities, and do not conduct basic or theoretical research.

In contrast to the basic research conducted by universities, Polytechnics Canada members perform practical and commercial applied research based on industry needs. We conduct research as directed by our small and medium-sized business partners who seek our help to develop products and processes and bring them to market. We do not conduct basic or theoretical research, or research for its own sake. (Polytechnics Canada, 2012)

Suggestions have been made that fairly generous leeway should be granted the definitions of research, innovation and scholarship, most notably, perhaps, by Boyer (1990) who divided the notion of modern scholarship into four components: the scholarship of discovery, the scholarship of integration, the scholarship of application and the scholarship of teaching. While a detailed discussion of the broad parameters of these definitions of scholarship lie beyond the scope of this study, it is worth observing that Boyer felt it was important to move the definition of research beyond the realm of discovery to include the application of knowledge and the importance of incorporating a better understanding of the role of knowledge into research about teaching. “The first two kinds of scholarship…reflect the investigative and synthesizing traditions of academic life. The third element, the application of knowledge… moves toward engagement” (p. 21). As for the importance of the scholarship of teaching, Boyer emphasizes that good teaching is dependent on faculty expertise and engagement: “In the end, inspired teaching keeps the flame of scholarship alive” (p. 24). For college professors this comment is particularly apt as for many of them, especially those who have been working in the colleges for a number of years, research
was not a motivation to take up the profession, but teaching was. In his influential article *Scholarship in Community Colleges: The Path to Respect*, Vaughan (1988) makes the observation that community colleges are not seen as research institutions, and that, in fact, in light of the teaching workload, office hours and the other duties that go along with being a college faculty member, there simply isn’t time to engage in research and scholarship at the community college level. Although Vaughan is speaking of American community colleges, the situation is much the same for Ontario colleges, and has not changed since Vaughn made his observations in 1988 (Catalfamo, 2010; Fisher, 2008; Jurmain & Madder, 2011; Madder, 2005; NSERC, 2007; Skolnik, 1995).

**Rationale**

Colleges in Ontario that are engaged in applied research activities continue to strive to achieve the kind of institutional and academic maturity that will allow them to attract students who hope to engage in applied research as part of their studies, and possibly seek degree pathway completion within the college or through the college to a university, and to also attract professors with advanced academic credentials and proven ability to conduct applied research. As they do, these institutions will need to institutionalize a policy framework that will allow the professoriate the necessary time to develop proposals, apply for funding, conduct the applied research and report the findings without having to worry about how to accommodate time for research in their professional and personal lives.

The issue of what kind of applied research might be done by college faculty, and how they were going to find time to conduct research, became very apparent to me when I became part of the then fledgling Research Ethics Board at Fanshawe College in 2005. As the Board was working its way through learning the implications of the Tri-Council Policy Statement on
conducting ethical research involving humans (TCPS) (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, 1998), we also quickly learned that faculty who were interested enough in conducting applied research to submit a protocol to the REB did not always have a clear sense of what constituted sound research with good methodology and proper safeguards for the participants. The ones who did engage in research were either doing so on a very part-time basis – usually on their own time – or, in a few cases, during sabbatical leaves, and sometimes as part of their own advanced degree work. It also became very evident that there was no institutional policy mechanism in place to allow faculty the time and resources to do concentrated and extended research as part of their regular duties.

That this lack of a specific policy regarding the assignment of time for applied research activities by professors would become problematic became especially clear as the Ontario colleges moved to develop their applied degrees, and as some college leaders wanted to expand their applied research activities in those degrees (Clark, Moran, Skolnik, & Trick, 2009) following the official sanctioning of Ontario colleges’ applied research activities by the Ontario Colleges of Applied Arts and Technology (CAAT) Act of 2002 (Government of Ontario, 2002).

Funding, at least in part, was sought through the use of the Canada Foundation for Innovation (CFI) grants, a program of funding launched by the Government of Canada in 1997 (Canada Foundation for Innovation, 2012). The CAAT Act does not list applied research as an object of the colleges,

The objects of the colleges are to offer a comprehensive program of career-oriented, post-secondary education and training to assist individuals in finding and keeping employment, to meet the needs of employers and the changing work environment and to
support the economic and social development of their local and diverse communities.

(Government of Ontario, 2002 c. 8, Sched. F, s. 2 (2))

The Act does, however, state that colleges can undertake applied research as a means of carrying out those objects (Government of Ontario, 2002 c. 8, Sched. F, s. 2 (3); MTCU, 2010, p. 1), so while the Act does not contain an expectation that faculty teaching in these applied degree programs engage in applied research activities, faculty who do so will surely need to understand what applied research is, how to conduct it, and how to help their students do the same.

Allowances have rarely been made for release time to conduct serious research; so, whatever research has been done has been largely a personal rather than an institutional pursuit. Few people can sustain a personal research agenda for any length of time under these conditions. (Dennison & Gallagher, 1986, p. 263).

When, in the winter of 2010, I decided to pursue my Ph.D. degree, I discovered that little had changed, and that while my college is supportive of faculty pursuing advanced degrees, and had, at that time, matured as a research institution to the point of having a well-developed Research Ethics Board, a Dean of Research and an established research policy, no progress had been made in the area of developing and formalizing within the research policy a section that makes clear how much time - if any - professors can expect to be given to conduct research. The same is true of other Ontario colleges (Clark, Moran, Skolnik, & Trick, 2009).

Those Ontario colleges that wish to foster a reputation as research institutions will, at some point, have to come to grips with the issue of how to make it possible for their professors to engage in the kind of innovative applied research that will not only result in research money coming to the institution from government granting agencies and the private sector, but create the projects and results that will place these professors, their students, and their colleges, at the
forefront of a developing economy that can rely on colleges and their applied research capacity to produce successful, marketable results.

A Conference Board of Canada study published in 2010 makes some important observations about applied research in Ontario colleges, pointing out that Ontario colleges’ applied research is proving to be a promising mechanism to stimulate innovation and productivity, and to improve education, training, and employment outcomes for students. “Indeed, nearly all interviewees in colleges, businesses, and governments who are aware of colleges’ applied research activity were positive and enthusiastic about its potential to contribute to Canada’s social and economic performance and prosperity” (p. 6).

The report goes on to note, however, that awareness and understanding of the colleges’ applied research remains low among potential business clients, and that even the government itself is still unsure about how to measure and assess the outputs and outcomes of the research. “…colleges themselves are struggling with faculty release issues, mixed levels of support and skill among faculty and administration, and relative inexperience in managing research projects and partnerships with business” (p. 6). It should be noted that the Conference Board study also cited the lack of funding for research, and the lack of time, as barriers to conducting innovation activities in the colleges.

**Research Questions**

The first of the following research questions was presented to two senior staff members from the relevant provincial government sector, who were closely connected with the planning phases of the evolution of the colleges leading up to the Post-secondary Education Choice and Excellence Act of 2000, and the Colleges of Applied Arts and Technology Act of 2002. This question was also presented to five senior leaders who were present in the college system when
the Post-secondary Education Choice and Excellence Act of 2000, and the Colleges of Applied Arts and Technology Act (CAAT) of 2002 were introduced, and who could speak to the experience of the college leaders at the time. The third question was presented to four senior leaders, one from each of the four case study colleges, who could speak to current conditions in terms of the state of applied research, including time for faculty to engage in applied research activities, at their institutions.

Research Question One (RQ1) explored the extent to which Ontario colleges and the Ministry of Training, Colleges and Universities planned for the creation of a research culture at the colleges following the introduction of the Post-secondary Education Choice and Excellence Act of 2000, and the Colleges of Applied Arts and Technology Act of 2002, and if in that planning they anticipated meeting the requirements needed to ensure that faculty who teach in the diploma and applied degree programs have the necessary time, funding and other resources to conduct applied research. RQ1 also looked at what supports were available to faculty to earn the necessary advanced academic qualifications to teach in the applied degree programs where some research activities are an expectation, and whether publications, grants and research awards would influence the hiring practices of colleges in terms of bringing new faculty on board.

Research Question Two (RQ2) considered what Ontario colleges have done since the advent of these Acts to incorporate applied research activities into their institutions by finding time for faculty to lead and conduct research, either through the funding of faculty time for research or some other mechanism such as the SWF. RQ2 also considered to what extent faculty participation in research activities influence the hiring and promotion of faculty.

Finally, Research Question Three (RQ3) looked at what differences are observed in a “novice” vs. an “integrated” research college as described by Madder’s (2005) typology
(Appendix H) in terms of how time is allocated to faculty to engage in research activities. RQ3 also examined how faculty efforts to support student engagement in research activities are expected and rewarded by the college, what support systems are in place to assist faculty in research activities, including assistance with grant applications and applications to research ethics boards, and also if mentoring of faculty who express an interest in engaging the research process is available. (See also Chapter 3 for Research Questions/interview Matrix).

**Theoretical Frameworks**

Because the goal of this dissertation is, in part, to make some progress toward understanding the needs of both the faculty in a college, and the college as an institution - to incorporate what Fisher (2009) calls the Conceptual Framework for Research into the culture of Ontario colleges - the philosophical worldview of this study will incorporate elements of what Creswell refers to as the Social Constructivist and the Advocacy and Participatory worldviews (Creswell, 2009).

As Creswell (2009) notes, the goal of Social Constructivist research is to rely as much as possible on the participants’ view of the situation being studied (p. 8). As the research consists, in large part, of interviews, there will be ample opportunities for the participants to reflect on their experiences as senior leaders during this time of significant change in the Ontario colleges. As a faculty member, and as both a Research Ethics Board member and Chair at my college, I have been, and continue to be, affected by the decisions that were made by these leaders as I try to understand, and help others understand, how applied research is supposed to fit into a professor’s work responsibilities in an institution that was never designed to accommodate formal applied research activities. I, like other Social Constructivist researchers, will therefore, in Creswell’s words,
…recognize that their own backgrounds shape their interpretation, and they position themselves in the research to acknowledge how their interpretation flows from their personal, cultural, and historical experiences... Rather than starting with a theory… inquirers generate or inductively develop a theory or pattern of meaning. (p. 8)

At the same time, there is, at least to some extent, a political agenda behind my motivation to do this research, which is to help foster a cultural and intellectual environment favourable to applied research in the colleges so that applied research will be encouraged and formally accommodated. This agenda is what Creswell refers to as an Advocacy and Participatory world view. During informal conversations with me, faculty who have been teaching for a long time will sometimes confess to a sense of ennui in their work which, they say, could be alleviated by the ability to “do something else.” When applied research is suggested as a possibility, there is often an expression of interest in such endeavours. Indeed, when pressed on the point, faculty will often talk about informal, basic applied research projects they are already engaging in the form of advanced readings in their fields of expertise, course or degree work they have undertaken on a part-time basis, or program specific, course-based work they engage in with their students, sometimes with some involvement of community-based businesses and organizations, and sometimes in order to achieve accreditation or certification in a particular professional field.

This advocacy and participatory worldview is described by Creswell as research that contains an action agenda for reform that may change the lives of the participants and the researcher. The ability to engage in more formal applied research in the colleges may not primarily be what Creswell calls an important social issue of the day, but it is an issue of empowerment for faculty and students in that by adding applied research activities to their
respective work and studies, they may be able to engage the subjects they are studying at a deeper, more intellectually involved, level. In the institutional evolution to applied research and applied degrees offerings at the colleges, the colleges are moving from their historic role of being strictly vocational institutions to also being more academic institutions with a greater emphasis on academic work, and with a need for faculty who can engage in this applied research work with the full and official support of their institutions.

Once an applied research culture has been integrated into the social and institutional fabric of a college, the entire institution would very likely stand to benefit from faculty and students who are engaged in interesting and work-related applied research projects, sometimes with community partners who have real research and innovation needs, and professors who are able to pursue applied research activities in order to further explore their fields of expertise, in the course of which they may transmit some of that engagement and enthusiasm to their students.

If a policy framework related to the inclusion of assigned time for more formal applied research activities in Ontario colleges can be developed, the most likely beneficiaries would be students in particular and faculty and upper management in general, who could all stand to gain from a more engaged and revitalized faculty, a faculty who have clearly indicated that applied research is something they value and would like to engage further. “The findings of this study suggest that all stakeholder groups (students, faculty, industry partners, and colleges) that are involved in applied research activities realize benefits, including skill development, professional growth, and real-world experience with industry exposure” (Catalfamo, 2010; Fisher, 2008).

Scope and Limitations of Research

The purpose of this study is to explore how the role of Ontario college faculty in the four case study colleges has evolved since the advent of the Post-secondary Education Choice and
Excellence Act (Government of Ontario, 2000) and the Colleges of Applied Arts and Technology Act of 2002 (Government of Ontario, 2002), and to consider the extent to which the initial decision to create a research culture at the colleges included making time available to the professoriate to conduct applied research. The study also attempts to ascertain how Ontario colleges at various stages of applied research and innovation sophistication are accommodating faculty need for time to engage in applied research activities. Using Madder’s evolution of college research and innovation typology (Madder, 2005), this study compares the current state of four Ontario colleges at various stages of applied research evolution, with a focus on to what extent - if any - these institutions have developed and implemented a policy or procedure for allocating release time to faculty engaged in applied research activities. What the study will not be able to do is discuss in detail issues such as the implementation of a professional development program for faculty to learn about how to conduct applied research, nor the specifics of how faculty who engage in applied research activities or teach in applied degree programs where applied research involving students is an expectation will be able to teach their students how to conduct applied research.

There are some limitations in the research for this study and in the potential recommendations arising from the analysis of the data collected. The still somewhat nascent nature of research and innovation initiatives in Ontario colleges is evident in the relatively limited number of studies and secondary sources that tackle this topic, so while this study draws upon these sources as much as possible, there is still not an extensive and varied range of resources exploring what is still a relatively new phenomenon in Ontario colleges.

There may be some limitations in the research for this study, and in the potential recommendations arising from the analysis of the data collected, in that the findings were
produced from a small number of colleges and participants in the study, although the pool of senior leaders at the government level was limited to begin with. It is expected, however, that the experiences and observations of the senior leaders who participated in this study will lead to a broader understanding and appreciation of the burgeoning applied research culture at Ontario colleges, and the changing roles of college faculty as they seek to engage the applied research process at a deeper, more academic and comprehensive level.

**Definitions of Terms**

In order to try to create a shared understanding of the terms used by the researcher in this study, the following definitions are used throughout:

**Professorial designation:**

There is a lack of clarity around what professional designation should be assigned to the professoriate at colleges. Historically, professors with a Ph.D. working in a university are addressed as “professor,” but increasingly those teaching at colleges, regardless of their academic achievements, are also referred to as “professors.” For the sake of consistency, I will in this study refer to college professors in the collective as either faculty or professors.

**Colleges:**

The Ontario colleges are currently comprised of 21 Colleges of Applied Arts and Technology (CAAT) and three colleges with the nomenclature of Institutes of Technologies and Advanced Learning (ITALs): Humber Institute of Technology and Advanced Learning, Sheridan Institute of Technology and Advanced Learning, and Conestoga Institute of Technology and Advanced Learning (Ontario Ministry of Government Services, 2012). Algonquin College, George Brown College, Humber Institute of Technology and Advanced Learning, Seneca College, and Sheridan Institute of Technology and Advanced Learning also identify themselves
as polytechnic institutions (Polytechnics Canada, n.d.). For the sake of clarity and consistency all the Ontario colleges governed by the laws and policies of the Ministry of Training, Colleges and Universities (MTCU), and part of the set of post-secondary institutions established in the mid to late 1960s called Colleges of Applied Arts and Technology, will be referred to in the collective as “colleges” when discussed in this study.

**Applied Research and Innovation:**

For the purposes of this study, the term “applied research” will be an omnibus term embracing in the broadest sense the range of research activities engaged in by Ontario colleges. “Applied research” as used in this study will, for instance, include the range of research activities associated with the term “innovation,” and will also encompass applied research driven by the personal curiosity of college professors. In his 2008 report *Faculty Participation in Research at Canadian Colleges: A National Survey*, Fisher (2008) quotes a number of scholars – including Madder – on the issue of the use of the umbrella term “applied research,” saying that “Applied research” is “…an umbrella term referring to a variety of research activities related to the application of knowledge, and is often associated with terms like innovation, research and development, commercialization, and technology transfer” (p. 6).

When asked to elaborate on the use of the terms “applied research” and “innovation” in a paper co-authored with J. Haimowitz, *Innovation Catalysts and Accelerators: The Impact of Ontario Colleges’ Applied Research*, Munro observed that “…the link between applied research and innovation, especially with the colleges, is rather tight because the aim of the business or public partners is usually to produce something that they can sell or use quickly” (Munro, Personal email communication, 2012). Madder points out that there is considerable lack of
clarity around the meaning of “applied research” and “innovation,” suggesting that it is not uncommon for there to be ambiguity around the use of these terms in a field that is still in its early development. “You might put it into the context of a relatively young field, you know, 150 institutions trying to figure out what it means for them, so there will be different uses of the words” (Madder, Personal telephone conversation, 2012).

For Madder, applied research and innovation activities are closely linked activities in the colleges, with applied research being a subset of innovation activities, “Applied research is basically problem-solving, or developing a product or process in relation to a need... Innovation [is understood] in terms of business process, social innovation, and our own innovation as institutions in learning, understanding better how to support student learning” (Madder, Personal telephone conversation, 2012). A 2011 Association of Canadian Community Colleges (ACCC) report notes that “Madder’s typology (2005) highlighted the importance of applied research governance structures with dedicated human resources, responsible for managing the function and developing policies and procedures on matters such as ethics and intellectual property rights” (ACCC, 2011 Feb.).

As Fisher (2008) and others have pointed out, developing a clear understanding of what is meant by applied research and innovation requires further work in order to minimize nomenclature confusion. An overview of Internet sourced definitions runs the gamut from Wikipedia’s “Applied research is a form of systematic inquiry involving the practical application of science. It accesses and uses some part of the research communities’ (the academy's) accumulated theories, knowledge, methods, and techniques, for a specific… business, or client driven purpose” (Wikipedia, 2011), to the Organization for Economic Co-operation and Development (OECD)’s “Applied research is original investigation undertaken in order to
acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective” (Organization for Economic Cooperation and Development).

The term “innovation,” if used as distinct from “applied research,” will follow the definition used in the ACCC Science, Technology and Innovation Council *Productivity through Innovation: Applied Research at Canada’s Colleges and Institutes, Report for 2009.10*, quoting the Science, Technology and Innovation Council (STIC), which describes it as

The process by which individuals, companies and organizations develop, master and use new products, designs, processes and business methods. These can be new to them, if not to their sector, their nation or to the world. The components of innovation include research and development, invention, capital investment and training and development.”

(ACCC (c), 2011 Feb., p. 1)

**Applied Degrees:**

The applied degree offerings by Ontario’s colleges have been variously referred to as “applied degrees,” “vocational degrees,” “vocationally specific baccalaureate degrees,” and “degrees in applied areas of study,” in an assortment of documents from newspaper and magazine articles, to documents and communications from the colleges, and from scholarly articles to documentation supplied by MTCU. In its *Handbook for Ontario Colleges: Applying for Ministerial Consent under the Post-secondary Education and Choice and Excellence Act, 2000*, PEQAB (2010a) refers to the college baccalaureate as both “degrees in applied and professional areas of study” (p. 20), “degrees in applied areas of study” (p. 26 (footnote 15)) and “college degrees” (p. 11).

In spite of being four year baccalaureate as recognized by the Ontario government (Government of Ontario, 2000), the Ontario colleges are prohibited from referring to these four-
year applied degrees as “honours” degrees by the Post-secondary Education Quality Assessment Board (PEQAB), the rationale being that the applied degrees have a greater focus on practice, and that the nomenclature “honours” should be reserved for the university degrees, which, by PEQAB’s (2010a) definition, have a greater research focus (pp. 26, footnote 16). A report from Colleges Ontario (2012), however, makes the observation that “The restriction against the use of “honours” created an artificial distinction between college and university degrees and therefore should be lifted” (p. 9). In this study, however, the term “honours applied degree” will not be used.

As with the term “applied research,” there is some lack of clarity around what exactly an “applied degree” is, although the term is used frequently with an underlying assumption that it will be understood to mean a baccalaureate degree, but with a focus more on the vocational aspects of higher education – learning more about how to do something, than reading and thinking abstractly about the nature of what needs to be done. Or put another way, the college applied degree represents the techne as opposed to the Episteme philosophical approach to knowledge as originally conceived by Aristotle, in which the techne approach is concerned with the pragmatic, variable, context-dependent, and is primarily concerned with production based on practical considerations governed by a conscious goal. This techne concept is still with us today, and central to the language of the applied degree concept, in terms such as "technique," technical," and "technology." Episteme speaks to study of scientific knowledge that is universal, invariable, context-independent and concerned with scope and validity. The concept of epistememe is inherent in words such as "epistemology" and "epistemic." (Flyvbjerg, 2001).

At the College of Education, University of Illinois, the Office of Community College Research and Leadership (OCCRL), the Adult Learner and the Applied Baccalaureate Study that
looked at all 50 States to determine the extent to which applied degrees are offered, defines an applied baccalaureate as “Degree program emphasizing applied coursework and applied learning at the upper division or throughout the entire collegiate pathway, which often begins with an applied associate degree” (Office of Community College Research and Leadership, 2012). Examples of applied degrees include Bachelor of Applied Science (BAS), Bachelor of Applied Technology (BAT) and Bachelor of Technology (BT) (Office of Community College Research and Leadership, 2012).

Although Ontario colleges do not offer or include associate degrees, which is an American construct that has echoes in the Alberta design of college applied degrees, as Skolnik (2013) has noted, the Post-secondary Education Choice and Excellence Act that gave Ontario colleges the authority to grant applied degrees, refers to degrees in applied areas of study. The legislation is, however, silent on what is and is not an applied field of study (p. 128). Skolnik himself chooses to refer to the college applied degree as “applied baccalaureate degrees” (p. 128).

For OCCRL’s initial research on applied degrees, funded by the Lumina Foundation, the applied baccalaureate degree was defined as “a bachelor’s degree designed to incorporate applied associate courses and degrees once considered as “terminal” or [at a] non-baccalaureate level while providing students with the higher-order thinking skills and advanced technical knowledge and skills so desired in today’s job market” (Townsend, Bragg, & Ruud, 2008, p. iv; Skolnik, 2013).

While the definition provided by Townsend, Bragg and Ruud (2008) provides an excellent definition of the purpose of an applied degree, for the purposes of this study, however, an applied degree, applied baccalaureate, or degree in an applied area of study, will be thought of
as a baccalaureate in an applied field of study, offered at an Ontario college under the auspices of
the Provincial Post-secondary Education Choice and Excellence Act, and with a *techne*
philosophical underpinning. In the interest of simplicity and consistency, I will refer to them as
applied degrees unless otherwise indicated because I believe this name most clearly reflects the
intent and scope of the college applied baccalaureate concept.

**Organization of the Thesis**

This thesis is organized into five chapters. Chapter 1 provides a contextual overview of
the research issues related to this study, a historical background, the rationale for, and purpose
of, the study. Chapter 1 also addresses the research questions and a consideration of the
theoretical framework, as well as a section discussing the terms and definitions used in the study.

Chapter 2 explores and analyzes relevant literature, including noting any gaps that may
exist, and will attempt to identify ambiguities and other points of uncertainty that will be
explored in the research.

Chapter 3 discusses the research design and methodology, including data collection and
analysis, limitations of the methodology, and any ethical issues and concerns.

Chapter 4 presents the web content analysis used to select and rank the four colleges used
in this study, as well as the data and major themes to emerge from the interviews with the senior
leaders from the colleges and the relevant provincial government sectors.

Chapter 5 completes the study with a discussion of these themes in a broader perspective,
taking into consideration the relevant literature, and will offer summative observations about the
key findings, including suggestions for the implementation of the study results, and some
recommendations for further study.
Chapter 2: Literature Review

Introduction

The purpose of this literature review is to provide a broad understanding of the context for research into how the role of Ontario college faculty has evolved since the advent of the Post-secondary Education Choice and Excellence Act (Government of Ontario, 2000) and the Colleges of Applied Arts and Technology Act of 2002 (Government of Ontario, 2002), and to consider the extent to which these changes to the colleges included making time available to the professoriate to conduct applied research. The study also attempts to ascertain how Ontario colleges at various stages of applied research and innovation sophistication are accommodating faculty need for time to engage in applied research activities. This review will attempt to integrate and interpret the available information by concentrating on six particular areas as they relate to the research topic: Applied research in the Ontario colleges and related expectations; the nature of the relationship between Ontario colleges and universities; the planning for applied degrees; post-secondary education models in other jurisdictions; the effects of the Collective Agreement on the changing role of college faculty as that agreement relates to applied research activities; and the role and effect of the Post-secondary Education Quality Assessment Board.

The literature review will indicate that the cultural changes currently being experienced by the province’s colleges are very significant. These cultural changes are part of a larger shift in the post-secondary educational landscape of the province, and are also altering the direction of the colleges’ evolution in terms of what academic services they offer their students, and how colleges work with the private commercial sector, and with universities.

As colleges in Ontario evolve as educational institutions, a central determinant of what form their changing role will take will be the extent to which they may decide to remake
themselves as degree-granting institutions offering applied degrees in various fields of vocational learning, or choose another direction. Central to that evolution will be how well colleges help their professoriate adjust to what will, especially for those teaching in the degree programs, be a very different kind of college teaching experience. Issues related to the hiring of Ph.D. qualified faculty to teach in degree programs as determined by the Ontario Post-secondary Quality Assessment Board (PEQAB), the notions of tenure and academic freedom in the colleges, and the requirement for including applied research in the applied degree programs – also a stipulation by PEQAB (Fisher, 2009; Floyd, Skolnik, & Walker, 2005; Laden, 2005; PEQAB, 2010), all raise questions about how the colleges are going to accommodate these requirements, and also deal with what may be perceived as an “academic drift” (Doern, 2008; Jones, McCarney, & Skolnik, 2005; Neave, 1979) away from what was the original intent for the colleges.

A number of authors have pointed out that while the advent of degree offerings at Ontario colleges has led to increased academic opportunities for students, this change has also created some significant challenges as the Ontario binary system of higher education evolves (Fisher, 2008; Fisher, 2009; Jones, 2004; Jurmain & Madder, 2011; Skolnik, 2005). One barrier has to do with the possibility – or lack thereof – of students to continue their education at the post-graduate level in their chosen vocational field. As David Trick (2013) has observed, better transfer arrangements from college diploma programs to college degree programs might help students transfer from college vocational programs to university programs, but “adopting this approach would in many cases require significant curriculum revisions to address differences in programs. Some college degree students will eventually want to proceed to graduate and professional programs; greater clarity upfront may be needed about whether this will be possible” (p. 4).
The challenges inherent in Ontario’s binary college/university system, and how the difficulties of creating educational pathways for students interested in transferring from one institution to another, especially from colleges to universities, is fodder for much discussion (Higher Education Strategy Associates, 2012; Lang, 2009; Skolnik, 2006; Trick, 2013), and indicates that even with the advent of college-level baccalaureates, there are still serious challenges for students who decide to attend college with an eye to either doing degree-completion at the college, or transferring into a degree-completion program at a university, once the academic requirements of the college program have been met. “A major concern for many college and institute educators is whether graduates of their baccalaureate programs will be deemed eligible by university graduate schools for admission to Master’s programs” (Skolnik, 2006, p.9).

Another concern of special interest to this study has to do with the effect on college faculty of bringing advanced applied research and applied degree offerings to the colleges, especially as this change has influenced everything from requirements for hiring, the eventual attainment – and definition of – whatever form tenure at the colleges will take, workload calculations, academic freedom and its definition as it applies to colleges, and allotment of time for various academic functions, including applied research activities. This latter element of how time is or is not allocated for applied research related work is one that is central to this study.

**Applied Research and Related Expectations**

Currently, and because of the way they were initially structured, colleges in Ontario do not set aside any time in the SWF for faculty to do research, primarily because it was assumed that in a vocationally focused institution there would be no theory-based research (which is how universities understand research) to be conducted (Dennison & Gallagher, 1986, p. 262).
Professors would instead concentrate on teaching students vocational skills so they could find work, and that was essentially it. “Most or all of the colleges were intended to concentrate on technical education” (Skolnik, 2010, p. 1). The idea that colleges in Ontario might offer university transfer credits or grant degrees was not something that was part of the original plan for Ontario colleges. The Degree Granting Act of 1983 (Government of Ontario, 1990), restricted the authority to grant degrees to only those empowered to do so by an act of the provincial legislature. “The act of the legislature which established the CAATs does not give them the authority to grant a degree of any kind… to obtain such an amendment it would be necessary to overcome some strongly engrained habits and attitudes…” (Skolnik, 1995, p. 1).

Indeed, as Skolnik (2002) pointed out in an address to an ACCATO conference in 2002, much of the controversy over whether or not colleges should be able to offer baccalaureate degrees at all came from within the college sector itself. Although speaking in this case specifically about American community colleges, the observations also apply to the situation in Ontario colleges. Skolnik noted that opponents to the idea of colleges offering baccalaureates regard the offering of a baccalaureate degree as inconsistent with the raison d'être of a community college and have used that argument to oppose it. “Part of the essence of the community college is that it does not grant a baccalaureate degree; and to do so would matter a lot, as it might greatly alter the identity of the institution” (p. 8).

The advent of the Post-secondary Education Choice and Excellence Act (Government of Ontario, 2000), and the Colleges of Applied Arts and Technology Act (Government of Ontario, 2002), changed all that, and brought the possibility to the colleges of being degree-granting institutions with the ability to conduct research - albeit applied, vocationally focused, research. Since collective bargaining determines how faculty time and working conditions are structured,
the change in the colleges following the introduction of the new Acts may well have a significant effect on the SWF for college faculty conducting applied research or teaching in degree-level programs. PEQAB (2010a) requirements also make it mandatory that faculty teaching in these programs have research experience, and terminal degrees – usually a PhD – in their area of work (pp. 24, 25). Recent research (Fisher, 2008), indicates that lack of faculty release time has been and continues to be a primary barrier to developing institutions’ potential to stimulate innovation in Canada through applied research, an observation noted by other scholars (Catalfamo, 2010; Fisher, 2009; Jurmain & Madder, 2011; Laden, 2005; Madder, 2005; Munro & Haimowitz, 2010; NSERC, 2007; Skolnik, 2002;).

Colleges have to deal with different challenges than universities when it comes to accommodating research done by faculty because there is no expectation, or accommodation of, research functions on the part of faculty in provincially negotiated Collective Agreements. Fisher points out that Madder (2005) similarly focused on the lack of funding for faculty release time as “the primary limiting factor for innovation activities at colleges” (p.1). The ACCCs National Research Advisory Committee identified significant teaching loads, lack of funding for research release time, and an unfavorable adjudication process as “…key barriers to unleashing the full potential of colleges, and recommended new funding mechanisms… for faculty release time within research funding programs for colleges” (Fisher, 2008, p. 40). Dennison and Gallagher (1986) also point out that the lack of research and scholarship as a priority in the colleges also came about, in part, because of the rate of development of the institutions through the 1970s and early 1980s “…which left precious little time and energy for the more reflective and analytical activities associated with research” (p. 263).
Although this study focuses on the college faculty experience, it is worth noting that there is the expectation that college students, especially in degree programs, will also participate in applied research led by a professor (Catalfamo, 2010), and that this expectation is a fairly new concept for Ontario. As has been pointed out, just as the professors face time constraints in their efforts to fit research time into their regular work, students face similar constraints trying to fit research into their course work (Faust Zúñiga, 2009).

Polytechnics Canada (2011) is just one organization that encourages and supports the engagement of students in applied research: “More needs to be done to make these students aware that Canadian research-intensive colleges provide first-class education and pathways to employment as well as advanced education” (para. 10). The research involving students conducted by Faust Zúñiga (2009) shows – much as does Fisher’s (2008) research on faculty - that “[The study found that] students did see participation as beneficial to them for learning, gaining real world experience, gaining communication skills, and improving their creativity. And, quite importantly, the students reported that these benefits would not have been attained in the regular classroom” (p. 13).

**College and University Relations**

The history of why Ontario colleges were denied the opportunity to offer transfer agreements and degrees has been discussed by various authors who point to the initial reluctance of the province’s univerisites to give ground in an area they considered their traditional purvue (Boggs & Trick, 2009; Dennison & Gallagher, 1986; Jones, 2004; Clark, Moran, Skolnik, & Trick, 2009; Skolnik, 2002; Skolnik & Jones, 1993;). By offering baccalaureate programs, along with developing some successful inter-college collaborative programs (Jurmain & Madder, 2011) and transfer and articulation agreements with universities, initially in other jurisdictions...
(Clark, Moran, Skolnik, & Trick, 2009), and, more recently by some colleges in Ontario establishing articulation agreements, or developing joint program offerings with provincial universities (ACCC, 2011a) Ontario colleges have found a way of making it possible for their students to continue their education along degree completion pathways, some of which may even lead to graduate degrees. “All these initiatives stand in contrast to what was once regarded as an essential quality of the colleges, that they provide only terminal education” (Skolnik, 2002, p. 8).

The Colleges of Applied Arts and Technology Act of 2002 explicitly recognizes that colleges of applied arts and technology would be able to perform applied research in support of their mandate. “This was the first time that legislation explicitly recognizes R&D as a legitimate college activity and was included at the request of colleges” (Corkery, 2002, p. 12). That this change to the Ontario colleges’ applied research role was coming, however, could be seen in the announcement of the College Research Development Fund by the Canadian Foundation for Innovation which had been established in 1997 (Wilson, 2008, p. 20). Operating grants to colleges based on program enrolments do not fund applied research, but “Operating grants can, however, be allocated as the college sees fit, including to support R&D” (Corkery, 2002, p. 12).

Since the advent of applied degrees, it has become evident that not only is there more advanced applied research to be done by faculty and students in these vocational fields, but there is now some funding available for this kind of research from various government funding agencies, and from the private sector (Clark, Moran, Skolnik, & Trick, 2009; Corkery, 2002; Wilson, 2008). The private sector in particular has long been happy to use college students, faculty and resources to conduct applied research methods in process improvement and new innovation work. "Although these grants are small compared to the amounts that most universities receive, and constitute a small amount of college revenue, they are a noteworthy new
source of revenue for the colleges” (Clark, Moran, Skolnik, & Trick, 2009, p. 153). In 2010 and 2011, Ontario colleges became increasingly able to access funding from a variety of sources including Natural Sciences and Engineering Research Council of Canada (NSERC), Social Sciences and Humanities Research Council of Canada (SSHRC), Ontario Ministry of Research and Innovation (MRI), and the Canadian Institutes of Health Research (CIHR). (ACAATO, 2004 (September), p. 20; Ontario Ministry of Economic Development and Innovation, 2011; ACCC, 2012b).

How well colleges have begun to incorporate applied research into their developing research cultures was looked at in detail in the report Innovation at Canadian Colleges and Institutions (Madder, 2005). This report provides a comprehensive overview of applied research activity in Canadian colleges, and looks at issues such as access to funding, governance of colleges and related policies, and student involvement in applied research. A review of Madder’s (2005) detailed criteria of what constitutes the elements of a novice, intermediate and mature institution makes it evident that some fall in the Novice Innovation Institution category (p. 33). Some of the characteristics of a Novice Innovation Institution indicate that ad hoc fiscal and human resource systems are developed to support innovation. These may be local agreements or pilots to establish systems to support innovation. “Fiscal systems and reporting capacity, especially those that require the carryover of funds to support multiple year research projects are developed” (p.33). According to Madder (2005), this stage is transitional and usually requires three to seven years, and this is a very unstable stage where without active support by administration, faculty and staff, formal applied research and innovation activities may cease. The time spent in this phase may be reduced by hiring an experienced dean or director of
research or through intensive professional development of those involved in the administration or development of innovation activities (pp. 33, 34).

At the other end of the development spectrum, Madder (2005) describes fully integrated innovation institutions as colleges and institutes that have integrated innovation and business support systems that provide both business development support integrated with innovation activities. “(These) activities may be regional, national and international in scope, (and) these colleges/institutes are often relatively large in nature with long-standing innovation and business development activities” (p. 35). In addition, Madder (2005) notes that these institutions house business incubators, accelerators or business parks that are supported by and provide support to the college or institute. “Companies on the campus may access research and development resources to conduct their own innovation activities or may subcontract innovation activities to the institution” (p. 35).

The period of time that passes between one end of the Madder (2005) spectrum through to the other is a time of institutional investment in research support, improved access to funding and learning about how to access this funding. Patience on the part of senior leadership within a college is essential as the institution moves along the continuum without being able to show very much from the investment of time, money and other resources in terms of solid research outcomes and benefits.

That there are barriers to achieving Integrated Innovation Institution status has been pointed out in a report by the Conference Board of Canada (2011), which notes that the potential for Ontario’s colleges to generate advanced applied research that can become an innovation lever on a grander scale is limited by factors such as:
• low awareness and understanding of colleges’ applied research services among potential clients;
• uncertainty in government about how to measure and assess the outputs and outcomes of college research; and
• colleges’ lack of resources to fund faculty research time and improve industry liaison and project management capacity. (Munro & Haimowitz, 2010, Executive Summary, p. 1)

The report goes on to say that “Strategies and resources required to address ongoing challenges will need to be identified and pursued if college applied research is to further improve innovation performance, education and training, and economic and social development” (Munro & Haimowitz, 2010, Executive Summary).

**Planning for Applied Degrees**

There appears to have been little consistency in how Ontario’s colleges have approached planning for becoming degree-granting institutions. Some institutions have moved ahead relatively quickly with the creation of a slate of degree offerings, while others have not. By way of example, my institution, for instance, Fanshawe College, is one that appears to have taken a more cautious approach to this evolutionary step. According to the College’s *Differenitiated Mission* document of 2009, the college states that by pursuing Polytechnic status, the College will be better positioned to serve the needs of lifelong learners through a broad range of programming in apprenticeship, certificate, diploma, collaborative degree and applied degree credentials, post-graduate training, and by a focus on applied learning (Governors, Fanshawe College Board of, 2009, p. 1).

Two years after that statement made it into the *Differenitiated Mission* document, the college has quietly abandoned, or perhaps postponed, this quest for Polytechnic status, possibly
because the College was already meeting the needs of its constituency through what is at the heart Colleges of Applied Arts and Technology commitment to occupational training and adult education (Clark, Moran, Skolnik, & Trick, 2009; Jones & Skolnik, 2009). The decision to postpone standing as a Polytechnic may also have been because of a perceived lack of clarity among college stakeholders such as students and their parents about what a polytechnic is, and how a polytechnic differs from a college, if indeed it does, as the term is so “…laden with such ambiguity” (Jones & Skolnik, 2009, p. 25). Although applied degrees may continue to support the original college mandate, they will only be of value if the related industries actually require the knowledge and skills developed by the students in these vocationally specific degree programs as a condition of employment. As Munro and Haimowitz (2010) have noted, some level of applied research activities have been a part of Ontario colleges’ core functions, albeit on a small scale, and these activities were often conducted as part of the curriculum and/or in partnership with small businesses. At the same time, however, there have been barriers to fully engaging the applied research potential of the colleges.

In Fisher’s (2008) pilot study for his national survey, 85 percent of respondents identified the factors that were their primary barrier to participation in applied research. “Beside the lack of release time almost half the faculty also reported lack of administrative support (49%), lack of experience (48%) and lack of training (48%) as additional barriers to participation” (pp. 40-41). Regarding incentives to participation, the majority of faculty agreed or strongly agreed that administrative support, personal interest and release time were the primary incentives for their participation in research activities at Canadian colleges. Other incentives included furthering their careers and furthering their education.
In the United Kingdom, it was reported that in the 1970s research normally accounted for 10 to 20 percent of faculty time in the polytechnic, in contrast to about 50 percent in the universities... To my knowledge, those who have urged that the CAATs award applied degrees have yet to take a position on the proportion, if any, of faculty time that should be devoted to research, let alone how to achieve such a diversion of faculty time from teaching. (Skolnik, 1995, p. 4)

A further complicating factor may be any internal resistance within the colleges to releasing a faculty member for the purposes of conducting research, as many of the best researchers could also be motivated professors, and may not be easily replaced, particularly in highly specialized programs or courses. It should also be noted that research activities in the colleges may also involve providing support for non-faculty researchers such as counseling staff and students. “Research funding programs also need to see the value of undergraduate students who are ‘the next generation of social and business innovators and entrepreneurs’” (Jurmain & Madder, 2011, p. 21).

Another concern is that if colleges continue on the road of offering applied degrees, and eventually possibly even post-graduate degrees, there is a possibility that a schism may develop in these colleges – and may, in fact, already be in the early stages of developing – between faculty holding advanced degrees, and faculty who do not. Introducing applied degrees into institutions that are traditionally teaching institutions could have as a primary disadvantage the creation of a second and third-tier faculty, with the attendant perceived stigma attached to not holding advanced degrees, because of the value placed on research and advanced academic standing (Vajoczki, Fenton, Menard, & Pollon, 2011). “…those who focus solely on teaching may be considered less worthy and less valuable to the institution, while those who do both
research and teaching may be considered more worthy and more valuable” (Vajoczki, Fenton, Menard, & Pollon, 2011, p. 6). Although the work done by Vajoczki et al. primarily addresses the concerns of university faculty, what motivates college professors and university professors to want to teach and want to do research, and how these motivations may differ, is a subject that will eventually have to be considered by the colleges. The mandate given to the Ontario colleges when they were created was to be teaching institutions, and the incentive for faculty to come to the colleges has been the opportunity to teach, not to do research. Colleges may be increasingly engaging in applied research activities, “but there is little of the pull towards research that is characteristic of full-time university faculty positions” (Trick, 2013, p. 34). Because colleges were designed to be solely teaching institutions, the ability to conduct research was not an initial motivation for people who wanted to teach there. But at universities, the ability, indeed, the requirement, to conduct research, has been identified as both a source of professional fulfillment and workload frustration (Badali, 2004). One newly tenured university professor, for instance, has described her work life as follows:

I am working harder than ever. I don’t see any end in sight. I teach more students, I have more responsibilities in terms of committees at work, I’m in the schools regularly working with student professors… and to top it off, I’m worried about the impact that doing more research will have on my personal and professional life. (Badali, 2004, p. 9)

There is little in the literature about this potential schism in the college faculty, but it is not unlikely that an argument will eventually be made that engagement in applied research will make faculty better teachers, not unlike the on-going debate in universities about whether or not there is a link between research activity and the quality of teaching. Pascarella and Terenzini (2005), for instance, have concluded that most studies actually suggest an inverse relationship
between research productivity and teaching quality as measured by student satisfaction surveys. Because there is a growing expectation on the part of parents and students for greater accountability and a more affordable and accessible undergraduate educational experience, “Colleges pose a real threat to universities because they are considered a cheaper alternative to universities while having the added value of a teaching-focused faculty” (Vajoczki, Fenton, Menard, & Pollon, 2011, p. 34). As Vajoczki et al. point out, faculty who teach but do not do engage in research are considered curriculum experts who engage in the scholarship of teaching and learning, and “while students often do not recognize the difference in title, they do recognize good teaching” (p 34). Add to this the growing reality of the financial benefits of credentialing increasingly becoming a key motivator for some students to seek higher education (Colleges Ontario, 2009a), and colleges may well be presenting a very attractive option for potential students perhaps who view vocational higher education as a route out of economic difficulties more than considering higher education as a way of bettering themselves intellectually and morally. Companies that hire successful job applicants will likely continue to want them to have qualities such as persistence, ambition, and ability to cooperate and innovate. “At a minimum, achieving a four-year university or college degree, no matter in what subject, seems to promise these traits” (Jacobs, 2004, p. 44).

The tension that is developing within the Ontario colleges about how much of the colleges’ functions and resources should be devoted to applied research and degree offerings, and all that means in terms of additional time and funding resources, and how much should remain the traditional, vocationally focused diploma offerings, is sometimes described as a consequence of “academic drift” (Jones, McCarney, & Skolnik, 2005; Neave, 1979). Although the colleges are, arguably, remaining true to their mandate of offering vocationally specific
programming, the fact that some of this programming now comes in the form of undergraduate degrees being taught by a professoriate with advanced degrees who are also responsible for engaging the students in some research experience, could be seen as an attempt by the colleges that participate in degree offerings to raise their academic status in order to attract more students at a time when there is a steady decrease in the number of direct entry students coming to the colleges. The concomitant increased emphasis on applied research as an important faculty task in addition to teaching, but without assigned time and funding, is central to the difficulty colleges are having in moving along through Madder’s (2005) typology. Based on the experiences of the former British polytechnics for instance, it has been argued that a significant problem in these institutions is lack of recognition and funding of research that does not conform to the traditional paradigms of university-level academic research, with the polytechnics complaining that the research councils did not recognize or support the kind of applied research they undertook (Pratt, 1997).

The notion of academic drift (Doern, 2008; Jones, McCarney, & Skolnik, 2005; Neave, 1979), also sometimes known as ‘academic ratcheting’ or ‘mission creep’, could be of special concern to college faculty if they were to find themselves increasingly working in institutions trying to emulate, or model, their research efforts on universities in order to increase the institutional standing, or ‘brand recognition,’ as institutions of more advanced learning than vocational schools. In an unpublished interview with me, the President of Fanshawe College, Dr. Howard Rundle, made the observation that parents who are thinking of sending their child to college or university will still likely believe that an institution offering degrees is more prestigious than one offering diplomas and certificates, and that in a time of declining enrolments
and increasing tuition fees, colleges trying to attract more students will do better if they are able to offer degrees (Rundle, 2010).

The pursuit of greater institutional prestige affects faculty in a number of ways as various incentives – including time away from teaching in the form of off-loading a course or two per semester – in order to engage in applied research activities and possibly qualify for research funding, come into play. Research in the United States on faculty work-life suggests that faculty perceptions of a striving institutional culture will be affected by their own sense of history of the institution, their own identity within their workplace, and how it will be affected by the change in the various incentives that exist both intrinsically and extrinsically (O'Meara & Bloomgarden, 2011; Neave, 1979). Comparative studies in higher education have documented the system-level restructuring in various jurisdictions (Jones, 2004).

“The 1980s and the early 1990s have been a period of dramatic higher education reform, especially in such English-speaking nations as Australia, New Zealand, and the United Kingdom. But also in certain jurisdictions of continental Europe and Southeast Asia” (p. 40). In some cases, these reforms also included the development of performance funding mechanisms (Floyd, Skolnik, & Walker, 2005; Jones, McCarney, & Skolnik, 2005; Jones G., 2004).

**Other Jurisdictions**

In Australia, the changes in academic work and expectations levied on faculty have been described as stretching the amount of work being done, rather than helping the faculty adapt to it. The preference of many universities and individual academics is to allow accumulation and accretion rather than to undertake the more difficult and threatening task of making strategic choices and re-conceptualizing what it means to be an effective and productive academic. (Coaldrake & Steadman, 1999, p. 9).
A cross-sectional study of academic self-reported workload comparing results from 1977 and 1993 for both colleges of advanced education and universities showed a slight increase from about 45 hours a week to 48. The more significant finding was that faculty in these institutions found ongoing pressures to find time to accommodate the multitude of expectations placed on them through an increased use of the summer semesters (Coaldrake & Steadman, 1999). In 1987 Australia established the unified national system (UNS) for higher education, abolishing the binary higher educational system as part of the national government’s policies to make postsecondary education a central piece of its economic policy (Doern, 2008, p. 11).

There is great variation among jurisdictions in terms of how credentials are structured, and these constantly evolving credential frameworks make it a little difficult to draw clear and direct comparisons between the Ontario experience and that of other jurisdictions. Australia, for instance, has one of the most differentiated set of credentials, with the Australian Qualifications Framework (AQF) listing seven credentials for vocationally focused programs of two years or less alone (Australian Qualifications Framework Council, 2011; Skolnik, 2012a, p. 10). These include four levels of certificates, a diploma, an advanced diploma and an associate (two-year) degree (ACCC, 2011a, p. 50).

The most common credential awarded for completion of two-year occupationally-focused programs in Ireland is the higher certificate; in New Zealand, the national diploma; and in the United Kingdom, at least until recently, it was the higher national diploma. In England, Wales and Northern Ireland, there is now also the foundation degree, which was introduced in 2001, a two-year credential that is at the same level in the UK Qualifications Framework as the higher national diploma, and is considered by some to be a UK equivalent to the North American associate degree. Foundation degrees are
vocationally oriented though, like Ontario diplomas, they include academic courses as well. (Skolnik, 2012a, p. 10)

A notably similar experience to the evolution of colleges and credential frameworks in Ontario can be found in Norway where almost 100 vocationally-oriented institutions were amalgamated into the 26 non-university state colleges that provide mainly vocationally focused education (Jones & Gopaul, 2006). The Act of Universities and Colleges of 1995 included a requirement that these state colleges should engage in research, and that responsibility for this research is neither an individual duty nor right, but the responsibility of the institution (Kyvik & Skodvin, 2003). This shifting of the responsibility for development and conduct of research projects from faculty to the institution might not necessarily sit well with faculty in Ontario colleges, but would certainly help ensure that time and other resources would be made available to the projects deemed by the institution to be appropriate. What such a system does to concerns about academic freedom in research would make an interesting study in itself.

The change that followed the amalgamation of the Norwegian vocational institutions into state colleges has had much the same ramifications for Norway’s college system as exist for Ontario’s colleges, including policy dilemmas relating to the recruitment of staff and the degree to which they should have research abilities and experience versus professional, applied experiences, and whether the research undertaken should have a vocational and regional focus, or a discipline-oriented focus (Kyvik & Skodvin, 2003). As in Ontario, Norway’s Ministry of Education did not enact any regulations pertaining to the amount of time to be devoted to teaching and research respectively when the college system was created, leaving the resolution of this problem to the individual institutions (Kyvik, 2009, p. 114). The concern – among many Norwegian colleges as for Ontario colleges - is that time for research, as a resource allocation,
will become something of a fringe benefit, and that this benefit will be available only to those professors with advanced degrees.

The 26 University Colleges in Norway are comprehensive, multi-faculty institutions responsible for regional education of primarily bachelor level education within the fields of nursing, teaching, business management, engineering and information technology, though most colleges also offer master’s degrees in some selected program areas, and a few have introduced PhD programs (Kyvik, 2009). Since 1995, the colleges have had the same academic career system as the universities with full professors, associate professors, senior lecturers and lecturers, but a substantial number of the college professors do not hold master’s degrees (Kyvik, 2009). Kyvik points out that the number of full and associate professors is much lower in the colleges than in the universities and the colleges have fewer resources available for research. In these respects the University Colleges can be regarded as the Norwegian counterpart to the former polytechnics in the United Kingdom. (p. 112).

How time is allocated for research would appear as troubling an issue for the Norwegian colleges as it is for Ontario colleges. Thinking of time as a resource to be shared out among the faculty of an institution, Kyvik and Skodvin (2003) have suggested that it can either be parcelled out as a share of an individual’s working hours, or as the allocation of periods of time during working hours when a faculty member is free to dedicate work hours to research. The difference between these two types of resource allocation is that individual research time is an indivisible resource that in principle can be allocated to all members of staff. On the other hand, research periods are a much less divisible resource. “In principle all resources for research can be distributed as a stipend or sabbatical according to competition between staff, or they can be distributed as a fixed percentage of individual working hours” (Kyvik, 2009, p. 113).
In actuality, the practices of individual Norwegian colleges vary, with some colleges allocating a larger share of the total time available in the form of time for research than do other institutions. In the majority of colleges, all academic staff members are, in principle, given time for research. “In the case of the Norwegian colleges, all faculty were expected to engage in research and workloads were adjusted accordingly. Individual faculty made individual decisions on how to fulfill this responsibility, and success became a requirement under promotion and reward structures” (Jones & Gopaul, 2006, para. 6).

In terms of the effect on teaching of the inclusion of research in the new Norwegian colleges, Jones and Gopaul (2006) point out that research involves resources, and “In the Norwegian case, the research mission of the new colleges led to a reduction in teaching loads” (para 8). In other words, research costs money, and places demands on institutional resources, especially when teaching hours have to be backfilled by other full or part-time professors as teaching professors devote some of their time to research, rather than teaching. Some resources may come from external, commercial organizations and businesses, but that support will not cover the full cost of replacing professors.

To be sure, the system in Norway, and in the other Scandinavian countries, is not without its flaws and detractors, and could well be seen as a form of academic drift. Non-university tertiary institutions frequently petition to grant what are usually referred to as professional baccalaureate degrees, yet “In both Sweden and Norway, all tertiary education courses are assumed to be of university level. This may improve formal student mobility, but it is unlikely to help academic standards” (Clark, Trick, & Van Loon, 2011, p. 167).

The Norwegian university college model would, however, seem to fit the traditional Canadian university model in that those with post-graduate degrees have research experience,
and are therefore capable of conducting their own further academic research, and should be
given research time commensurate with their degree and research experience. As Madder’s
(2005) typology indicates, a mature research college is one that includes faculty with advanced
degrees and who are capable of conducting advanced research. As Ontario colleges increasingly
hire professors with masters and PhDs, the same model of advanced credentials leading to
increased research time might well apply to them.

A study of the resistance to change by institutions of higher education in the UK suggests
that universities should adapt to entrepreneurial activities, strengthen their interaction with
industry, and recognize that competition comes from foreign universities and local colleges that
are trying to merge with universities as a means of growth and as a way to themselves develop as
research institutions (Chandler, 2010). A significant challenge identified by this research is the
pressure of time, meaning that faculty are increasingly finding it difficult to meet their
obligations in both teaching and research. The research also recognized the resistance of faculty
unions to change in the institutions (Chandler, 2010).

The Effect of the Collective Agreement

The activities of faculty on Ontario college campuses are prescribed to a large degree by
the Collective Agreement as set out by the Ontario Public Service Employees Union (Ontario
Colleges of Applied Arts and Technology, 2009). Faculty unions have been described as being
resistant to the collective bargaining directions the provincial government was taking in the late
1970s into the early 1980s. “A fact finder's report in 1984 characterized the bargaining
relationship as one of ‘conflict, intense competition, overt use of power, direct influence
attempts, aggressive and antagonistic behaviour, a high level of distrust and denial of legitimacy’
(quoted in IARC, p 21)” (Skolnik, 1988, p. 101). As Skolnik (1988) has noted, union strategy in
bargaining increased concentration on workload, or instructional assignment, as “workload was likely a far more significant issue to most faculty in the early-Eighties than salary… on the margin, most would probably have preferred a reduction of several hours of teaching to a few more percentage points of salary increase” (p. 102).

If the Ontario Public Service Employees Union (OPSEU), which represents faculty in Ontario colleges, is seen as a source of resistance to change, colleges are eventually going to have to address the issue of how to accommodate applied research in the Collective Agreement and the SWF. Not doing so will do nothing to alleviate the tension between those faculty who want to, and are qualified to, conduct applied research and expect time to be allocated for this work, and those who do not. The lack of available time for research responsibilities and other activities is a considerable source of stress for faculty for whom time pressures are such that they may become resistant to any change that will demand more of their time (Chandler, 2010).

Any tensions between faculty who engage in applied research activities, and who teach in the applied degree programs, and those faculty who do neither, are ones the colleges should consider as they try to plan for moving in the direction of offering more degrees. While it is still relatively early days for applied research at the colleges, there is much that the Ontario college system can learn from the universities’ experience. Like the universities, colleges are seeing a reduction in the number of full-time staff, and although demographic studies would indicate that there may be a reduction in class sizes over the next five to ten years, both full and part-time faculty are constrained in terms of the extra duties beyond their teaching responsibilities they can assume. Generally speaking, the province-wide Collective Agreement limits college full-time faculty to 44 hours of work per week (Ontario Colleges of Applied Arts and Technology, 2009, p. 9), including a maximum of 18 hours of instruction per week for a 36 week academic year. It
is, however, difficult for a college to assign a full 18 hours to any faculty member because the workload formula requires time to be set aside for class preparation, grading assignments, attending meetings, and other assigned activities, plus a minimum of six hours per week for out-of-class assistance to individual students and for other administrative tasks. The remaining work weeks of the calendar year are reserved for related functions, professional development activities and vacation.

Because colleges do not have master’s and doctoral students, they're not able to adopt the university practice of employing graduate students to grade papers and run tutorial groups (Clark, Moran, Skolnik, & Trick, 2009). Some thought will likely eventually have to be given to the allotment of time to faculty for conducting research, and even possibly for the hiring of research assistants, to fill the roles normally performed by graduate students in the universities. In addition, planning for, and establishing policies for, the eventuality of colleges in Ontario offering post-graduate degrees in vocational areas will go a long way toward preventing further tensions among faculty teaching in the degree programs and those in other programs.

The changes that have come to Ontario colleges related to the advent of applied degrees and applied research activities suggest that there also changes developing in terms of what it means to be a college professor. The suggestion has been made by Macfarlane (2011) that the traditional aspects of what it means to be a professor at a university, for instance, in terms of teaching, research and service to the community are rapidly disaggregating, or ‘unbundling’, as a result of the changing nature of higher education through the “massification” of national systems, the application of technology in teaching, and increasing specialization of academic roles to support a more centralised and performance-based culture (Macfarlane, 2011; Clark, Moran, Skolnik, & Trick, 2009).
The new and evolving model is one that is not entirely foreign to Ontario colleges where sitting on committees, participating in mentoring, attending workshops and other so-called para-academic activities have been an expectation as part of the official duties of a professor. There is growing usage of the term ‘para-academic’ in the institutional language of universities, and the term may also find its way into provincial colleges as it is found especially in Canadian and US institutions where it is employed to refer mainly to administrative units associated with the enhancement of learning and teaching processes, such as centres for faculty or academic development (Macfarlane, 2011, p. 62). In the university environment, academic identity and status are closely related to research and scholarly activities. As Macfarlane (2011) points out, however, the evidence indicates that it is not necessarily accurate to assume that faculty employed on academic contracts are necessarily engaged in research and publication work. While many academic staff may be engaged in broadly defined scholarly activities, such as updating their professional or propositional knowledge base via development activities, “…this is not necessarily equivalent to a narrower but more performance and quality audit-driven definition of research focusing on obtaining grants and publishing in peer-reviewed outlets” (p. 64).

This description of what it means to be a research-focused professor at a traditional university, matched against what it means to be a teaching professor at an Ontario college, lies at the heart of the difficulty of trying to establish a fully integrated, institution-wide research culture at any Ontario college. Ideas about what it means to be an applied research focused institution with an established research culture may not yet be well defined in the Ontario college cultures.
One interesting suggestion about how to introduce a research culture into the colleges can be found in a pre-budget submission to the House of Commons Standing Committee on Finance from Polytechnics Canada (2010), in which the suggestion is made that the federal government should create a pilot program that would enable foreign-trained researchers who are currently unemployed to work in Canadian colleges or polytechnics on research and commercialization activities. “Providing valuable work and entrepreneurial expertise for these newcomers would contribute to the research capacity of Canadian colleges and polytechnics while also mentoring our students” (p. 5).

While interesting, this recommendation does not seem to have had much traction because of the inherent difficulties of logistics and costs, nor does it contain any elements that address the question of how to engage current college professors in advanced applied research. How the work of these international researchers would be accommodated in the Collective Agreements is also not addressed.

The issue of whether or not a college professor’s time should be divided between teaching and applied research activities in order to foster a research culture is one that has not yet been considered in detail in Ontario colleges, but the question of how much time is allocated to teaching as opposed to conducting applied research is one that has been examined by American community colleges. Not surprisingly perhaps, research indicates that the Canadian university vs. college experience is echoed to a degree in American community colleges where community college faculty report spending more time teaching than faculty at other types of higher education institutions (Huber, 1997, p. 24). The numbers are most significant for formal classroom instruction, where community college faculty report that they spent around 15 hours a week teaching undergraduates during the fall of 1996, as compared to 10 hours a week for
faculty at baccalaureate and master’s institutions, 7.5 hours a week for faculty at doctoral institutions, and 6 hours a week for faculty at research universities (Huber, 1997, p. 24).

As a result of their demanding teaching load, community college faculty in the United States, like their Canadian counterparts, spend little time conducting original or advanced research, and only five percent report that regular research activities are expected in their position (Huber, 1997, p. 25). Again, time constraints imposed by teaching responsibilities are cited as a barrier to more research. As in Ontario, research and scholarship in America community colleges does not imply original research as much as it implies just keeping up to date in a professor’s field of expertise. There are benefits to this arrangement, especially for colleges and universities in the United States that are engaged in collaborative programs. According to Boggs and Trick (2009), collaborative programs in the US combine the benefits of the applied education provided by the colleges, and the more academic, theoretical education provided by the universities, “with the college offering courses with a strong hands-on element, using specialized laboratories and faculty with industry experience, while the university offers complementary academic instruction (p. 9)”. The writers add, however, that in some cases such as college/university collaborative programs, the distinction between the programs may have more to do with “the depth of knowledge rather than the extent to which the education is ‘applied or ‘hands-on’” (p. 9). The introduction of applied degrees into the community colleges in the United States, with the associated expected increase in research activity by faculty, has not been without its detractors. In early 2013 community colleges in Michigan were granted the legal authority to issue bachelor’s degrees, becoming the 21st state to do so, but the practice remains somewhat controversial as some four-year universities in the state argue that degree offerings by the colleges will lead to a duplication of degree programs (Fain, 2013). The degree offerings in
American community colleges, however, are primarily what is called work-force baccalaureates, and which the Ontario colleges would recognize as applied degrees. Community college professors who are hired to teach in these baccalaureates are not expected to engage in the research and publishing activities of their university peers. “Bachelor’s programs at community colleges should be limited to technical programs and tied to work force development” (p. 2).

When considering the experiences of other colleges in other jurisdictions such as Norway, the United States, and the United Kingdom, it would appear that these institutions, although perhaps initially distinct from universities, have in some cases begun to blur the distinctions between the traditional functions of colleges and universities as universities adopt greater interests in the entrepreneurial forces of knowledge-based economies, and colleges venture farther into more formal and more large-scale applied research activities, and in that way are developing expertise in the area (Jones, McCarney, & Skolnik, 2005, p. 119). As has also been pointed out by Joan Mount et al. (2005), that over time, many of these colleges have developed “…the discipline-based knowledge production form and individual performance mode that is encouraged by reward mechanisms which are based on published output, such as progress through the salary scale, promotions, and release time for research” (p. 42). The authors go on to note that these internal rewards are reinforced by those of the national basic research funding bodies, and that almost inevitably, these institutions aspired eventually to university status.

With respect to this phenomenon in Canada today, there are signs of growing overlap. The development of degree programs is not only a desired outcome, according to the data from the authors' 2003 survey, but is now occurring to a notable extent. (p. 42).

Of course, the report from the Commission on the Reform of Ontario’s Public Service – the Drummond Report – may slow this development if some of the recommendations made
regarding the halt to development of new applied degree programs in the colleges are followed, as well as those suggesting that emphasis be placed on a more comprehensive credit transfer system between colleges and universities (Drummond, 2012, Recommendations 7-6, 7-7).

**The Post-secondary Quality Assessment Board**

A necessary component to the continued development of the applied degree concept into Ontario colleges has been the oversight body, the Post-secondary Education Quality Assessment Board (PEQAB). Created as part of the Post-secondary Education Choice and Excellence Act of 2000 (Jones, 2004; MTCU, 2000), this Board produced extremely detailed and demanding standards for such programs (Post-secondary Education Quality Assessment Board, 2009), and those colleges that wish to develop applied degree programs must submit the proposed program for review to the Board. In addition, the PEQAB establishes committees of review consisting almost entirely of university professors (Skolnik, 2005 pg. 59), who conduct site visits and write a report about the suitability and capability of the college to deliver a baccalaureate applied degree. The resistance, if not outright antagonism, toward the college degrees among university administrators is a known phenomenon, and has been explored extensively by Skolnik (2011, 2003) who observes that in Ontario, “there has been open conflict over territory between the universities and community colleges since the colleges obtained the authority to award baccalaureate degrees” (2011 pg. 353). In a letter dated February 2, 2009, to the Honourable John Millroy, then Minister of Training, Colleges and Universities, Frank Iacobucci, then Chair of the Higher Education Quality Council of Ontario (HEQCO), notes the observation made by Jones and Skolnik (2009) that “Some colleges believe that [the applied] degree programs are unduly narrow and that PEQAB requirements prevent them from being broadened” (Iacobucci, 2009, p. 5).
The sometimes strained relationship between Ontario’s colleges and universities in terms of what kind of post-secondary education the colleges would be able to deliver, especially following the Post-secondary Education Choice and Excellence Act of 2000 that enabled the colleges to offer baccalaureate degrees in applied areas of study, is a theme that shows up repeatedly in the literature, and to which there seems to have been no lasting resolution.

Summary

This review provides a selected sample of the literature related to the changing roles and responsibilities of faculty in Ontario colleges as these institutions evolve their educational mandate following the advent of the Post-secondary Education Choice and Excellence Act (Government of Ontario, 2000) and the Colleges of Applied Arts and Technology Act of 2002 (Government of Ontario, 2002). The review also considers the nature of a research culture at colleges, and how that culture compares to other post-secondary educational institutions in other jurisdictions, in order to set the context for examining the development of a research culture, and the degree to which faculty time for applied research activities is considered a part of that culture, in the four case study colleges selected for this study. The literature indicates a need for greater exploration of the overall significances of introducing an applied research culture in the Ontario colleges, with special emphasis on how that culture will affect faculty in terms of support for applied research activities.

In the course of finding ways of accommodating degree completion pathways for their students, whether through articulation agreements with universities, or the creation of locally offered applied degree programs, it appears that Ontario colleges have not given much consideration to the need to bring faculty along in terms of offering them opportunities to learn
how to conduct their own applied research, direct their students in applied research pursuits, or indeed conduct, as faculty, their own applied research.

The literature also supports the notion that applied degree programs in the colleges are helping students find degree completion pathways, although moving from a college applied degree to a university graduate program within the province still presents considerable difficulties for students. These difficulties are traced back to a history of a somewhat adversarial relationship between the provincial colleges and universities, a history supported by several articles and reports. This relationship is exemplified by lack of cooperation in terms of seeking solutions to the problems of credit transfer, articulation agreements, degree completion and access to graduate programs, and the initial resistance of the universities to the creating of applied degrees in the colleges. The literature predicts that as long as this un-cooperative relationship endures, colleges will continue along the path of developing more applied degree programs, including possibly advocating for the replacement of the advanced diploma in favour a three-year undergraduate degree at one end, and applied graduate degrees at the other, much as jurisdictions such as Norway have done.

While Ontario college professors have always conducted some applied research in the sense of helping industry improve processes and developing innovation initiatives, often using these projects as student assignments, it would appear that increased university articulation agreements for degree completion, the establishment of college applied degrees, and a growing interest on the part of the private sector to take advantage of the colleges growing applied research expertise to enhance or develop product concepts that might eventually be brought to market, have encouraged Ontario colleges to more fully engage the applied research process. The maturing of college applied research experience has meant that these research projects have had
to become more formalized and structured, requiring, for instance, the establishment of colleges’
research ethics boards to meet the funding requirements of the Tri-Council agencies that tie
funding eligibility to adherence to existing research ethics protocols which, in turn, means more
rigour in applied research methodology.

Regarding the matter of a lack of clearly defined policy approaches to the allotment of
assigned applied research time for faculty; a lack that is reflected in the SWF as agreed to in the
provincial Collective Agreement for college faculty, the literature suggests a developing divide
between the colleges, which are increasingly seeking their own differentiated missions (Jones &
Skolnik, 2009) with differing ideas about the future of the separate colleges, and the Collective
Agreement that applies to all the province’s 24 colleges. This is a central issue needing
resolution as this process of the evolving Ontario colleges’ mandate continues.

While the literature describes the lack of time for applied research as a central barrier to
the development of a fully integrated research culture in Ontario colleges, it stops short of
considering why that is, and how to create the necessary policy framework to accommodate this
need for time to conduct applied research. What the literature also does not discuss in any great
detail is the day-to-day reality of the challenges facing faculty who have to work within the SWF
in order to find time to learn about research methods, find time to conduct the research, and
adapt to the emergent nature of a research culture at colleges.
Chapter 3: Research Design and Methodology.

Chapters 1 and 2 of this thesis introduced the context of the study and discussed the relevant literature and theory. This chapter discusses the methodology used in this study and looks at the research design, participant selection, data collection and analysis, and reviews any limitations and ethical considerations.

Research Purpose

The purpose of this study was to ascertain how Ontario colleges at various stages of applied research and innovation sophistication are accommodating faculty need for time to engage in applied research activities. While the literature as explored in the previous chapter refers to the lack of time for applied research as a central barrier to the development of a fully integrated research culture in Ontario colleges, it stops short of considering why that is, and what policy changes might help colleges overcome that barrier.

Primary Research Questions

Research Question One (RQ1) explored the extent to which the study participants believed the Ontario colleges and the Ministry of Training, Colleges and Universities planned for the creation of a research culture at the colleges following the Post-secondary Education Choice and Excellence Act of 2000, and the Colleges of Applied Arts and Technology Act of 2002, and if in that planning they anticipated meeting the requirements needed to ensure that faculty who teach in the diploma and applied degree programs have the necessary time, funding, and other resources needed to conduct applied research. RQ1 also looked at what supports were available to faculty to earn the necessary advanced academic qualifications to teach in the applied degree programs where some research activities are an expectation, and whether
publications, grants, and research awards would influence the hiring practices of colleges in terms of bringing new faculty on board.

Research Question Two (RQ2) considered what the study participants believed Ontario colleges have done since the advent of the Post-secondary Education Choice and Excellence Act of 2000, and the CAAT Act of 2002, to incorporate applied research activities into their institutions by finding time for faculty to conduct research, either by the funding of faculty time for research or through some other mechanism such as the SWF. RQ2 also considered to what extent faculty participation in research activities influence the hiring and promotion of faculty.

Finally, Research Question Three (RQ3) looked at what differences are observed in a “novice” vs. an “integrated” research college as described by Madder’s (2005) typology (Appendix H) in terms of how time is allocated to faculty to engage in research activities. RQ3 also examined how faculty efforts to support student engagement in research activities are expected and rewarded by the colleges, what support systems are in place to assist faculty in research activities, including assistance with grant applications and applications to research ethics boards, and also if mentoring of faculty who express an interest in engaging the research process is available. The research questions and interview questions matrix is provided below.

**Research Questions/ Interview Questions Matrix**

**RQ1:** In anticipation of applied degree-level program offerings and the advent of applied research functions in the colleges, what thought was given to providing faculty time to conduct applied research?

**RQ2:** Since the advent of applied degree program offerings and of applied research functions in the colleges, what have colleges done in terms of developing policies related to providing faculty the time to conduct applied research?
RQ3: What differences, if any, are observed in ‘novice vs. ‘integrated’ colleges (as described by Madder (2005) (Appendix H) in terms of how time is allocated to faculty to conduct applied research activities?

Table 1. Research Questions

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Interview Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RQ1</strong>: In anticipation of applied degree-level program offerings in the colleges, what thought was given to providing faculty time to conduct applied research?</td>
<td><strong>Question 1</strong>: Was the need for faculty time to conduct applied research considered in the planning for applied baccalaureate programs?</td>
</tr>
<tr>
<td></td>
<td><strong>Question 2</strong>: Was it anticipated that faculty teaching in applied baccalaureate programs should be supported with time and funding to earn the necessary academic qualifications to teach in these programs?</td>
</tr>
<tr>
<td></td>
<td><strong>Question 3</strong>: Was it expected that publications, grants and research awards would influence personnel decisions in terms of hiring, promotion and tenure?</td>
</tr>
<tr>
<td></td>
<td><strong>Question 4</strong>: Was it expected that the colleges would require faculty teaching in applied baccalaureate programs to both teach and conduct research?</td>
</tr>
<tr>
<td><strong>RQ2</strong>: Since the advent of applied degree program offerings and of applied research functions in the colleges, what have colleges done in terms of developing policies related to providing faculty the time to conduct applied research?</td>
<td><strong>Question 1</strong>: How is faculty release time for applied research funded at the local (college) level?</td>
</tr>
<tr>
<td></td>
<td><strong>Question 2</strong>: What is the academic standing of researchers at your college, and how does this affect their careers as faculty?</td>
</tr>
<tr>
<td></td>
<td><strong>Question 3</strong>: To what extent does participation in applied research activities influence hiring and promotion?</td>
</tr>
</tbody>
</table>
|                                                                                   | **Question 4**: Is time for applied research
RQ3: What differences, if any, are observed in ‘novice vs. ‘integrated’ colleges (as described by Madder (Appendix H) in terms of how time is allocated to research activities?

| Question 1: To what extent is faculty support of student engagement in applied research activities expected and/or rewarded? |
| Question 2: What support systems are in place to assist faculty in conducting applied research, including grant application, proposal writing, Research Ethics Boards, data storage? |
| Question 3: What systems are in place to mentor and assist faculty wanting to engage in applied research activities? |
| Question 4: Is applied research a strategic focus for your college? |

**Rationale**

Colleges in Ontario are engaged in applied research activities (ACAATO, 2004 (September); Government of Ontario, 2002; Kerr, McCloy, & Liu, 2010; MTCU, 2010), in order to achieve the kind of institutional and academic maturity that will allow them to attract students who hope to engage in applied research while at the college, and possibly seek degree pathway completion either within the college or through degree completion at other institutions. These colleges also hope to engage the commercial sectors of the economy in applied research activities that will bring some research funding to the colleges, and they hope to attract professors with advanced academic credentials and, if not necessarily proven ability to conduct applied research, then at least a familiarity with the applied research concept. To help achieve these goals the colleges will likely need to develop policy frameworks that will allow the professoriate the necessary time to write proposals, apply for funding, conduct the applied
research and report the findings without having to worry about how to accommodate time for research in their professional and personal lives.

This study compared four Ontario colleges that have achieved a level of research capacity from novice through to a fully integrated research culture as determined by the Madder (2005) typology. This first comprehensive analysis of college applied research and innovation capacity was completed in 2005 by Jim Madder, currently President of Confederation College in Thunder Bay, while he was Executive Vice-President, Academic, at Red Deer College, Alberta. The study provides a careful consideration of the 157 publicly funded colleges and institutes in Canada engaging in applied research, including discussions of access to funding, college governance and institutional policies, human and financial resources and student involvement. The Madder (2005) typology provides a well-developed tool against which to measure the progress of colleges in terms of their applied research capacity.

**Research Design**

A qualitative multi-site case study of four Ontario colleges that have achieved some level of applied research capacity from novice to integrated research culture as determined by the Madder (2005) typology, was used to collect data for this study. This approach was chosen because a case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context... it is a phenomenon of some sort occurring in a bounded context” (Merriam, 1998, p. 27), meaning that what is being studied is something around which there are clearly defined boundaries such as an individual, a program, a group, a community or a specific policy. As this study deals with the experience of individuals who either were or are influential to varying degrees in the way applied research and research cultures have been introduced to and fostered within Ontario colleges, the multi-site case study design seemed most appropriate. As
Creswell (2009) has noted, case studies are an approach to research in which the researcher “explores in depth a program, event, activity or process, or one or more individuals. Case studies are bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time” (p. 13).

Structured interview questions that allowed for semi-structured follow-up questions were used in order to collect information from each respondent. The semi-structured format was used to identify broad issues so that each respondent could contribute a more personal and somewhat different perspective on the questions, depending on his or her experience regarding the topic being studied (Newman & Benz, 1998, p. 67).

The research questions focused on a particular policy issue within an already developed— if not entirely integrated—college system in the province of Ontario, and the case study approach is therefore appropriate as the object of the study—faculty time for applied research—is clearly defined and bounded within that system. There is also a heuristic component to this particular case study in that the study sought to illuminate the reader’s understanding of what is being studied. Previously unknown variables were thus allowed to emerge from the study that will lead to insights into how “things get to be the way they are” (Merriam, 1998, p. 30). In addition, the theoretical framework of this study also encompassed the grounded theory research method (Glaser & Strauss, 1967, 1995, 1999), that, rather than beginning with a hypothesis, collects data, then scans the data for themes or codes, which are then grouped into similar concepts and categories in order to clarify them and make them workable from the point of view of analysis. This analysis can, according to Glaser and Strauss, be used to create a theory or theoretical framework with recommendations related to a study, in this case of the changing role of college faculty and the availability of time for applied research activities.
The qualitative data were collected in two phases from four selected Ontario colleges. Having worked in a variety of capacities, first as a professor, then curriculum consultant and research consultant, in the college system for the past 15 years during the time the colleges were experiencing the effects of the Post-secondary Education Choice and Excellence Act, and the CAAT Act, and having been involved in the development of applied degree programs and helping develop research policies in my own college, I have considerable familiarity with the introduction and evolution of applied degrees and applied research activities in the colleges. This familiarity allowed me to select an initial set of seven colleges to represent the continuum spectrum of Madder’s (2005) typology. A review of applied research activity as indicated on the web sites of the seven colleges, and informal conversations with my counterparts at some of these colleges, allowed me to select four colleges to be used in the study. Using the Madder (2005) typology, the study compared these four Ontario colleges at various stages of applied research development with a focus on to what extent these institutions had developed and implemented processes for allocating time to faculty to engage in degree-level applied research.

Phase 1 consisted of a document analysis of the four selected colleges using a selection criteria checklist (Appendix E) developed from a description of the stages of innovation for colleges and institutions as designed by Madder (2005) (Appendix H). This analysis was of documents publicly available on the colleges’ web sites. The analysis helped to determine where on the continuum of the Madder (2005) typology the selected colleges would fall based on the elements of the selection criteria in Appendix E. The findings of the document analysis formed the basis for placing the four colleges included in this study on the Madder (2005) typology continuum.
Phase 2 of the study consisted of interviews with two senior staff members in the relevant provincial government departments who were closely connected with the planning phases leading up to the Post-secondary Education Choice and Excellence Act of 2000, and the Colleges of Applied Arts and Technology Act of 2002. These interviews were followed by interviews with five senior leaders who were present in the college system when the Post-secondary Education Choice and Excellence Act of 2000, and the CAAT Act of 2002 were introduced, and who could speak to the experience of the college leaders at the time. Lastly, interviews were conducted with four senior leaders, one from each of the four case study colleges, who could speak to current conditions regarding time for faculty research at their institutions. All 11 senior leaders who were invited to participate agreed to do so. Seven of the participants answered the questions related to the planning for the introduction of applied research to the colleges in Ontario, four spoke to the questions exploring the current progress of applied research in the four colleges. The participants were sent the questions in advance of the interview, and the primary investigator employed follow-up questions as necessary in order to fully explore a topic. Three of the interviews were conducted in person, eight were conducted by telephone. The interviews were digitally recorded and transcribed by the researcher. A search for themes following each Research Question in the transcripts revealed a number of observations shared by the interview participants. The repetition of key words or phrases five times or more in a transcript provided a frequency threshold and qualified a topic for inclusion as a potential finding.

Site Selection and Web Content Analysis

Four colleges were selected from the broadly identified institutional research and innovation characteristics as established by Madder (2005), and supported and refined by Fisher (2008) and Munro and Haimowitz (2010), using the Site Selection Criteria (Appendix E) as
developed from the description of the stages of innovation for colleges and institutes as designed by Madder (2005) (Appendix H). The selected colleges represent each of the following categories as initially established by Madder (2005): No Formal Innovation Structures, Novice, Established, and Fully Integrated. As Munro and Haimowitz (2010) point out, however, given the increasing developmental differences within some of Madder’s (2005) four stages among Ontario colleges, the differences among the colleges can be further refined; this refining also helps accommodate the continuing evolution along the Madder (2005) typology of Ontario colleges. For the purposes of this study the “Novice” category was therefore further distinguished into “Early Novice” and “Late Novice” to reflect the differences – although relatively minor differences – between the “early” characteristics described by Madder (2005) as, for example, formal innovation activities having been initiated recently; initial research and development policies are developed and ad hoc fiscal and human resource systems are developed to support innovation. “Late Novice” characteristics include the hiring of an experienced director of research or, through intensive professional development, of those involved in the administration or performance of innovation activities. In addition, formal innovation activities in “Late Novice” institutions are usually project based, and conducted in collaboration with regional community/industry partners. These projects are often supported by a combination of industry community support (cash or “in kind”) and government funding (Appendix H).

The “Established” category was similarly distinguished into “Early Established” and “Late Established,” the “Early Established” category including, for example, comprehensive research and development policies and practices being put in place; human resource policies that are stable, and research and innovation positions that move from part time or released time to full time longer term positions with less turn-over of related personnel. In such an institution the
director of research reports to a senior vice-president. The “Late Established” category is signified by facilities and equipment that are established but may require renewal, and evidence that academic and service divisions support innovation activities as part of the college/institute mandate and mission (Appendix H).

The “Integrated” category was not further distinguished as it is understood to mean “fully” integrated in terms of applied research and innovation activities as described by Madder’s (2005) typology, and include colleges that are often relatively large in nature with long standing innovation and business development activities, and with activities that include business incubators, accelerators or business parks supported by, and providing support to, the college. In this model companies on the campus may access research and development resources to conduct their own innovation activities, or may sub-contract innovation activities to the institution (Appendix H).

The category of “No Formal Innovation Structures” which is part of Madder’s (2005) original 2005 typology was excluded from the selection criteria because, as Madder (2005) notes, most Canadian colleges/institutes were formed “…with an initial mandate that supported applied research and development activities” (p. 35), and a search of the Ontario Strategic Mandate Agreement Proposals submitted to the MTCU in 2012 showed that all the colleges in Ontario currently engage in applied research activities to varying degrees (Higher Education Quality Council of Ontario, 2012), including St. Clair College which, although it has not, as of this writing, submitted a Strategic Mandate Proposal to the MTCU, indicates applied research activities on its web site (St. Clair College, 2009).

The classification created by Madder (2005), and further enhanced by Fisher, and Munro and Haimowitz, can help ensure that college and government planning about what is required to
further enhance the colleges’ applied research capabilities is guided by a clear sense of where the colleges are in terms of their evolution as research institutions, and what is needed to help them move through the continuum to fully integrated applied research and innovation institutions, and beyond.

The Madder (2005) typology – or continuum - suggests a progression in the development of research and innovation capacity in colleges toward increasingly established governance structures. This progression requires concomitant increases in, and commitments to, more significant human and financial resource allocations, specifically in the areas of applied research and innovation activities.

Central to Madder’s (2005) report, and a key contribution of his research, is the typology that outlines the characteristics of the four generic stages of innovation at colleges, as listed below.

1. No formal innovation policies and structures.
2. Novice innovation institutions.
3. Established innovation institutions.
4. Fully integrated innovation institutions. (Appendix H).

Some of the elements identified by Madder (2005) that indicate where colleges can be located on this continuum include:

- significance of innovation in the current institution vision, mission and strategic direction;
- historical mandate and history of innovation at the institution;
- availability and development of the human, physical and fiscal resources to support innovation;
- credentials offered and models of academic delivery used, e.g. project-based delivery, work placements;
- nature of relationships with the public and private sectors;
- a focus on the local and regional economy. (Madder, 2005, p. 32). (Appendix H)

Using the Madder (2005) typology and applying it to the information made available by Ontario colleges on their websites about their applied research and innovation capacities, it was possible to identify four colleges that span the typology categories, and to concentrate data collection on these representative institutions. Studies that have built on Madder’s (2005) work indicate that colleges are increasingly engaging in research and innovation activities, and are structuring themselves accordingly (ACCC, 2010; Fisher, 2008; Fisher, 2009; Jurmain & Madder, 2011; Munro & Haimowitz, 2010; NSERC, 2007). These institutions can consequently be placed on the continuum of Madder’s (2005) typology. The ACCC (2010) contends that “The typology continues to be relevant and is a foundational piece for the development of a college applied research process framework that highlights the key elements institutions require to provide effective applied research services for industry and business partners” (p. 4).

Speaking specifically about Ontario colleges, Munro and Haimowitz (2010), note that while Ontario colleges have accelerated their applied research activities and new funding programs have emerged, many of the findings and recommendations contained in Madder’s 2005 landmark report still apply in the Ontario context.

Munro and Haimowitz (2010) further point out that for those 19 (Ontario) colleges for which sufficient information was available to make a reasonable assessment, the following distribution emerged:
10 colleges exhibited the characteristics of early to middle phase *Novice Innovation Colleges*;

5 exhibited the characteristics of late phase *Novice Innovation Colleges*;

3 exhibited the characteristics of early to mid-phase *Established Innovation Colleges*; and

1 exhibited the characteristics of a late phase *Established Innovation College*. (p.38)

Because studies that have built on Madder’s (2005) work indicate that colleges are increasingly engaging in research and innovation activities, and are structuring themselves accordingly (ACCC, 2010; Fisher, 2008; Fisher, 2009; Jurmain & Madder, 2011; Munro & Haimowitz, 2010; NSERC, 2007), the Madder (2005) typology, (Appendix H), and work that has refined that typology such as Fisher (2009) and Munro and Haimowitz (2010), formed the foundation for the selection criteria checklist (Appendix E) used to place the four selected case study colleges - College 1 (C1), College 2 (C2), College 3 (C3), and College 4 (C4) - on the continuum of Madder’s (2005) typology. The colleges were selected to represent each of the following categories as established by Madder (2005) and refined by Munro and Haimowitz (2010) and applied by the authors to 19 of the 24 Ontario colleges in their research. It should be noted, however, that there is some fluidity in college progression through the categories, and that the boundaries between categories are not rigid. One college, for instance, (C1) falls into the early novice category, but has one applied research project with an international reach, which is a criterion that would place the institution in the Late Established to Integrated category, hence the college would be considered an Early to Late stage novice institution. The selected colleges are:

C1. a college that exhibits the characteristics of an early to late novice college,

C2. a college that exhibits the characteristics of a late novice to early established college,

C3. a college that exhibits the characteristics of a late established to integrated college,
C4. a college that exhibits the characteristics of a fully integrated innovation college. (For a detailed list of the attributes associated with each of these categories, please see Appendix H)

While there is considerable variation in the amount of detail colleges make available on their web sites in terms of information related to their policies and procedures, and some of that information is made more accessible by some than by others, overall, Ontario colleges appear willing to share information about their research activities and degree offerings – where applicable - although none of the four colleges have made their applied research functions and capabilities a main feature of their institutional web site home page. This may be recognition, perhaps, that the opportunity to engage in applied research activities is still not seen as a key attraction for potential students. The one area where there is some discrepancy in form and content is in the web section dealing with application to an institution’s research ethics board. Some colleges have the information regarding the application procedures readily available with clear indication of the information required, while other institutions have applications that are difficult to locate – one institution in particular having placed the research ethics board’s application inside another policy document – and with unclear information about application requirements. Since this project was initiated, however, there have been considerable inroads made to simplify this research ethics board application process through the creation of a common application form to which most of the provinces colleges now subscribe (Colleges Ontario Heads of Applied Research, 2012).

All four colleges selected for this study engage in applied research to some degree, and consequently all will have had to develop some level of research culture, and will have had to find some method by which to insert research activity into their traditionally teaching-focused institutions. The categories appearing in the Notes section for each institution are based on the
categories established by Madder (2005) to evaluate an institution’s research and innovation engagement (pp. 33-35), and Appendix H.
## College Selection Criteria

### Table 2. College Selection Criteria - College 1

**College 1 (C1): Early to late Novice**

Date reviewed: Dec. 20/11

<table>
<thead>
<tr>
<th>Comments</th>
<th>Novice</th>
<th>Established</th>
<th>Integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of AR office</td>
<td>Yes</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Presence of Dean/Chair of AR</td>
<td>Manager, with limited research responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of full-time staff in AR office</td>
<td>One</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Has faculty involved in AR</td>
<td>Numbers not available, but would be few, based on the number of projects.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Has students involved in AR</td>
<td>Primarily course based</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Has initiated research projects</td>
<td>One is identified</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Has completed research projects</td>
<td>In process</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Presence of REB</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible for Tri-council funding</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP policies in place</td>
<td>Yes, but limited in scope</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Business/corporate partners</td>
<td>Number not available</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Regional/national/international</td>
<td>Regional/international</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Offers applied degrees</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NOTES: This college does not offer its own degrees in applied fields of study, but does have degree completion arrangements with a university. There are no plans in place for offering degrees at the college. The research area focuses on a few projects, and does involve students, primarily as part of course curriculum, with no current plans to increase the number of applied research projects.

Web site information: Information about research and innovation is not featured prominently on the college’s website home page.

Research Office: There is a Manager as opposed to Chair or Dean of Applied Research with limited personnel and research support.

Faculty and student involvement: Involvement in applied research and innovation projects are primarily course curriculum based.

Research Policies: There is a research policy which primarily governs the activities of the REB. It is interesting to note that the policy excludes research activities by students as part of a class project where students conduct research involving classmates for the purposes of learning about the research process as the Tri-council Policy Statement (TCPS2) (2010) has a process whereby student research can be approved by a delegate of the institutional REB (articles 6.1, 6.12).

Tri-council funding: In order to qualify for Tri-council funding, a college must have an REB that follows the TCPS2 policy statement, which this college does.

IP Policy: Statements regarding intellectual property rights are either specific to curriculum or to university partnerships, and do not specifically address issues of ownership arising from research activities.

Business and corporate partnerships: A few partnerships for applied research and innovation projects are in place, primarily on a local level. One project of an environmental nature has an
international reach with interest in the project being expressed by the governments of other countries.

**Table 3. College Selection Criteria - College 2**

**College 2 (C2): Late Novice to early Established**

Date reviewed: Dec. 20/11

<table>
<thead>
<tr>
<th>Comments</th>
<th>Novice</th>
<th>Established</th>
<th>Integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early</td>
<td>Late</td>
<td>Early</td>
</tr>
<tr>
<td>Presence of AR office</td>
<td>Yes</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Presence of Dean/Chair of AR</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of full-time staff in AR office</td>
<td>Three support staff</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Has faculty involved in AR</td>
<td>Yes, several projects in curriculum and several independent</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Has students involved in AR</td>
<td>Primarily course based</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Has initiated research projects</td>
<td>A few with local community members, number not available</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Has completed research projects</td>
<td>Limited</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Presence of REB</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible for Tri-council funding</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP policies in place</td>
<td>Yes</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Business/corporate partners</td>
<td>3 identified partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional/national/international</td>
<td>Regional</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Offers applied degrees</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**NOTES:** This college offers a few degree programs, and also has articulation and transfer agreements with a number of universities, most of them outside the province. The research office is very small, and the reach is local.

**Web page information:** Information about research and innovation is not featured on the college’s web home page. The link to information about applied research requires two additional click-through links. Once at the research site, the information is more readily available, with sidebar links to the essential information. Some of the links from research office site are out of date.

**Research Office:** There is a Dean of Applied Research, but the office has very limited personnel and research support. The office primarily provides information about government funding opportunities, and opportunities for partnering with local businesses.

**Faculty and student involvement:** Involvement in applied research and innovation projects are primarily through faculty projects conducted with local businesses and organizations. Identified student research projects are few and primarily course curriculum based. There is an internal granting mechanism for interested faculty.

**Research Policies:** There are no links from the research office web site to related research policies, but they can be found through some diligent searching of the college web site. The research policy and the intellectual property policy are not, however, in the same policy category.

**Tri-council funding:** In order to qualify for Tri-council funding, a college must have an REB that follows the TCPS2 (2010) policy statement, which this college does.

**Business and corporate partnerships:** Three identified partnerships for applied research and innovation projects are in place on a local level.
### Table 4. College Selection Criteria - College 3

**College 3 (C3): Early/Late Phase Established Innovation**

Date reviewed: Dec. 20/11

<table>
<thead>
<tr>
<th></th>
<th>Comments</th>
<th>Novice</th>
<th>Novice</th>
<th>Established</th>
<th>Established</th>
<th>Integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Early</td>
<td>Late</td>
<td>Early</td>
<td>Late</td>
<td></td>
</tr>
<tr>
<td>Presence of AR office</td>
<td>Yes, with extensive support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Presence of Dean/Chair of AR</td>
<td>Yes, with several identified</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>responsibilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of full-time staff in</td>
<td>Yes, offering extensive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>AR office</td>
<td>support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has faculty involved in AR</td>
<td>Yes, both for student projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>and individual initiatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has students involved in AR</td>
<td>Yes, in curriculum and across</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>the institution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has initiated research projects</td>
<td>Yes, numbers not available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Has completed research projects</td>
<td>Yes, numbers not available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Presence of REB</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible for Tri-council</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>funding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP policies in place</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Business/corporate partners</td>
<td>Yes, numbers not available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>due to broken link</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional/national/international</td>
<td>Regional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Offers applied degrees</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:** This college has a research advisory council in place to assist the research office, offers the faculty opportunities for independent research and has systems in place to help students...
explore the possibilities of developing their research projects for market. The college offers numerous degree programs.

**Web page information:** A link to the research office is located on the college’s web home page.

**Research Office:** There is a Dean of Applied Research with extensive identified responsibilities for establishing policies and procedures, reaching out to funding agencies, overseeing internal and external reporting requirements, performing institutional research audit functions and marketing the research abilities of the college. The office is well resourced in terms of staff.

**Faculty and student involvement:** The college encourages individual faculty research projects, and student involvement in applied research and innovation projects can be course curriculum based, but can also be school led or across the institution. Some students act as research assistants in paid positions to faculty-led research projects, and the college provides a variety of resources to students interested in engaging in applied research projects. Some student research may lead to academic credit. There is an internal granting mechanism for interested faculty.

**Research Policies:** are based on and subject to TCPS2 (2010), and the college has an established intellectual property policy that includes copyrightable intellectual property and patentable intellectual property policies.

**Tri-council funding:** In order to qualify for Tri-council funding, the college must have an REB that follows the TCPS2 (2010) policy statement, which this college does.

**Business and corporate partnerships:** The college offers a full slate of research, innovation and development services to business partners including prototypes and proof-of-concept projects. Numbers not available due to a broken web link. Two business partners were identified though information on other research pages.
### Table 5. College Selection Criteria - College 4

**College 4 (C4): Late Phase Established/Integrated**

Date reviewed: Dec. 20/11

<table>
<thead>
<tr>
<th>Comments</th>
<th>Novice</th>
<th>Established</th>
<th>Integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early</td>
<td>Late</td>
<td>Early</td>
</tr>
<tr>
<td>Presence of AR office</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of Dean/Chair of AR</td>
<td>Yes, Dean, Director of Research and Research Manager</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Presence of full-time staff in AR office</td>
<td>Yes, number unknown</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Has faculty involved in AR</td>
<td>Yes, individual institutional and student projects are listed</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Has students involved in AR</td>
<td>Yes, one policy refers to course-based REB approval</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Has initiated research projects</td>
<td>Six ongoing projects listed on website</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Has completed research projects</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of REB</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible for Tri-council funding</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP policies in place</td>
<td>Yes, policies are comprehensive</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Business/corporate partners</td>
<td>Yes, there are eight projects with partners listed</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Regional/national/international</td>
<td>Primarily Regional / national</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Offers applied degrees</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NOTES: Applied research is integrated into the curriculum at this college, which also offers numerous degree programs. The research projects have primarily a regional, with some national, reach. The college currently has four Centres of Excellence.

Web page information: Information about research and innovation is not featured prominently on the college’s web site home page. A two-page click-through is required to locate the information about research page.

Research Office: There is a Dean of Research, a Director and a Manager of Research with extensive responsibilities for working with faculty and students to initiate and conduct research, and develop collaborative industry partnerships. The office is supported by personnel and research support. The office offers assistance with proposal writing and submissions and has a research team to offer research assistance.

Faculty and student involvement: Involvement in applied research and innovation projects are course curriculum based, with research by faculty and institution-wide projects featured on the web site.

Research Policies: Research policies are well developed and include an intellectual property policy, and research integrity policy, among others.

Tri-council funding: In order to qualify for Tri-council funding, the college must have an REB that follows the TCPS2 (2010) policy statement, which this college does. A process has been established that will allow specific courses with student-led studies that involve research with human beings to receive designated REB approval.

IP Policy: The college has a clearly defined intellectual property policy.
Business and corporate partnerships: Several partnerships for applied research and innovation projects are in place, primarily with a regional reach, with some national reach as well.

Interview Respondents Selection

After the initial selection of four representative colleges, based on web content analysis, as described above, interviews were conducted with a purposive selection of individuals who were in senior leadership positions in the Ontario college system [Appendix D], and in the Ontario government at the time of the introduction of the Postsecondary Education Choice and Excellence Act of 2000 (Government of Ontario, 2000) and the Colleges of Applied Arts and Technology Act of 2002 (Government of Ontario, 2002), as well as with senior leaders currently in the study colleges. These leaders are typically instrumental in making or implementing the strategic decisions in the participating colleges that determine how the colleges in question are responding to the changes contained in the Acts that enabled the colleges to offer applied degrees and conduct applied research respectively.

In total, eleven interviews (n=11) were conducted, each of a duration of approximately 45 minutes. Three of the interviews were conducted in person, eight were conducted by telephone. Seven of the participants answered questions related to the planning for the introduction of applied research to the colleges in Ontario, four spoke to the questions exploring the current progress of applied research and research cultures in the colleges. The study participants were either in senior leadership positions in the Ontario college system or in the Ontario government at the time of the introduction of the Post-secondary Education Choice and Excellence Act of 2000, and the CAAT Act of 2002. All the interviews were digitally recorded and transcribed by the researcher. The individuals who were approached to participate in this study were promised
that every effort would be made to not report information that could readily identify the respondents, their colleges or other institutions. For that reason the colleges and the government levels and departments involved have not been identified.

In his Ph.D. dissertation *A Conceptual Framework for Research at Canadian Colleges*, Fisher (2009b) points to the lack of faculty release time as “…the single greatest barrier to building a sustainable research culture at Canadian colleges” (p. 20). The questions Fisher poses as avenues for further exploration of issues related to time for research, research personnel, and research governance in general (Appendix A) served, in part, as a guide to the development of the interview questions used in this study.

**Data Collection**

Phase 1: Document analysis.

Using a combination of the Madder (2005) typology, recommendations for refinement of that typology made by Munro and Haimowitz (2010), and Fisher (2009), the established selection criteria [Appendix E] was used to conduct a web content analysis to establish four Ontario colleges that fell on the Madder (2005) typology in the range from Novice through to Integrated, as described in the Site Selection section above.

The college selection criteria checklist (Appendix E) was used to express the findings of the web content document analysis of the selected four colleges in order to place them on the Madder (2005) typology continuum. Because there is some cross-over from one category to another in terms of the colleges’ evolution along the continuum, the “Novice” and “Established” categories were further refined into “Early and Late novice” and “Early and Late Established.” The “Integrated” category was not further refined but is understood to mean “Fully” integrated in terms of applied research and innovation activities as described by Madder’s (2005) typology.
The placement of a college on the selection criteria checklist (Appendix E) was determined by whether or not a college showed evidence on its web site of the elements required to meet a certain category as defined by Madder’s (2005) description of the stages of innovation for colleges and institutions, including the applied research and innovation activities engaged in by the college (Appendix H). Where it was unclear from the web content exactly how advanced a college might be on the typology, the “Notes” section of the selection criteria checklist was used to further discuss content found on each institution’s web page, and how that content influenced the placement of the college on the Madder (2005) typology continuum.

The final list of four colleges was anonymized using alphanumeric codes (C1, C2, C3, C4).

Phase 2: Interviews.

Interviews were conducted with a purposive selection of individuals who were in senior leadership positions in the Ontario Colleges of Applied Arts system [Appendix D], and in the Ontario government at the time of the introduction of the Post-secondary Education Choice and Excellence Act of 2000 (Government of Ontario, 2000) and the Colleges of Applied Arts and Technology Act of 2002 (Government of Ontario, 2002), as well as with senior leaders currently in the study colleges who are instrumental in making or implementing the strategic decisions in the participating colleges that determine how the colleges in question are responding to the change contained in the Acts that allowed the colleges to offer applied degrees and engage in applied research. Because the legislative ability of Ontario colleges to offer degrees is a relatively recent one, many of the colleges are still in the process of deciding what policy changes they will need to make as they determine how far down the road of being degree granting institutions they're going to go in terms of the number of degree offerings they're going
to create, if indeed they’re going to create any. The interviews were transcribed by the researcher and examined for thematic similarities as part of an audit trail.

**Data Analysis**

Data for the study emerged from an analysis of web content documents and policies gathered from the participating colleges in order to place the colleges on the Madder (2005) continuum, and from the analysis of the data produced by the interview questions (Appendix D).

The first Research Question (RQ1) seeks to establish what planning, if any, was done to allow faculty time to conduct applied research when the colleges began to implement the requirements as set out on the Post-secondary Choice and Excellence Act and the CAAT Act, and also to explore how established the research and innovation culture is in the colleges included in this study. On the continuum of Madder’s (2005) typology an institution with a fully engaged research culture, for instance, would have a research and innovation culture firmly established and entrenched in the organization, with a record of successful innovation projects.

These institutions house business incubators, accelerators or business parks that are supported by and provide support to the college or institute. Companies on the campus may access research and development resources to conduct their own innovation activities or may subcontract innovation activities to the institution. (Madder, 2005, p. 35).

The second Research Question (RQ2) undertakes to have a look at how well the colleges in question have developed supporting policies needed to entrench research and innovation, and in that sense begin to move along the Madder (2005) typology’s continuum into institutions where research and innovation activities are no longer thought of as new and novel activities, but a part of the day-to-day activity. Such an institution of higher education is a place where fiscal,
human resource, reporting and academic policies reflect a growing tradition of research and innovation, including providing time for faculty to engage in applied research projects, on their own or with students as part of the curriculum, and where the research activities span regional, national and international activities with all the necessary funding supports from both the private and public sectors.

The third Research Question (RQ3) seeks to determine where the participating colleges fall on the Madder (2005) typology continuum with a focus on how time for research activities has been incorporated, if at all. In his typology Madder (2005) points out that an established innovation institution would have "human resource policies [that] are stable and innovation positions move from part-time or release time to full-time longer-term positions. There is less turnover of innovation related personnel" (p. 34). In other words, time for research and innovation activities has been allocated by the college as a matter of institutional policy, as opposed to the *ad hoc* human resource systems that prevail in the novice institution as defined by Madder (2005).

Following the semi-structured interviews, interview data were analyzed to identify themes. The themes were identified from the interview transcripts by coding each interview respondent and related institution and reviewing the associated transcripts in order to manually examine each question and answer sequence for emergent themes. The emergent themes were then compared to search for commonalities that established the findings.

The questions asked of each participant were the same and came from of a list of 12 questions (Appendix D) based in part on Fisher's (2009) suggestions for further research related to research governance in Canadian colleges (Appendix A). The researcher allowed for follow-up questions as the responses warranted. Findings that emerged in the interviews were
highlighted and examined for significance in terms of their bearing on questions related to the initial preparedness and planning, if any, of each college to assist faculty in making the transition to an institution with an engaged applied research culture, and what ongoing policy preparations, training and resources either have been or are being developed in terms of making time available for applied research activities. It was anticipated that the findings that emerged would show how the participating colleges decided how they should manage accommodating the need for time by faculty conducting applied research. The results of this examination may also suggest strategies for those colleges who wish to move along the Madder (2005) typology continuum and develop the capacity for applied research as mature, fully integrated research institutions.

The findings were then compared to the literature to identify inconsistencies and gaps. The data may also lend themselves to recommendations for further inquiry into this area.

**Methodological Assumptions**

Some of the interview data were based on recall. Since participants had nothing to gain or lose through this process it is reasonable to assume that they reported information as accurately as they recalled it, recognizing that memory may not be totally precise since the researcher will be asking some study participants to think back 10 years.

**Limitations**

Since this is a case study of four Ontario colleges, the findings may not provide the depth of analysis of the colleges one might wish. They will, however, provide a lens through which to observe the existing arrangements for time for research within the representative colleges so the results ought to be informative and valuable nonetheless.

There may also be some limitations arising from the analysis of the data collected, in that the findings were produced from a small number of colleges and participants in the study,
although the pool of senior leaders at the government level was limited to begin with. It is hoped, however, that the experiences and observations of the senior leaders who participated in this study will lead to a broader understanding and appreciation of the burgeoning applied research culture at Ontario colleges, and the changing role of college faculty as they seek to engage the applied research process at a deeper, more academic and comprehensive level.

**Ethical Considerations**

This dissertation is undertaken as part of the requirement for the degree of Ph.D. in the Department of Leadership, Higher and Adult Education at the Ontario Institute for Studies in Education at the University of Toronto. The selected colleges and interview participants are not identified. The interview participants and colleges are anonymized using an alpha-numeric code.

All participants are anonymous, and their institutions are referred to as College 1 (C1), College 2 (C2), College 3 (C3), and College 4 (C4) in order to leave the participating colleges anonymous. Senior leadership participants and the representatives at the senior level of the Ontario Ministry of Education will be referred to by alpha-numeric designators, and not by their names, i.e.: (SL1), (SL2) and so on. In order to make every effort to keep study participants anonymous, no division will be made in the alpha numeric designators for the college senior leaders and the government senior leaders.

A letter of informed consent (Appendix B, C) was obtained from the participants, and ethics approval from the research ethics boards of the respective institutions was granted.

The risk to the participants was not above minimal risk as defined by TCPS2 (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, 1998) in that the risk will be no greater than the participants would incur in their daily professional work.
All participant selection was compliant with Freedom of Information and Protection of Privacy Act (FIPPA) and ethics requirements. Participation in the interview was voluntary and neither participation nor non-participation will affect the participants’ employment now or in the future.

- The interviews were digitally audio-taped with participants’ consent; if they did want it audiotaped, notes were taken during the interview.
- Participants’ responses were not judged at any time.
- Participants were free to not answer any question(s) that they did not wish to answer and could withdraw from the study at any time by simply asking to be removed. All information recorded by me at that point would be eliminated and not included in the study findings. There are no foreseeable psychological or physical risks associated with participation in this study.
- If they wished, participants would have an opportunity to review the interview transcript.
- Although there is no direct benefit to the subjects for participating in the study, their participation increased our understanding of the focus of this study.
- All data collected was kept confidential and secure, encrypted consistent with the requirements of the University of Toronto and on a secure server, and only I and my thesis supervisor had access to any data collected.
- All data is to be completely destroyed five years after completion of this study.

Summary

The purpose of this study was to explore how the role of Ontario college faculty has evolved since the advent of the Post-secondary Education Choice and Excellence Act (Government of Ontario, 2000) and the Colleges of Applied Arts and Technology Act of 2002,
(Government of Ontario, 2002) and to consider the extent to which the initial decision to create a research culture at the colleges included making time available to the professoriate to engage in applied research activities. The study also considered how Ontario colleges at various stages of applied research and innovation sophistication are accommodating faculty need for time to engage in applied research. The study looked at what some of the differences were among the four participating colleges in terms of what constitutes research and innovation sophistication according to the continuum of the Madder (2005) typology.

Chapter Three also described the research design for this study, including methodology, site and participant selection, data collection and analysis, limitations and ethical considerations. It is hoped that this study will encourage an increased awareness of how Ontario colleges are evolving their respective research cultures, and how the colleges can respond to the developing trends in college-level applied research activities, including a consideration of how to best engage both faculty and students in those activities.
Chapter 4: Study Results and Analysis

Study Results and Analysis

This chapter presents the findings that I identified from the interviews with the 11 senior leaders from the four colleges selected for this study, and from the relevant provincial government sectors. The interviews were digitally recorded and transcribed by the researcher. Because of the small number of interview subjects the transcribed interviews were then manually searched for findings.

The conclusions presented by the data will be discussed in greater detail in Chapter 5 in relation to the literature review and in terms of any new findings, as will recommendations for the application of the research findings, suggestions for further research, and a summary.

The individuals who were asked to participate in this study were promised that every effort would be made to not report information that could readily identify the respondents, their colleges or other institutions. For this reason the colleges and the government levels and departments involved have not been identified but coded as Senior Leaders (SL#), while the colleges are coded (C1, C2, C3, C4). This is a qualitative study, and as the purpose of qualitative research is, in part, to seek deeper understanding of a problem or issue, the primary investigator allowed the findings to emerge naturally from the data and to speak for themselves, rather than attempting to prove or disprove a hypothesis.

In the following analysis the letters and numbers in parenthesis represent the respondent who provided the quoted material, i.e. (SL#).

Research Questions

The following set of research questions was presented to two senior staff members from the relevant provincial government sector, who were closely connected with the planning phases
of the evolution of the colleges leading up to the Post-secondary Education Choice and Excellence Act of 2000, and the Colleges of Applied Arts and Technology Act of 2002. These interviews were followed by interviews with five senior leaders who were present in the college system when the Acts were introduced, and who could speak to the experience of the college leaders at the time. Lastly, interviews were conducted with four senior leaders, one from each of the four case study colleges, who could speak to current conditions in terms of the state of applied research in the colleges, including time for faculty to engage in applied research activities at their institutions.

Responses to the interview questions adhere to the following order:

- **RQ1:** Government senior leaders (SL1, SL2). *In anticipation of degree-level program offerings and the advent of applied research functions in the colleges, what thought was given to providing faculty time to conduct applied research?*

- **RQ1:** College senior leaders prior to or during the advent of the Post-secondary Education Choice and Excellence Act (2000) and the CAAT Act (2002) (SL3 – SL7). *In anticipation of degree-level program offerings and the advent of applied research functions in the colleges, what thought was given to providing faculty time to conduct applied research?*

- **RQ2:** Current senior leaders in the four selected colleges (SL8 – SL11). *Since the advent of degree program offerings and applied research functions in the colleges, what have colleges done in terms of developing policies related to providing faculty the time to conduct applied research?*

- **RQ3:** Current senior leaders in the four selected colleges (SL8 – SL11). *What differences, if any, are observed in ‘novice vs. ‘integrated’ colleges (as described by...*
Madder (Appendix H) in terms of how time is allocated to faculty to conduct research activities?

Presentation of Data

The following section presents the data from the structured interviews with senior leaders in the relevant provincial government sectors and the four selected colleges. This section is followed by the presentation of data from the semi-structured interviews.

The first set of interviews were conducted with two senior staff members from the relevant provincial government sector who were closely connected with the planning phases of the evolution of the colleges leading up to the Post-secondary Education Choice and Excellence Act of 2000, and the Colleges of Applied Arts and Technology Act of 2002. The interview participants are identified as SL1, SL2.

RQ1: In anticipation of degree-level program offerings and the advent of applied research functions in the colleges, what thought was given to providing faculty time to conduct applied research?

Question 1: Was the need for college faculty time to conduct applied research considered in the planning for applied baccalaureate programs?

The consensus between the two senior staff members was that very little thought was given to the need for college faculty to have time to engage in college level applied research activities during the planning stages for applied baccalaureates programs.

I don't think the applied degrees in the colleges carried with them the notion that instructors in colleges would conduct original research, the idea was that they would basically be high-level purveyors of information that was already part of the central core of knowledge provided by others. (SL1)
One respondent noted that initially the idea of having the colleges offer applied baccalaureates was going to be tested as a pilot project with a few colleges before expanding the concept to the entire system because it was felt that it would take two or three years for the concept to take root. The question of faculty time for research was seen as essentially a management issue for the participating institutions, possibly with faculty somehow taking a lead in encouraging college management to come up with policies for accommodating time, but how faculty were supposed to drive this requirement was not considered.

So my guess is that the only way they could design the programs was for the faculty to almost take a lead. Now, were they given time? I can't really answer that. But these were entrepreneurs and visionaries that wanted these degrees, so they would have had the business community involved, they would have had the regulatory body, if there was one, involved or the trade, or the professions involved, and I know that a couple of [the colleges] in the province actually had buildings built because of the move in that direction. (SL2)

**Question 2:** Was it anticipated that faculty teaching in applied baccalaureate programs should be supported with time and funding to earn the necessary academic qualifications to teach in these programs?

As one respondent noted, it was very difficult for the first colleges to meet the requirements to get permission to offer the applied degrees, and in some cases the colleges had to pair up with universities to get these degrees.

In fact the first time out when we first offered the opportunity many of the colleges didn't qualify, they had to go back and fix it… Now things are different because people have been getting the qualifications necessary to teach in the college degree programs. (SL2)
But the issue “was not thought of as a specific policy matter” (SL2). The second respondent, agreed, adding, “I don't know whether it was anticipated [that faculty would be supported with time and funding to earn advanced academic degrees to teach in the applied degree programs] regarding the initial public policy,” but whenever there was an application – and initially there were two applications – there was a capacity building paragraph regarding developing faculty qualifications built in so that faculty could upgrade their skills and degrees. “I would make an inference that because this was organizational development and the two colleges were trying to develop themselves in order to offer students applied degrees [and] inferentially I would assume that the college was prepared to pay for that” (SL1). This respondent goes on to point out that if an institution were genuinely interested in developing and upgrading its faculty, it would seem irresponsible to ask them to pay for it out of their own pocket, “that doesn't make sense” (SL1).

**Question 3: Was it expected that publications, grants and research awards would influence personnel decisions in terms of hiring, promotion and tenure?**

The response to the question of whether or not research-related academic achievements would influence personnel decisions elicited a telling response from one respondent who pointed out that “teaching in an applied degree program does not mean that you have to be an active researcher” (SL1), which may have been the prevailing perception at the time, but contradicts the requirements of PEQAB as they are currently formulated (Post-secondary Education Quality Assessment Board, 2010a). The respondent did note, however, that anticipating these kinds of personnel issues would have given policymakers at the time a considerable amount of credit for anticipating something they perhaps should have, but didn’t.
Promotion deals with issues of grid and that has to do with collective bargaining… On the recruiting side, as the institution aspires to offer more and more applied degrees you probably want to recruit people who are already doing applied research. (SL1)

The question also engendered some observations about the connections between agencies that issues money for grants, and the collective bargaining process.

There's no question that the colleges are being taken seriously by the people who grant money. The question these agencies still ask is how can we engage the colleges... The bargaining process sometimes prevents us from getting things done and pulling in part-time people does not help matters when they backfill teaching hours. (SL2)

But the same respondent also goes on to say that when the colleges were created, there were no concerns about these sorts of issues. “We just kept going and people didn't bother you if you wanted to work” (SL2). The relationship between the collective bargaining process, the SWF and funding for research and research related activities was a theme that would be repeated by other respondents later in the interviews.

**Question 4:** *Was it expected that the colleges would require faculty teaching in applied baccalaureate programs to both teach and conduct research?*

There were some discrepancies in the responses to this question from the two interview respondents in that one reiterated that college faculty do not need to be active researchers to be a professor in an applied degree program.

If it is the colleges’ aspiration to have the faculty do some applied research in concert with business and industry and you have some faculty who are capable of generating revenue, that could be distinct, or should be distinct, from the applied degree. (SL1)
For the purposes of recruitment, this respondent would have preferred to separate the teaching from the research function, both in terms of classroom activity and recruitment efforts.

The second respondent, however, observed that it was initially thought that the degrees would be offered primarily through teaching as opposed to teaching and research. “But you clearly can't teach without doing some research, so there will be colleges that will [attempt to develop] the flexibility to do both” (SL2). Yet the respondent also recognized that colleges are not going to find many professors with master's degrees in strictly vocationally focused programs such as motive power, so if a job asks for a master’s degree to teach in such a program, “what colleges should really be doing is going to companies and asking who have you got here who will teach part-time at the college; that's how you get the people with the best experience to work with the students” (SL2). This is, of course, a model that has been used extensively in most other college programs, from local certificates to graduate certificates, but not likely one that would be particularly suited to the more academically demanding and rigorous applied degree programs.

**RQ1:** *In anticipation of degree-level program offerings and the advent of applied research functions in the colleges, what thought was given to providing faculty time to conduct applied research?*

Interviews for this portion of the data collection were conducted with five senior leaders who were present in the college system when the Post-secondary Education Choice and Excellence Act (2000), and the CAAT Act (2002) Acts were introduced, and who could speak to the experience of the college leaders at the time. These interviewees are identified as SL3 – SL7.  

**Question 1:** *Was the need for faculty time to conduct applied research considered in the planning for applied baccalaureate programs?*
The consensus in answering this question was yes, only up to a point. There was clearly an awareness among senior college leaders at the time that if faculty were to engage in applied research, they were going to need time to do the work, but exactly how that time was going to be accommodated was not clear. There was an understanding that the college research model, whatever form it would ultimately take, was not initially going to resemble the university model where faculty are generally given a balanced amount of time for both research and teaching activities.

It was assumed that a lot of the research projects would be integrated right into the curriculum and so one has time to do the preparation with curriculum that might be adequate to cover that. But we weren't blind to the fact that there might need to be some time, but it wasn't a quantitative planned thing, and when I look at how it evolved it has been kind of on a case-by-case, as needed basis. (SL3)

There was, however, agreement among the respondents that time for research – what was often referred to as time above and beyond the regular faculty responsibilities – was considered on an *ad hoc* basis, and was accommodated fairly readily only where external granting agencies were involved.

The real challenge of course was if we had attempted to plan it in there was no source of money for it so it would have had to come at the expense of something else. In looking back I would have to say it has worked surprisingly well given the lack of a really definitive plan around that. (SL3)

Where programs are dependent on accrediting bodies to meet the needs of industry and professions, such as nursing, the issue of time for faculty to conduct research is a little more
urgent as the program has to be able to demonstrate that program faculty are similar in skills and qualification and program structure as the university counterparts.

As far as our own applied degrees go I would say it was obviously a consideration in the sense that not only did it look better [if time were available to faculty for research] in order to attract top level faculty, it would be difficult to get really good PhD's and tell them that basically this is simply teaching with no research. (SL4)

Again, however, the consensus was also that, while the question of providing research time to faculty may have been considered, budgetary planning for it in terms of release time was not central to the conversation. “I think it [was considered] case-by-case, and we worked around each degree [in terms of how time and funding would be allocated]” (SL4).

The fact that time for research might have to be found through the SWF process was recognized by one senior leader who described the issue as being discussed with some regularity at senior management meetings where the decision was ultimately made to meet time requirements for research as best as possible through complimentary time on the SWF, or through the instrument of giving the faculty course release time, if the project was of sufficient importance.

At the time when we did applied degrees, a couple of people were already doing research and already had time to do that, so it was not something that was brand-new, but we did talk about it and tried to think through how we were going to do that. We knew that people's needs were different, but I'm not sure if that has changed since then. But what the colleges are doing now is not something I discussed with anyone. (SL6)

Where a college was already engaged in nascent applied research activities in its diploma programs, and was anticipating the advent of the applied degrees, the recognition that time would
be needed by faculty was already in place and efforts were already underway to find sources of
funding and time on the SWF for these activities when the applied degrees were made available
to the college system.

They did, in fact, have faculty who were given time to engage in applied research… I
think that was always an expectation, both from the diploma and the degree perspective,
that where applied research was relevant to a program that faculty would need time.

(SL7)

**Question 2:** *Was it anticipated that faculty teaching in applied baccalaureate programs should
be supported with time and funding to earn the necessary academic qualifications to teach in
these programs?*

The positive responses to this question were quite consistent in the expression of support
for the concept of assisting faculty with both time and money in earning the academic credentials
necessary for teaching in the applied degree programs, although the motivation for doing so may
not have been entirely altruistic as PEQAB (2010a) requires faculty teaching in the applied
baccalaureates to hold a degree one step above the degree in which they teach. Still, the result
was that money for faculty upgrading was found when it became clear that an institution was
about to get permission to offer an applied degree or, as in the case of one institution, when the
permission to offer the degree was initially denied because the college had been under the
impression that it would be given permission to offer the degree first, and then find the qualified
faculty to teach in the program.

We were more than a little annoyed when one [applied degree program] was rejected
because we didn't actually have people and we were trying to argue which is the chicken
and which is the egg? So do we hire people, or influence people to upgrade and get
degrees and then you don't approve the program? (SL3)

The observation by this particular senior leader also speaks to the underlying lack of
planning for the introduction of the applied degrees into the college system. But in the case of
this particular institution, it was the college’s nursing program that got the senior leaders
thinking about the need for time and money for research well ahead of the arrival of the applied
degree programs.

The agreement [with the local university] was that they would accept all our nursing
faculty on condition that those that didn't have a graduate degree would proceed toward
one, and so we were, of course really encouraging that. And so we provided and budgeted
the money for that, and in effect just carried that on into the applied degree. (SL3)

In addition, this college had career development for employees as a strategic direction,
which made it a little easier for management to allocate more money to that goal, and encourage
faculty to take advantage of it. “Because of the chicken and egg issue we’re encouraging it for
anyone who wants to do it, even in areas where there isn't an applied degree because eventually
there may be” (SL3).

Although the desire to support faculty seeking advanced academic credentials appears to
have been genuine among the senior leader respondents, there was also some concern expressed
by one respondent that a large-scale, institution-wide statement of support for a program to help
faculty achieve advanced degrees might be seen as unfair by those faculty who were not either
able to, or interested in, teaching in the applied degree programs.

We didn't want to have a policy that was blatant for a number of reasons, one being that
there would obviously be increased costs because there would be less teaching, but
secondly it would be upsetting to the other faculty who were not in a degree program or who were not interested in research. (SL4)

The concern was that some faculty might feel that having to conduct applied research projects would be an unfair addition to their regular teaching workload, and that those faculty who achieved higher academic standings and who taught in the degree programs would have the applied research components rolled into their regular SWF. This would mean that “the union, of course, would be keeping a close eye on these things too in terms of workload… so we had to be very careful” (SL4). As for how much a college would be willing to pay towards helping faculty earn advanced degrees was not clear at the time. If, for example, “a professor had already been there 25 years and hadn't bothered to do a master’s degree, I would think not, because they had not demonstrated scholarship” (SL4). Depending on the age and academic track record of an individual, the support might or might not have been made available, which meant that where there was no faculty in a college qualified to teach a needed course in an applied degree program, the institution would have to hire from outside to fill the slot.

This sentiment that institutional support for the attainment of advanced degrees was not initially intended for everybody is echoed by another respondent who pointed out that the support was there, “but not for everybody” (SL5).

We didn't want to have a university model where everybody was expected to do research; rather we felt we needed that capacity within each of the programs, and both through training and through hiring we intended to bring up that capacity for us. (SL5)

But the reality of the PEQAB requirements for the qualifications of professors teaching in the applied baccalaureates made it a necessity that some faculty in particular were given upgrading opportunities.
We did fund a couple of people to get degrees. I know of a couple of instances in [name of program] where we were funding a couple of people because we needed people at that level to teach in those degree programs. It wasn't so necessary in some of the other programs because people already had the degrees, or we were hiring people with degrees, and not everybody had to have them, so it depended on the situation. (SL6)

This approach to upgrading faculty as needed was experienced by other institutions where the support for the upgrading was made available, not as a blanket policy but on a case-by-case basis. If a faculty member was a perfect candidate to teach in an applied baccalaureate program because of his or her achievement in the vocational field, but didn’t have the needed credentials, then that faculty would be encouraged and supported, “By and large, you had to make quite a case to prove why people can teach in these degree programs without an advanced academic credential [but with the expectation of earning one]” (SL4).

Because not all college faculty were interested in conducting applied research in general, and for the applied degrees in particular, the money and opportunities made available for upgrading were not always equally appreciated by faculty.

We had money available, but we couldn't get people interested. In some cases, people were very eager to become involved in research and in teaching in the applied degree programs, and they wanted to get themselves prepared. In other cases, they were dragged kicking and screaming into participating. (SL6)

That some of the colleges did not feel entirely prepared when the opportunity to develop applied degree programs, and to engage in applied research activities, were made available is a theme that was reflected by the responses to this question. The lack of formal policies to deal
with whose academic credentials would be recognized, for instance, was noted by one respondent who commented that the colleges had perhaps never really considered that,

> Once you get into... degree granting you really need to have faculty who are qualified at least one level above, just as you would want a bachelor’s degree for an applied advanced diploma, and an advanced diploma to teach in diploma. So I don't think that they had thought about that or planned for it at all. (SL7)

> Once the institution saw what the required qualifications were, the leadership did put in place tuition reimbursement plans and a policy that enabled faculty to pursue advanced degrees. But, as one respondent noted, until the requirements for required degree credentialling to teach in the applied degree programs were known, “everybody was kind of fumbling around in the dark... Some colleges anticipated that there would be credential issues, and other colleges didn't” (SL7).

**Question 3:** Was it expected that publications, grants and research awards would influence personnel decisions in terms of hiring and promotion and tenure?

Where a demonstrated ability to earn research grants and other rewards, and a demonstrated track record of being published in academic journals are seen as being necessary for professors to achieve academic success in universities, this was not a serious consideration for the senior leadership in the early days of the advent of applied degrees in the colleges used in this study. “Absolutely there was no top-down movement in that direction. Our focus [was] still on applied learning and having faculty who have done what they're going to teach” (SL3). At best, publications and grants might have been considered in the hiring of new faculty for the applied degree programs if there was a close tie in the qualifications and abilities of two candidates.
All things being equal, it's like when you're playing basketball and one guy is 5 foot 10 and the other guy 6 foot four and they can both do exactly the same thing, you probably take a guy who is 6 foot four, but I don't think you set out to deliberately skew that, I think it goes again case-by-case. (SL4)

The ability to write research papers was not seen as nearly as important as the ability to teach. Achievements of any kind never did influence the opportunities for promotion for college faculty as step increases are governed by the Collective Agreement and are based on seniority and not merit (Ontario Colleges of Applied Arts and Technology, 2009).

While earning grants and being published may not have been official determinants in hiring new faculty, an observation made by the respondents to this question, colleges were looking for people who excelled as teachers, primarily because there was a recognition that there simply wasn’t time for college professors to conduct research projects on their own, at least not on college time.

College teachers teach such a heavy workload compared to university professors [that] there is not a lot of time to be heavily into research. [That work is done] during summers and weekends, [with] the odd paper here and there; it's not research as I would understand at the universities. (SL4)

This very clear distinction between college and university research modalities was noted by the respondents who pointed out that although it was thought desirable to get grants for applied research activities, the efforts that went into earning those grants were collective, by a program or department area, rather than by individual professors. It was also observed that just as faculty promotion was not affected by the amount of research activity, neither was there any
concept of the ability to achieve some sort of tenure through excellence in research or teaching as there is no concept of tenure in the Ontario college system (SL6).

I think you have to realize that the colleges looked at research differently than universities do. The colleges wanted to ensure that the qualifications and the research capability and whatever, that they needed for the programs [were there], but it wasn't going to be as important as it is in universities – the publish or perish philosophy and all that – that mentality did not come with degrees into the colleges. The whole issue of research and preparedness of faculty was so that the students would have a better learning experience, and the students would have the ability to have faculty that understood research, and the students would have the ability to participate in the research. So it's much more based on what's best for students than I would say the universities are. (SL6)

If the colleges did pay attention to a potential professor’s academic track record in terms of official, public recognition of his or her work, it was more in the form of having a record of exhibits and demonstrations of successful applied work.

You know, has the person exhibited, have they won any prizes for their hard work or for their animation etc. We certainly requested that as part of the backup for applicants, that they include that in their résumé, but I would say that we did not make it a requirement because our attitude was that faculty who wanted to engage in applied research would be eligible to do so, but that there was no requirement that faculty do it. In other words, we did not want to become like the university where you have to publish or do research at the cost of teaching, when in fact some people [in the colleges] prefer to teach. (SL7)

The theme that the applied research activity was felt to belong in curriculum so that it would directly benefit the students, and not just the professor or the institution, was also
supported by the responses to this question. That is not to say that applied research initiatives by individual professors was discouraged, “Some students, in [name of degree program], for instance, had a professor who managed to get a grant to get his students to engage in research for the summer, so I think it could've been engaged in by both students and faculty” (SL6), but the focus had to be on student involvement and benefits.

**Question 4:** Was it expected that the colleges would require faculty teaching in applied baccalaureate programs to both teach and conduct research?

This question was designed to explore in a little more detail the relationship between teaching and applied research requirements in the colleges as the applied degrees first became part of the program offerings. The responses varied considerably, with one respondent suggesting that it was generally assumed that that there would be some element of both; that especially for the professors teaching in the core areas of the applied degrees there would be a fairly clear expectation of applied research activities (SL3), while another stated that the answer was a flat out no.

[Research activity] would be an added bonus… but I don't think there would be a demand that they do, or that they would be evaluated on their research. [Faculty] were evaluated more on their teaching and/or the services to the community and institution. (SL4)

Again, the suggestion was that research activities at the college level should be more of a collective activity and asset for the institution, rather than an individual activity and asset. But because the applied degrees were still so new, and because how existing college faculty would fit into these degree offerings was not entirely clear, it was felt that existing faculty should not be forced to pursue something that was different from what they signed on for when they started teaching at the colleges. Before the advent of the applied degrees, college faculty had likely
signed on for the teaching opportunities at the institution, and not for the applied research opportunities, which had, by and large, still not been clearly identified as such in the years before the effects of the Post-secondary Choice and Excellence Act of 2000.

For some senior leaders, the issue of whether or not faculty teaching in the applied degree programs would be required to both teach and do research had not really been considered as the degrees were being introduced in the years following the Act.

I don't think we thought about that actually. I mean that I think that in a couple of cases that happened where people had an interest, and so in their time off in the summer they would do something - they would hire the students and they would do something. That was really their own interest-driven research; it wasn't really related to the program. We didn't release them to do that… But there was no institution-wide policy that governed how individual faculty members would find the time and resources to do their own research; there really wasn't enough of it to have an institution wide policy. (SL6)

The result was that those faculty who expressed an interest in engaging in applied research activities were given time in the form of such mechanisms as course-release time, and that these arrangements would be arrived at on a case-by-case basis, through negotiations between the faculty member and management, “the same way they would negotiate the rest of their SWF” (SL6).

The move to adding research activities to the core faculty activities of teaching was perhaps seen more as an enabling activity than as an actual requirement. Faculty could engage in applied research if they showed the initiative to ask, and perhaps if they could show that the experience might ultimately be of benefit to the students, but to the extent that they were going to do applied research they were generally expected to focus on their teaching, and, if there were
sufficient funding to support some release time, they might have opportunities to conduct some research as well.

Our expectation would have been that research in the curriculum would have to have been related to what the faculty was doing and what their expertise was, and to the extent that students could be a part of, or gain from it, that would have been expected. We would not have been likely to give a person release time to do research that had nothing to do with what they were teaching to students. (SL7)

(RQ)2: Since the advent of degree program offerings and applied research functions in the colleges, what have colleges done in terms of developing policies related to providing faculty the time to conduct applied research?

Interviews for this question were conducted with four senior leaders, one from each of the four case study colleges, who could speak to current conditions in terms of the state of applied research, including time for faculty to engage in applied research activities, at their institutions. These interviewees are identified as SL8 – SL11.

Interview questions:

Question 1: How is faculty release time for applied research funded at the local (college) level?

Compared to the university model, there are relatively few funding opportunities for applied research faculty release time available to Ontario colleges. In addition to an NSERC (2011) grant, grants and subsidies are primarily accessed through corporate and commercial partnerships. How Ontario colleges are funding applied research activities and release time, now and in the future, is a question that is of concern to senior leaders currently working in the provincial colleges.
That's a good question, because truly it isn't funded. First of all, MTCU does not fund us for doing research so the only way that we are going to be able to – that faculty can get involved in long-term, and in a sustainable way, with applied research - is to build applied research into the curriculum. So for our degrees we have capstone projects or applied research projects that are part of the curriculum and so what the faculty work with related to curriculum for applied research [is] built into the cost of the program. [Name of college] has had some really good success with NSERC grants so we have put aside – it's [amount of money] – for the in-kind contributions that are associated with the NSERC grants, and we also fund through our operational expenses [through] a research department. (SL10)

The answer for the colleges in the study lies in finding funding through grants and subsidies attached to particular research projects. The primary mission as identified by this group of senior leaders is still teaching and learning, but in the case of the applied degrees, that mission now includes teaching in applied degrees, and that means finding ways of supporting the research activities, which is primarily done through working on industry-related projects in the context of the degree program. In order to facilitate that process, Offices of Research of varying sizes have been established. These offices have supports in place to help engage industry in college level applied research, proposal writing and help with navigating the complexities of writing research protocols for the research ethics boards of the various institutions.

Without release time for applied research specifically funded through the traditional funding formula, some colleges have established small amounts of seed funding allocated internally for faculty interested if engaging in some preliminary, exploratory applied research activities.
And that goes from there to more formal proposals to external organizations whether it's CCI, whether it's through SSHRC or NSERC or something else for bigger grants, which may provide a semester or two of release time, or elements of release, so that [faculty] can engage in research, which is related to a specific project. But within the structure of how the system works [funding for] research is not built in, per se, like in the universities, into the structure of the teaching load. (SL10)

**Question 2:** What is the academic standing of researchers at your college, and how does this affect their careers as faculty?

The Collective Agreement does not currently allow for differentiation among faculty, which means that there is no official recognition of a difference between faculty who devote themselves to teaching, and those who incorporate applied research activities into their curriculum. “Within the Collective Agreement there is no difference. If you are a faculty member and you happen to be doing some research versus you’re a faculty member and you just happened to be teaching, there is no difference” (SL11).

The possibility, however, of a perceived difference between the two groups of professors, is one that was referenced by one respondent: “The schism between those who engage in research or have higher qualifications and those who don't is certainly something that has been posed as a question to me by many people doing investigational studies like yours” (SL9), but it is not a schism that is broadly identified by the respondents as a pressing issue at this time, although it may be one that is emerging, especially if there is a perception that some programs, notably the applied degree programs, are receiving preferential treatment in terms of the allocation of funds for laboratory retrofitting, new facilities and more extensive professional development opportunities.
People who engage in research tend to have backgrounds that would give them the tools and capacities to do so and the most obvious ones are academic credentials at the master’s or doctorate level. I think that's almost a given. I think there are relatively few people who have not done postsecondary studies who would be engaging research anywhere in the world, so the further you go along that academic bent the greater the likelihood that you have the skill set and interest to engage in research… There is no question that the body of faculty is changing … over the past 30 years [in terms of] people having graduate academic credentials. (SL9)

If there is a difference in standing between faculty who engage in applied research, and faculty who do not, it would appear to be so insignificant that it is not obviously apparent. The challenge, however, in the immediate future, has been identified as being one of determining who, in the overall college community, will be allowed to engage in applied research activities.

The challenge we're going to have moving forward is who is allowed to do research? Is it only faculty? Is it support staff? Is it [administration]? And within those three stakeholder groups what will happen in future rounds [of] bargaining will be interesting to see. In the universities research can happen outside of the faculty… You [can] have research associates who are non-faculty, one might designate them as support staff in the university sector, but their role is primarily to support faculty. Also, keep in mind that on the university side you can hire people who were purely dedicated to conducting research and have no teaching, but when they’re hired for that they have a grant that goes with it such as a chair in something, so that they are back-filled so that what would have been their teaching responsibilities, however light compared to the college side, you still pay for. (SL11)
For the time being, at least, there appears to be no systemic differentiation between the two concentrations of teaching, and teaching/researcher, but there is some recognition among the respondents that this is an issue that will have to be thought about at some point as the colleges continue to concentrate on the delivery and quality of their applied degree programs.

**Question 3: To what extent does participation in research activities influence hiring and promotion?**

As with the senior leaders who were in leadership positions when the Acts (Government of Ontario, 2000; Government of Ontario, 2002) were introduced to the Ontario colleges, the current senior leaders in the colleges participating in this study were also in agreement that faculty participation in applied research activities do not affect promotion, as step increases are handled through the terms of the Collective Agreement, and that hiring decisions based on previous participation in research activities are only taken into consideration after a candidate’s suitability to teach, based largely on expertise in the field, has been taken into account. “It does not affect promotion. If somebody's looking for somebody with [research] expertise in a particular area, that could have an effect although I've never actually seen that occur. Promotion and tenure do not apply [because of the constraints of the Collective Agreement]” (SL9).

As one respondent noted, what the college expects of new faculty hires is that they have relevant work experience.

We are true to our roots [and] we want people who [have] had hands-on experience in the particular workplace environment for which they’re hired to teach, and that they have whatever the terminal degree is in the domain so we also can satisfy the needs to have faculty at a credential level higher than [what the terminal degree level is]. (SL10)
There is an interesting observation, however, that according to this interview respondent some Ontario colleges began deliberately hiring faculty with graduate degrees as a requisite after 2000 in order to ensure there will be faculty available to teach in applied degrees as they are developed, “but they are hired to teach, they are not hired to do research… they have come here because [teaching] is what they want to do, and that's what we encourage” (SL10). Having said that, it should also be noted that in the college where this respondent works, new faculty are put through a college teacher education program during the probationary period, and during that time new faculty are encouraged to conduct a research project that has to do with the scholarship of teaching and learning, so it would appear that some effort is made to make faculty at least somewhat familiar with the research process, if they are not already. “Encouraging the research in teaching and learning is part of the culture we are trying to generate” (SL10). A similar observation was made by another respondent who noted that while the institution hires people to teach, “I think that the response is probably that there is some element of when there are vacant positions, [we are] looking at hiring faculty with research backgrounds” (SL11).

Having faculty who are at least nominally engaged in the scholarship of teaching and learning, and are encouraged to integrate scholarship of teaching and learning into the practice as well, can be seen as a significant shift from simply hiring faculty who are experts in their vocational field.

**Question 4: Is time for applied research accommodated in the SWF? If so how?**

If time for research activities is to be available to faculty, that time would have to be found primarily through the mechanism of the SWF component of the Collective Agreement. Yet the responses to this question varied considerably. For (SL8), for instance, the solution to the question of providing time for research appears to be having levels of engagement in the process.
Time requirements are met through the parameters of the SWF. What we believe is that we need steps of applied research in certain selected areas rather than breadth across the board, and that drives how we handle that. (SL8)

The most common response was that for cases of accommodating faculty interest in research outside the curriculum, a discussion, or negotiation, would have to be held between the faculty member and management, but the arrangement would almost invariably include a course load reduction.

We have what are called [internal grants] and so faculty can apply for an [internal grant] which is a small research grant, and they might get that, and then negotiate how that's going to operate in terms of overall workload. The other case would be if you get an external grant that has money to cover release then … you would not get full course sections assigned. (SL9)

For one college in the study, the answer was that applied research activities should be integrated formally into curriculum (SL10), so that applied research activities will always involve students as well as faculty. “We're not funding individual faculty research projects, just because [faculty] are interested in doing that, that is not our college mandate” (SL10). In the case of this college, faculty who have applied research embedded in the curriculum might get some SWF time allocated for preparation and evaluation of the student research projects, just as faculty are given similar time for the preparation and evaluation of regular, non-research, courses. “Building [research] into curriculum is a way for us to build it into our overhead and cost, and to acknowledge it within the SWF. So it's not necessarily release time, it could be just SWF time” (SL10).
In general, the observation by the interview respondents was that the Ontario colleges’ mandate is to teach, and that formal applied research activities are an add-on.

When the SWF was created, research didn't exist for faculty. Maybe one could argue that there is some flexibility here, but as a systematic means colleges weren't created to do research. When colleges were created in ‘65 it was to teach. And the SWF which came about in the mid-80s, when it was implemented, was still about teaching. [Time for research activities] may be something that is addressed in the future, and how it is addressed is going to be one of the interesting challenges. (SL11)

**RQ3:** *What differences, if any, are observed in ‘novice vs. ‘integrated’ colleges (as described by Madder (Appendix H) in terms of how time is allocated to faculty to conduct research activities? (Current senior leaders in the four selected colleges, SL8 – SL11).*

The following set of questions were put to current senior leaders in the four colleges selected for this study in an attempt to ascertain if there are differences in how these colleges approach the allocation of time for applied research activities with respect to where a college falls on the Madder (2005) typology. The positions of the colleges on the continuum were described in Chapter Three of this study, and are summarized as follows:

**SL8** is a senior leader in College C1. College C1 falls in the Early/Late Novice categories on the continuum of the Madder (2005) typology and does not offer its own degrees in applied fields of study, but does have degree completion arrangements with a university. There are currently no plans in place to offer degree programs at the college. The research area focuses on a few projects that do involve students, primarily as part of course curriculum, with one project having a national/international reach. There are no current plans to increase the number of applied research projects.
SL11 is a senior leader at College C2, placing on the Late Novice/Early Established categories on the continuum of the Madder (2005) typology. This college offers a few degree programs, and also has articulation and transfer agreements with a number of universities, most of them outside the province. The research office is very small, and the reach is local. Involvement in applied research and innovation projects are primarily through faculty projects conducted with local businesses and organizations. Identified student research projects are few and primarily course curriculum based.

SL9 is a senior leader at College C3, College C3 places into the Late Established category on the continuum of the Madder (2005) typology and does offer its own applied degrees. College C3 has a research advisory council in place to assist the research office, offers the faculty opportunities for independent applied research activities through release time and sabbatical arrangements, provided the research is shown to be of benefit to students. Systems are in place to help students explore the possibilities of developing their own, program-based research projects for market.

SL10 is a senior leader at College C4. College C4 places into the Fully Integrated category of the continuum of the Madder (2005) typology where applied research activities are integrated into the curriculum and where numerous degree programs are offered. The research projects have primarily a regional, with some national, reach. The college currently has four Centres of Excellence. Involvement in applied research and innovation projects are curriculum based, with research by faculty and institution-wide projects featured on the web site.

**Interview questions**

**Question 1:** To what extent is faculty support of student engagement in applied research activities expected and/or rewarded?
The general observations among the senior leaders was that faculty support of student engagement in applied research activities is expected. Student participation in the applied research process at the colleges is a growing expectation by senior leadership, and faculty who work to include research activities are encouraged to do so.

Well, the expectation is that that will be the major focus. We would almost certainly support anything that involves students…but if it was simply, you know, I've got a grant and it allows me to go off and do my own research for five years; that would not be of terrible interest. (SL9)

The size of classes, which, although having funding implications for the institution, may make it a challenge for a faculty member to engage all the students equally in applied research activities in a meaningful way, which is a limitation that may not have anything to do with the desire of the college to include applied research in the classroom (SL8), but is a reality related to finding appropriate projects for the students. Still, because student engagement in applied research activities is an expectation in the context of course allocation on a SWF, if a faculty member is supervising students undertaking this work, the SWF negotiations with that faculty “would be noted accordingly on the SWF” (SL10).

If someone is doing some kind of development of research opportunities such as finding partners for potential research down the road, as well is teaching students and supervising them, there may be developmental time given on complementary time. It really is going to be dependent on the nature of work the faculty is engaged in related to research. Having students involved in research is absolutely critical from our perspective – non-negotiable, even. (SL10)
One solution to finding applied research activities for students was suggested by SL10 who pointed to already existing capstone projects which might be considered. This respondent does, however, point out that some schools may have some difficulty finding faculty with the ability to lead these research endeavours, and that encouraging applied research activities in those areas may be a little premature, so when there are faculty vacancies, these schools “…are looking for somebody who has a research background. In other areas it's probably not there yet… so it's more apropos for some areas than others, at least at this point in time” (SL10).

**Question 2: What support systems are in place to assist faculty in conducting applied research, including grant application, proposal writing, Research Ethics Boards, data storage?**

All the colleges in this study have recognized the need for some institutional support for applied research activities. These supports range from having one or two people engaged in developing policies related to applied research activities, including developing intellectual property (IP) policies, and helping faculty develop research proposals (SL8), to having fully developed research offices managed by a dean of research with a complement of support staff to assist with all aspects of the research process, from grant proposal writing to experienced researchers who assist with research project development. There are also faculty with advanced qualifications who are seconded to the research offices and departments.

There is no obligation for people in this institution to somehow convert and become researchers, but certainly at the baccalaureate level … [we are required] to have a research component, and we are externally evaluated on that, so I guess the short answer is yes we do have all that stuff, and have had for a significant period of time… We are not training people; we're not saying we have a training unit and we will train you to engage in research. To develop research capacity in an individual, and the enthusiasm
and the intellectual curiosity, to me is done through studying at the master’s level and doctoral level, not through an institutional plan of developing scratch capacity. (SL9)

The further along the Madder (2005) typology continuum an institution is placed, the more support there is for applied research activities, with colleges C3 and C4 having the most established supports in terms of leadership, personnel, policies, experienced and mature research ethics boards, and financial supports. “We have all our policies in place, and in fact we are required [by] the PEQAP requirements for our degrees to have these policies in place” (SL10).

There was, not surprisingly, a recognition that the resources available to colleges to support applied research activities are still in the early days of development, and not of a scale comparable to universities.

We are not on the same scale or economy that you have within universities. There are some supports but it would not be the same, for example, as with the University of Toronto…. There is a bootstrapping exercise going on, and you have to have supports initially to build up more activity, you [then] have some additional supports. It takes time to do it, and the underlying question is, are there supports available, yes. But to what extent and how easy is it to access, varies… Do we have people involved in writing or who can help faculty apply for grants in terms of how to write grants? Absolutely. Are there enough of them, I would say that's part of the bootstrapping exercise. (SL11)

**Question 3:** What systems are in place to mentor and assist faculty wanting to engage in applied research activities?

The mentoring aspect of encouraging faculty to engage in applied research activities was not as prevalent across the participating colleges, and was less clearly tied to the Madder (2005) continuum. Opportunity for faculty to get advice and assistance with developing their applied
research projects – whether for themselves or for curriculum-based projects – appears to be available from whatever applied research office the colleges have established, or from within the individual school where the faculty works, but formal mentoring systems are not particularly advanced. “I wouldn't call it a formal mentoring system, but certainly advice would be available” (SL8). Some professional development opportunities may have a research methods focus, and there may be occasional workshops delivered in areas having to do with applied research projects (SL10), but the approach appears to be fairly sporadic, and on an as-needed basis.

The apparent deficiency in mentoring activities also applies to mentoring faculty who are interested in pursuing advanced academic degrees, and in the case of College 3, support in a general way seems to be geared primarily toward faculty who pursue advanced degrees that the institution sees as being of benefit to the college.

I think [we have] fairly strong encouragement for those people who exhibit an interest in advanced degrees in areas that are of interest to us. So while there might be some people who might say well, I wanted to get a doctorate in education at Northern Illinois, specializing in outdoor education, that's not an area of interest to us. Someone who says I can get into a flexible time in master’s of Engineering at Waterloo, that's of great interest to us, assuming of course that the person is teaching in a technical area to begin with. (SL9)

When it comes to assisting or mentoring faculty interested in learning more about applied research, all four college leaders indicate that while there are a variety of related supports for applied research activities, specific and established mentoring programs at an institutional level are either nascent, or still to be developed.
If [a faculty is] within a particular school or faculty that is engaged in [applied research] I think there are a lot of supports there. If we go to another area, where they are not involved in research, there are probably no supports, so it becomes much more difficult. (SL11).

**Question 4: Is applied research a strategic focus for your college?**

The responses to this question indicated that although the participating colleges have a clear and identified emphasis on applied research and on engaging faculty and students in applied research activities, teaching and learning continues to be a central focus for the institutions, with research activities being seen as ancillary and supporting activities. “[Applied research] is complementary to what we do in our programs” (SL8). The degree to which an institution identified applied research as being either a strategic direction or a general but secondary institutional focus was only minimally related to the colleges’ position on the Madder (2005) continuum.

Well, [applied research] has to be [a strategic direction] because of the nature of the programming we offer, but is not the be-all and end-all. My major focus, and the academic focus, is to significantly and measurably enhance the quality of the facilitation of teaching and learning, and a piece of that would be enhancing the qualifications and capacity, intellectual bent, and curiosity of faculty, and having that spill over and involve students, directly or indirectly. (SL9)

Applied research activity was identified as a strategic direction for the applied degree programs, and some of the advanced diplomas, at C 4, but not yet for the institution as a whole (SL10). C2 considered applied research activities as appropriate in programs “where it is appropriate” but applied research is “just another part of the onion being added to the educational
experience that enhances what students are learning with experiential learning and giving them additional skills so that when they apply for a job in the workplace, they'll be able to get it” (SL11).

**Supplementary Questions**

As part of the interview process the researcher asked all the interview respondents a series of supplementary questions to clarify or further explore a research question and related issue. The following are representative examples of those questions and responses, and identifies three findings that grew out of this portion of the interviews. These findings were determined by selecting the findings that repeated most frequently in the responses to the questions, and these findings are presented in the order of frequency of responses.

**Finding 1**: The working relationships between Ontario colleges and universities has hampered the evolution of applied degrees, time for applied research, and degree pathways opportunities for students in the Ontario colleges.

Of all the follow-up questions used in this study, the one related to the working relationship between colleges and universities in Ontario elicited the most responses from the interview subjects (n=11), and the most consistent set of responses as well. The general tenor of the comments is that when then Education Minister William Davis introduced the concept of the colleges in May, 1965, there was, in the basic documents, an intention to form a curriculum committee that over time would look at the relationship between colleges and universities and explore the possibilities of the two post-secondary sectors working together at some level, even though the colleges were meant to be independent, equal to but different from, the universities.

The whole intention was that there would be some kind of conversation. The good news is that the universities ignored the colleges for [about] 17 years, [and] because they were
ignored by universities, colleges were able to [evolve] and develop a sense of mission. (SL1)

So ultimately the ‘two solitudes’ operated largely independently of one another, with the colleges developing their links to the local communities that they served, and developing vocational programs for the students. Of course, college graduates who wanted to pursue further education in the province’s universities found that they were not given much, if any, credit for the work they had done while in college. “For two or three decades [the universities] did everything they could to suppress college aspirations on behalf of their students” (SL1). Then, when the colleges decided to offer their own degrees in order for their students to have degree completion available to them, “Again, the universities fought like hell to make sure the word “applied” was in front of those degrees” (SL1) in order to signify that applied degrees are somehow if not lesser, then certainly different from, university degrees.

That the universities were opposed to the idea of colleges offering degrees and conducting applied research is clear from the comments of the respondents. “They don't see the colleges as having the capability or the capacity to do research; they didn't want competition for dollars. They just really were dismissive of the colleges in that whole aspect” (SL6). The perception that universities in Ontario do not, by and large, have a very clear picture of the capacity or capabilities of colleges to offer excellence in applied learning, including applied degree work, is a constant theme coming from the interview respondents.

It was enormously frustrating to be dealing with the universities in the early days of this process. Some are obviously better than others, but they're very difficult to negotiate with and for the most part it was frustrating because I felt students were being disadvantaged when they went to apply to a university and a college education was discounted. (SL6)
This Ontario history of colleges and universities having a track record of being unable to cooperate very well in order to find post-secondary education pathways for their respective students is a unique and not very constructive system, and this sentiment is reflected in the interview respondents’ observations that other jurisdictions within Canada have managed to overcome these barriers, British Columbia and Alberta’s systems being two that are referenced as successful, and Quebec’s being another. While there are Ontario colleges and universities that have managed to develop working relationships that benefit the educational ambitions of the students, Ontario’s ongoing, adversarial, binary, post-secondary system is not given a very optimistic prognosis. “Over the years there have certainly been efforts to improve that, but I'm not sure they've accomplished much, and I don't feel really hopeful about it” (SL6).

When the colleges were given the possibility of offering applied degrees in the Act of 2000, the reaction and opposition of the universities was also accompanied by opposition from some of the colleges. “There wasn’t a university in the province that supported the idea of us getting any degrees, and in fact quite a few of the colleges were against it” (SL4). The opposition from some of the colleges, however, may have been rooted in part more in the way colleges were selected to participate in the first round of submitting degree proposals as part of the pilot project, but even so, with only half of the province’s 24 colleges offering applied degrees, the enthusiasm for the idea of degree in the colleges is clearly not universal, although some of the reticence may come from the resources required to prepare and then deliver a degree program. Some reluctance, however, may also have come from a reticence born out of a fear of deviating too far from the original college mandate, and that there are some colleges that prefer to be thought of as teaching-only institutions. The arrangement some Ontario colleges and universities have established whereby a college student can earn a joint four-year diploma and degree is one
that does much to meet the needs of the students. “We are offering degree-level studies but those studies are done jointly as opposed to [being solely] a college accredited program. We think this arrangement is excellent” (SL8). Again, such arrangements are achieved on an *ad hoc* basis rather than in any formal, systemic fashion, and rely on the goodwill and willingness by administrations in both institutions to participate.

How the relationship between colleges and universities is going to be improved is not clear, except that there is going to be a need for a solution that is, at least in part, political. “I don’t know how [the deadlock] is ever going to be broken without government intervention because the universities will never give in; they don’t have to until the government, like in [British Columbia] and [Alberta] change the status of the institutions” (SL4). The comparative success of transfer and articulation programs in the United States was referenced as being an example of how colleges and universities can work together for the benefit of the students, but again there is a clear sense that a change in Ontario will not happen without the political will in government to step in and, as one respondent put it, “enforce the rules” (SL4).

Not surprisingly perhaps, the suggestion that Ontario colleges would eventually begin to offer their own graduate degrees was brought forward as a possible solution to the hurdle college students face when they try to enter a university graduate program with a college baccalaureate. In order for that to happen, the colleges would have to hire professors with advanced academic degrees – PhDs in the case of those teaching in master’s programs – and just as the introduction of master’s level professors to teach in the applied baccalaureate programs precipitated a level of academic drift in the colleges, so there is a concern that an increased influx of master’s and PhD’s will change the college culture in a way that may not have been anticipated. The 50-year history of the Ontario college system seems rather paltry compared to the, in some cases, more
than a century – long history of the universities, and it could easily be argued that the colleges are still in the process of defining their own culture, one that is complementary to, but separate from, the universities. A case in point is the way permission to offer an applied degree is granted through the PEQAB process, a process that is described as university-centric even though the degree has vocationally focused curriculum, rather than the more academic and theoretical degrees in universities.

One suggestion that has been made is that perhaps the Ontario government could look more closely at the Bologna Process (Canada, 2009) to see what has been done in the European higher education arena in terms of facilitating student transfer among institutions.

I do believe that we need to define [the colleges] in different manners to keep our culture’s unique, and that the governments need to move from a very 19th century… kind of thinking, to reflect what’s going on in the world. (SL11)

Another possibility brought forward was in part a reflection of the fact that some colleges have achieved fully integrated status as colleges able to both teach and conduct applied research, and perhaps it is time to consider the possibility of these institutions offering their own three-year baccalaureates; in effect turning their three-year diploma programs into three year degrees. If that were to happen, there might be a greater likelihood that universities would be willing to accept college graduates, if not into a graduate program, then into the fourth year honours program that would then lead to graduate school. The success of such a decision would be contingent on acceptance by the universities of the college delivered applied degrees, and on the acceptance of the marketplace of the value of a three year applied as opposed to the current four year applied degree.
The problem the government's going to have [is that] they can dangle money in front of the universities to try to get them to accept the degrees, but it will ultimately fail unless the degrees are seen as credible in the marketplace and are also seen as credible within the postsecondary sector. (SL11)

As was noted by the interview subjects, the concept of either better credit transfer or college three year degrees seems to make sense as students at colleges - and taxpayers - are now essentially investing five to six years for a college advanced diploma and a university degree, and university students are spending four years at university and two years at a college for a degree and an advanced diploma. These approaches, and permutations like them, are expensive, take longer than necessary, and often have overlapping components as students are required to take – or re-take – courses in order to meet the widely varying requirements of the receiving institutions.

At the other end of the degree spectrum in colleges is the possibility of Ontario colleges offering their own applied - or professional - master’s in order to give the degree students a place to go to continue their studies in their chosen field. Some jurisdictions, including Norway and Ireland already do so, and offer professional doctorate degrees as well.

In this area the colleges will likely be bumping up against the intransigence of the receiving Ontario universities, who, reluctant as they have been to accept college baccalaureates, are not likely to look with favour on college level graduate degrees.

Where I see it going is that colleges will eventually offer their own master’s… If, however, we do offer master’s programs some solution will have to be found to the question of accommodating time for research because the research will be longer and deeper. (SL3)
Again, it appears unlikely that colleges and universities can reach some agreement on the validity of college level master’s degrees without the intervention of the government, and that is not likely going to happen until there is a demand for such qualifications from the marketplace. The Ontario government has expressed a desire to see three new teaching universities established in the Greater Toronto Area (Brown, 2012), and one college has already announced its intention to transform itself into such an institution, so it may be that for colleges to offer graduate degrees they will have to reinvent themselves as university colleges offering applied degrees and applied graduate degrees, but with a greater emphasis on teaching than on advanced theoretical research.

Given the expense of building new universities along the lines of University of Ontario Institute of Technology, it seems far more likely that the province will allow three GTA colleges to convert to university colleges with a concentration on teaching and applied research. “Unless, through the new ONCAT (the Ontario Counsel for Articulation and Transfer), we make some progress, the only way I see any rapid progress is through legislation” (SL11).

Unless, however, a solution is found, the college students whose education has, in large part, been paid for by the Ontario taxpayers, will likely be forced to continue to move to other jurisdictions if they want to pursue graduate work, which will continue to undermine the provincial economy. But perhaps this is the lever that will encourage the government to act.

To me the solution… is to develop colleges as many countries have done into the non-research intensive degree granting institutions and just have a nice, continuous flow of certificate through diplomas to master’s… In so far as research is going on it would largely be within the curriculum of the program. (SL3)
**Finding 2:** There has been a lack of planning by college and government leaders for the introduction of applied degrees and applied research into the province’s colleges, and the implications for funding and the SWF.

The topic of how well – or poorly – the introduction of applied degrees and applied research was planned by the various stakeholders, including government and Ontario colleges, and how well – or poorly – the planning has been for the evolution of these elements within Ontario’s colleges, elicited some strong responses from the interview participants; almost all of whom (n=8) felt that there has been, and continues to be, a certain lack of coherent planning for the introduction, maintenance and future development of applied degrees and applied research in the colleges. The issue of planning is closely tied to the nature of the college/university relationship, both in the early days of baccalaureate offerings in the Ontario colleges, and now. Clearly, there is a definite sense that the lack of initial planning lies at the core of some of the difficulties experienced by Ontario colleges as they determine how, and if, to evolve into mature, degree-granting, applied research-focused institutions.

One interview respondent summed up the response to the question about the current state of province-wide planning for the continuing development of applied degrees and applied research in the colleges in the following way:

It’s all *ad hoc*; I don’t see any master plan; I don’t see any vision. I see the current government talking about having more university campuses, but they don’t know what that means; there doesn’t seem to be any coherent policy planning at all taking place… within the college sector… it’s only a matter of time before you have people fighting for time to do research.(SL1)
The same respondent felt very strongly that college professors, even those teaching in degree programs, should not be engaging in their own extra-curricular applied research: “…the notion that those who teach in the degrees in the colleges have to have time to do original research as part of what they have to do with teaching in the applied degree programs, is simply nonsense” (SL1).

At the heart of the responses lies the concern that research and applied degree programs were introduced to the Ontario colleges without a plan or adequate funding. “The challenge is that [applied research] is not funded at this point. So the government might say, if you want this, that’s fine, but you have to find the money internally to make it work” (SL11). This approach of suggesting that money for applied research is somehow going to be produced from within the college does not appear to be realistic, certainly not for larger and longitudinal studies. Part of the solution to the problem is that colleges will need to continue to work on developing a sustainable research culture within the institutions.

The focus on the need for developing a research culture for college faculty, however, seems to have been lacking since the beginning of the baccalaureate and applied research mandates. Leading up to these new initiatives for the colleges, the government and college leadership had started thinking about what programs they might be going to develop as degrees, without giving much thought to the need for faculty qualifications to teach in the degree programs and how those qualifications would need to change.

[We] did not have a formal policy in terms of academic credentials… and I don’t believe they ever thought about the fact that when you get into university [degree] granting, you really need to have faculty who are qualified… I don’t think they had thought about that or planned for it at all. (SL2)
The point was made by two respondents that when the legislation to grant applied degrees was passed, PEQAB was not yet established, so there were no PEQAB requirements, so “everybody was kind of fumbling in the dark” (SL7). Some colleges applied degree-standard rules that they were familiar with based on accepted academic practice in other jurisdictions, and planned as best they could for the degree-granting capability ahead of time, but other colleges didn’t, and then had to react when those requirements came forward.

The responses to questions exploring whether or not time for faculty to conduct applied research was considered a part of the SWF in the planning stages varied somewhat, reflecting the challenges each institution has in terms of coming to grips with the thorny question of how to allocate time for research in a post-secondary system that was not designed to encompass both research and teaching within the responsibilities of the professoriate. As a result, and without clear directions from the government to do otherwise, each college has essentially cobbled together a time allocation system that fits each institution as best as possible. “[Release time for research] isn’t funded… MTCU does not fund us for doing research… there is chronic underfunding, and even with NSERC, [funding models] are all built on the presumptions of university funding models, not the college models” (SL9).

That such a lack of direction in terms of time allocation and funding would likely prove problematic was recognized by some senior leaders, even in the early days of the introduction of applied research into the colleges, because the result was that each request for research time had to be considered on a case-by-case basis, and within the restrictions of the SWF. One interview respondent dismissed the issue by observing that in the planning stages for research in the colleges, the question of time was thought of by the government “…as a management issue for the colleges… So instead of worrying about time for teaching and research [we wanted to] let
them work it out in a reasonable way” (SL2). This subject also raised the point about the somewhat indeterminate nature of research:

How can you count the number of hours people put into research? Sure, you start work at eight o’clock in the morning and don’t finish until five at night, which many of these people do because they have the excitement… tracking actual time spent researching is difficult. (SL2)

The reality for the colleges and the college managers, however, is that while a faculty member may be provided time to conduct research for a semester by being off-loaded a course or two, the teaching hours still have to be covered, which is often done through part-time hires, all of which costs money. In addition, time allocated for research activities is often just for a semester, when, in fact, the research process and project may take much longer. A person engaged in applied research, however it manifested itself, would invariably have a different teaching load than somebody who wasn’t. “The short answer to how we were going to accommodate time for research was through work load release in terms of teaching hours” (SL5), an answer that did not necessarily sit well with faculty because of the lack of clarity about how the research culture was going to be introduced, and how it was going to be decided who, in any given college, was going to be allowed off-loaded time to conduct research.

This idea that permission to conduct research, and the time needed to conduct this research, would have to be handled on an individual basis is a common theme in the interview responses. Some thought was given to allowing faculty time to conduct applied research when the colleges were given the go-ahead to offer applied degrees and to do applied research, “but no kind of formula [was provided]…. My understanding is that it's all case-by-case” (SL3).
The fact that colleges in Ontario are funded as teaching institutions, and the difficulties that creates in terms of releasing professors to do research, was described by most (n=9) respondents as a major stumbling block to releasing faculty to take on research projects outside the classroom. There were and are grants available, but the grant money to do the applied research is often needed to backfill the release time teaching duties for the faculty who are going to do the research.

We have to backfill them from their teaching duties because we are still funded for teaching, we are not funded for...applied research. If we get funded for research we need an outside source [to partner with, and invest in, the project], or we allocate some internal funds…to encourage faculty to participate. (SL11)

The difficulty with that is that the Collective Agreement as it is currently structured does not recognize faculty release time for research, “…so the suggestion is that the need for time for research should have been, and still needs to be, included in the Collective Agreement negotiations” (SL11). Only one respondent described a situation where a faculty had been hired by the institution solely to conduct research, but the research project, including a portion of the faculty’s time, was primarily funded by government and various outside agencies. “Time [for research] requirements are met through the parameters of the SWF. What we believe is that we need steps of applied research in how we handle that” (SL8).

As for there having been an expectation that faculty who were going to teach in the applied degree programs would be supported with time and resources to earn the necessary qualifications, such a model was seen as being more of a university model than one appropriate for college professors, and not enough attention was paid to this possibility. “This is another one of the problems the colleges have always faced because they have constantly underplayed the
breadth courses that are required to add to any real degree” (SL4). The reality is that by and large, colleges hire the people with the necessary advanced credentials to teach in the degree programs from outside the institution, and do not have special supports in place for their own professors who might want to earn the advanced academic credentials, beyond the normal supports for academic advancement, which vary from institution to institution.

One respondent suggested that if faculty want to pursue individual applied research, they can do it as part of their graduate studies, or on their own time.

We as an institution are not funded [for research projects], and we have been very clear that any of our research initiatives that we undertake must be directly related to curriculum, and must engage, at some level, students in the research endeavour… Capstone projects and applied research projects are a part of the curriculum, and so the faculty work is related to curriculum for applied research and that’s built into the cost of the program. (SL10)

In terms of the influence of publications, grants and research awards earned by professors on hiring, promotion and tenure, the answer was that because colleges looked at research differently than universities – and there is no tenure, per se, in the colleges beyond the job security offered through the Collective Agreement – the colleges were more concerned about hiring people with the right experience and qualifications, than any research awards earned.

The colleges wanted to ensure that the qualifications and research capabilities… that [the professors] needed for the programs [were in place], but it wasn’t going to be as important as it is in universities – the publish or perish philosophy…that mentality did not come with degrees into the colleges. (SL6)
What mattered was that the faculty had the necessary preparedness to give the students a better learning experience, and the students would have faculty who understood applied research, and, most importantly, that the students would have the opportunity to participate in that research (SL6). The fact was that in the beginning of applied degrees and more formal applied research in the Ontario colleges, managers were more interested in getting people with research experience, who could also teach, to become involved. “We didn’t really care if that research is published or not… [unless] it was associated with a specific program and that by doing a publication we could use that in marketing” (SL3).

The result is that because of the inconsistent approach to planning for how time for research would be accommodated in the new college configurations that evolved following the turn of the century, college faculty were, and in some cases still are, both confused and daunted by the task of engaging in applied research. As Fisher (2005) and others have shown, there is no lack of interest in doing applied research at the colleges, but there is a lack of clarity about how time for research will be provided, and what other resources will be available. For independent research projects conducted by faculty, there simply isn’t enough time, even with course off-leading, and some release from other duties. By the time a research proposal has been designed, the proposal written, the REB approvals granted, funding applied for and letters of informed consent written, sent and collected, the time allocation during a semester is likely used up, and the project itself has not yet gotten off the ground. Then, once the project is completed, there are presentations at conferences, and possible workshop presentations to be considered, and separate time has to be negotiated for all these functions.

Faculty release time in the form of course +off-loading, and space on the SWF, costs the institution money. As respondents noted, funding for research in the colleges is felt to be
insufficient, and colleges can’t be expected to fund their research solely through industry partnerships.

We did think about [research time allocation]. We decided we would handle it as complementary time on the SWFs, or… the faculty might get released time to do some research. At the time when we did applied degrees… we did talk about [time release] and [tried] to think through how we were going to do that. We knew the people's needs were different, but I’m not sure if that has changed since then. (SL6)

Ultimately, most of the respondents (n=7) indicated that the constraints of the SWF are primarily what determines how faculty is given time for research. The focus of faculty work continues to be, and will continue to be, teaching and learning. If applied research is part of the teaching and learning experience, then it is part of the professor’s job. “That is why we have [applied research] built into the curriculum… We are not funding individual faculty research projects just because they are interested in doing that - that is not our college mandate” (SL10).

In answer to a follow-up question about whether or not there was ever any concern expressed within a college about the possibility that applied degrees might take students, faculty and resources away from the advance diploma programs, one respondent replied,

We never contemplated that. We thought the diploma programs were strong and had a lot of students, and we thought this [applied degrees] would attract a different level of students. We thought that students in the diploma programs might eventually move into the degree, which did happen… but no, we did not see it as taking away from the diploma programs. We were still finding our way in those days, because it happened gradually I don’t think we necessarily sat down and thought through every single consequence that might come because of the degrees, and then plan for it. (SL6)
Finding 3: Some or all of the applied research activities in colleges belong in curriculum because colleges are not designed to accommodate independent research projects by professors.

When asked about whether or not applied research at the applied degree-level should involve students, and if research should be a standard component of the curriculum in order to accommodate faculty time for research, several respondents (n=7) felt that applied research in the colleges should engage the students directly and, as such be part of the curriculum. Some (n=5) of the respondents framed the need for having applied research in the curriculum in terms of the benefit to the local or regional business community, as well as the students, of engaging in the research projects. Only one (n=1) felt that applied research did not belong in the curriculum, with the exception of degree programs. For the most part respondents felt that it is the job of the colleges to keep the local economy competitive so that the local industry from social services to industry, hire the graduates. “I think one of the ways to do that is to build [applied research] into the course, and that might mean capstone projects, which I think is a wonderful way of doing it, and that could be sponsored by industry” (SL11). The unavoidable reality is that currently the *ad hoc* approach to time allocation for applied research activities means that only applied research in curriculum can be consistently and predictably scheduled and resourced.

With applied research activities embedded in curriculum, students will have opportunities to learn how to conduct research as part of their curriculum, and, depending on the applied degree program, there may also be opportunities for students to receive some professional certifications provided participation in applied research projects are part of the curriculum. “Students need to understand some key elements of research methodology and be smart enough and insightful enough to know how to apply, and to render, reasonable judgement” (SL5).
The lack of funding for research, however, does affect the number of students who are able to engage in curriculum-based research, largely because of class sizes in colleges. As class sizes continue to grow, it will become increasingly difficult to give all the students the same level of applied research experience. With groups of 35 or more in a class – and growing, as colleges keep afloat by increasing class sizes - there is a limit to how much a professor can work with small groups of students on projects, and how much the individuals in a class will benefit from being in a large capstone presentation group. “This is a limitation that has nothing to do with philosophy in any respect, but more to do with just [funding] limitation” (SL8).

The one respondent (n=1) who felt that applied research should not necessarily be a part of the curriculum, with the exception of applied degrees where it is a requirement, also felt that the use of the term “applied research” in college programs is a misnomer. The argument is that there are many colleges with strong histories of good quality programming and curriculum development at the certificate, diploma, and advanced diploma levels, and that there is no reason why these colleges should feel that they need to become involved in applied research in order to benefit the students.

Students not engaged in applied research are benefitting from well-designed curriculum with plenty of student projects in well-resourced institutions taught by good faculty, and whether or not there is research involved with that does not matter in terms of the quality of the students’ educational experience. (SL7)

Perhaps of greater concern is the possibility that applied research in the curriculum of any given college will not be rigorous applied research, perhaps because the faculty may not be as familiar with the rigours and methodologies of applied research, or have only had cursory experience with conducting applied research. If that were to be the case, and the student were to
not receive a proper education regarding research methodologies, and were, in reality, working on a standard capstone or team project that had just been renamed as an applied research project, the students and the community at large would be getting a very unfortunate impression of the applied research capabilities of the college. The students might think that something they have worked on during their time at the college was a genuine applied research project, when, in fact, it is not. If they then try to tell a potential employer that they have experience doing research in their college program, and are asked to describe it, and the student does so, “…that person might well say that what the student is describing as applied research has nothing to do with actual, robust applied research but is, in fact, just another basic student project common is almost all diploma programs” (SL7).

Currently, there is little evidence to suggest that participation in applied research projects - or the lack thereof - officially influences the hiring and promotion of professors. Considering that a number of college professors have been teaching for many years, there is the possibility that their knowledge has grown a little stale, and the concern is that too many professors are teaching material that they have taught for 20 years, and which is no longer current, and they're not actively engaged in reviewing the new literature and what is coming up in terms of best practices for their fields. Being able to engage with their students in interesting applied research projects might well go a long way toward revitalizing the interest of the professors in their fields.

One of the benefits to students of conducting applied research is the opportunity to present the results at conferences and seminars. If the students have been involved in such projects, and if there is money available, there may be opportunities to bring students to these events and give them the experience of participating in a presentation event, meeting professionals in the field, developing new ideas, and learning what other professionals and
researchers are doing. This could be the sort of highly engaging and valuable educational experience that will go a long way toward enriching the students’ learning while at college.

**Research Findings and Conclusions**

Nineteen emerging research findings were identified by the research questions and supplementary questions. These findings were compared for thematic commonalities, which yielded the following key, overarching findings.

There were four key themes that repeated throughout the transcripts. The following indicate the order in which the themes appeared in terms of frequency of occurrence, with the first theme having repeated the most often. Also indicated are the number of respondents (N) who addressed the question.

Theme 1. Regardless of where a college is located on the continuum of the Madder typology, time for engaging in applied research activities is provided in an inconsistent manner to the college faculty. (n=10)

Theme 2. The effects of a real or perceived lack of planning by college and government leaders for the introduction of applied degrees and applied research into the province’s colleges resulted in an inconsistent approach to allocating time for applied research activities to college faculty. (n=9)

Theme 3. Some or all of the applied research conducted in Ontario colleges should be a standard component of curriculum so that faculty applied research activities include and benefit students. (n=9)

Theme 4. The working relationship between Ontario colleges and universities has hampered the evolution of applied degrees, faculty time for applied research, and degree pathways for students in the Ontario colleges. (n=10)
Summary

This chapter has considered the findings and conclusions to emerge from the interviews with the 11 senior leaders from the colleges and the relevant government sectors. In concluding the data analysis, this researcher has anticipated that there would have been greater consistency among the colleges in their approach to incorporating faculty need for time to engage in applied research activities. Yet, given the constraints of the Collective Agreement for college faculty, and the apparent lack of initial planning by senior leaders in both the provincial government and the colleges as the colleges moved into applied degree offerings and applied research activities, the results indicate that the need for systemic, policy-driven, structured time accommodations for faculty to conduct applied research was too complex an issue to be resolved in the planning phase, and was left to the individual colleges to sort out as they began to implement research cultures.

Chapter 5 will discuss these conclusions in a broader perspective, taking into consideration the relevant literature, and will then offer summative observations about the conclusions, including suggestions for the implementation of the study results. The observations and commentary on the thematic outcome will, of course, reflect the interpretation of the information by the researcher. Recommendations for further research in this area will conclude the chapter.
Chapter Five: Discussion

Introduction

The purpose of this study was to explore how the role of Ontario college faculty has evolved since the advent of the Post-secondary Education Choice and Excellence Act (Government of Ontario, 2000) and the Colleges of Applied Arts and Technology Act of 2002 (Government of Ontario, 2002), and to consider the extent to which the initial decision to create a research culture at the colleges included making time available to the professoriate to conduct applied research. The study also attempted to ascertain how Ontario colleges at various stages of applied research and innovation sophistication are accommodating faculty need for time to engage in applied research activities.

The study is based on a comparison of four Ontario colleges that have achieved a level of research capacity from novice through to a fully integrated research culture as determined by the Madder (2005) typology, and on interviews with two senior leaders in the related departments of the provincial government, five senior leaders in Ontario colleges either during or immediately following the introduction of the Post-secondary Education Choice and Excellence Act of 2000 and the Colleges of Applied Arts and Technology Act of 2002, as well as four senior leaders currently in the four colleges that were used for this study.

A qualitative multi-site case study design was used to collect data for this study. This approach was chosen because a case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context... it is a phenomenon of some sort occurring in a bounded context” (Merriam, 1998, p. 27), meaning that what is being studied is something around which there are clearly defined boundaries, such as an individual, a program, a group, a community or a specific policy. As this study deals with the experience of individuals
who either were or are influential to varying degrees in the way applied research and research cultures have been introduced into and fostered within the study colleges, the multi-site case study design seemed most appropriate. Structured interview questions that allowed for some semi-structured follow-up questions were used in order to collect information from each interviewee. The semi-structured format was used to identify broad issues and to allow each respondent to contribute a more personal perspective, depending on his or her experience, regarding the topic being studied (Newman & Benz, 1998, p. 67).

The study contributed to knowledge about the changing role of faculty in Ontario colleges as these institutions adopt and foster a research culture focused on applied research activities. The study also considered the degree to which colleges at various stages on the continuum of the Madder (2005) typology are engaging in applied research activities and how time for faculty research is being accommodated. It also identifies implications for institutional change in the area of developing applied research capacity as colleges in Ontario are currently making decisions about how much they are going to concentrate their efforts and resources on engaging in these applied research activities, both within the institutions and with external partners. These decision-making processes may include the incorporation of applied degrees into the colleges’ academic offerings, the hiring of faculty with advanced academic credentials, and the development and expansion of departments to support these activities, all of which suggest an ongoing shift in the culture of Ontario colleges – what has been described as “academic drift” (Jones, McCarney, & Skolnik, 2005; Neave, 1979). It is my belief that learning how to accommodate faculty time for applied research activities is important to the successful continuing evolution of Ontario’s colleges as institutions of higher education that engage in applied research activities.
The lack of faculty release time, and money to fund that release time, has been identified as what may be the single greatest barrier to building a research culture at Ontario’s colleges (Catalfamo, 2010; Corkery, 2006; Fisher, 2009; Jurmain & Madder, 2011; Laden, 2005; Madder, 2005; Munro & Haimowitz, 2010; NSERC, 2007; Skolnik, 2002; Vaughan, 1988), and unless a resolution to this barrier is found, developing research cultures will continue to use *ad hoc* methods to advance along the continuum of the Madder (2005) typology toward becoming institutions with fully integrated research maturity.

Recommendations made in this chapter are based on the perceptions of the interview subjects regarding Ontario colleges’ current research culture, how they believe that culture should develop, and how faculty time for engagement in applied research can be accommodated. It is also my belief that the most consequential outcome of the study is the observation that, regardless of where a college finds itself on the continuum of the Madder (2005) typology, as long as the Collective Agreement and the SWF as they apply to Ontario colleges remains the status quo, applied research activities in the colleges will have to be primarily embedded in curriculum and include student participation, and faculty time for individual applied research activities will have to continue to be negotiated on an *ad hoc* basis between faculty members and college management.

Chapter Five will reintroduce readers to the background context of this study followed by a summary and discussion of the findings, and the implications for Ontario colleges. The organization of this chapter will follow the three research questions, and will end with conclusions and implications of the findings, and suggestions for future research.


Discussion

The qualitative data for this study were collected in two phases from four Ontario colleges selected by the researcher. Having worked in a variety of capacities in an Ontario college for the past 15 years during the period when the colleges were experiencing the effects of the Post-secondary Education Choice and Excellence Act and the Colleges of Applied Arts and Technology Act, and having been involved in the development of applied degree programs as well as helping to develop research and related policies, I have considerable familiarity with the introduction and evolution of applied degrees and applied research activities in the Ontario colleges. By employing the Madder (2005) typology as demonstrated in Chapter 4, the study compared these four Ontario colleges to determine the various states of applied research development with a focus on to what extent these institutions had developed and implemented processes for allocating time to faculty to engage in degree-level applied research.

Phase 1 consisted of a document analysis of the four selected colleges using a selection criteria checklist (Appendix E) developed from a description of the stages of innovation for colleges and institutions as designed by Madder (Appendix H). This analysis was of documents publicly available on the colleges’ web sites. The analysis helped to determine where on the continuum of the Madder (2005) typology the selected colleges would fall based on the elements of the selection criteria as established by Madder (2005) in Appendix E. The findings of the document analysis formed the basis for placing the four colleges included in this study on the Madder (2005) typology continuum.

Research Question One (RQ1) then explored the extent to which Ontario colleges and the Ministry of Training, Colleges and Universities planned for the creation of a research culture at the colleges following the Post-secondary Education Choice and Excellence Act of 2000, and the
Colleges of Applied Arts and Technology Act of 2002, and if in that planning these institutional and government leaders anticipated meeting the requirements needed to ensure that faculty who teach in the diploma and applied degree programs would have the time, funding and other resources necessary to conduct applied research. RQ1 also looked at what supports were available to faculty to earn the necessary advanced academic qualifications to teach in the applied degree programs where some research activities are an expectation, and whether publications, grants and research awards would influence the hiring practices of colleges in terms of bringing new faculty on board.

Research Question Two (RQ2) considered what the case study colleges have done since the advent of the Post-secondary Education Choice and Excellence Act of 2000, and the Colleges of Applied Arts and Technology Act of 2002 to incorporate applied research activities into their institutions by finding time for faculty to conduct research, either by the funding of faculty time for research or some other mechanism such as the SWF. RQ2 also considered to what extent faculty participation in applied research activities influence the hiring and promotion of faculty.

Finally, Research Question Three (RQ3) looked at what differences are observed in a “novice” vs. an “integrated” research college as described by Madder’s (2005) typology (Appendix H) in terms of how time is allocated to faculty to engage in applied research activities. RQ3 also examined how faculty efforts to support student engagement in research activities are expected and rewarded by the colleges, what support systems are in place to assist faculty in applied research activities, including assistance with grant applications and applications to research ethics boards, and also if mentoring of faculty who express an interest in engaging the applied research process is available.
Summary of Identified Findings

The following is a summary of the findings presented in Chapter 4. These will be discussed in more detail later in this chapter.

The following findings emerged from interviews with government senior leaders in office prior to or during the introduction of the Post-secondary Education Choice and Excellence Act of 2000 and the Colleges of Applied Arts and Technology Act of 2002:

RQ1: In anticipation of degree-level program offerings and the advent of applied research functions in the colleges, what thought was given to providing faculty time to conduct applied research?

- **Identified Finding 1:** There was a lack of planning in anticipation of baccalaureate program offerings.

- **Identified Finding 2:** Issues related to faculty preparedness for baccalaureate degree offerings were largely left up to each college to resolve.

- **Identified Finding 3:** Exactly what applied research was, and how it would manifest in the colleges, was not considered with any consistency.

- **Identified Finding 4:** There was no clear expectation that faculty teaching in applied degree programs would both teach and conduct research.

The following findings emerged from interviews with college senior leaders in office prior to or during the advent of the Post-secondary Education Choice and Excellence Act of 2000, and the Colleges of Applied Arts and Technology Act of 2002:

RQ1: In anticipation of degree-level program offerings and the advent of applied research functions in the colleges, what thought was given to providing faculty time to conduct applied research?
• **Identified Finding 1:** There was awareness that faculty time for research would be needed, but where that time would be found was not clear.

• **Identified Finding 2:** There was awareness that time and funding for faculty to earn the necessary qualifications to teach in the applied degree programs would be needed, but the funding was on an *ad hoc* basis, determined by the individual institutions.

• **Identified Finding 3:** Faculty research publications and experience with grants were not initially significant influencers when it came to hiring for the applied degrees. Promotion and tenure were not considered to be issues applicable to college faculty.

• **Identified Finding 4:** The expectation that faculty would both teach and do research varied across the colleges with no consistency.

The following findings emerged from RQ2 from current senior leaders in the four selected colleges:

(RQ)2: Since the advent of degree program offerings and applied research functions in the colleges, what have colleges done in terms of developing policies related to providing faculty the time to conduct applied research?

• **Identified Finding 1:** Faculty release time – however arrived at – is not funded in a systematic fashion. Course off-loading, money from participating community partners or through small government grants or subsidies provide some funding on an *ad hoc* basis.

• **Identified Finding 2:** There is little difference in the academic standing of faculty who engage in applied research because faculty standing is constrained by the SWF. The focus of faculty activity should be teaching, not applied research.
• **Identified Finding 3:** Previous research experience may be an influencing factor when hiring new faculty, depending on the area in which they are hired, but applied work experience carries greater weight.

• **Identified Finding 4:** Time for research is not allocated in the SWF, but is accommodated primarily through release time.

The following findings emerged from RQ3 from current senior leaders in the four selected colleges:

(RQ)3: What differences, if any, are observed in ‘novice vs. ‘integrated’ colleges (as described by Madder (2005) (Appendix H) in terms of how time is allocated to faculty to conduct research activities?

• **Identified Finding 1:** Faculty recognition for support of student engagement in applied research activities is on an individual basis, and varies from college to college, and is sometimes an expectation of management.

• **Identified Finding 2:** Consistent efforts have been made across the four colleges to create applied research offices with senior managers, support staff, research ethics boards and related research policies. None of these policies specifically address the need for designated, institutional time for faculty applied research activities.

• **Identified Finding 3:** There are no formal mentoring systems in place for faculty wanting to engage in applied research activities. Workshops and advice are available to varying degrees.

• **Identified Finding 4:** While the respondents noted that applied research was either a strategic direction or focus for the respective institutions, the consensus is that the quality of teaching is an over-riding institutional focus.
The supplementary questions asked by the interviewer identified three additional findings:

- **Identified Finding 1:** An adversarial working relationship between Ontario colleges and universities has hampered the evolution of applied degrees, time for applied research, and degree pathways for students in the Ontario colleges.

- **Identified Finding 2:** There is a perceived lack of planning by college and government leaders for the introduction of applied degrees and an applied research culture into the province’s colleges.

- **Identified Finding 3:** Some or all of the applied research activities in colleges belong in curriculum because colleges were not designed to accommodate independent research projects by professors.

**Overarching Findings**

As described in Chapter 4, these 19 findings were compared for thematic commonalities, which yielded the following key, overarching findings:

**Finding 1:** Regardless of where a college is located on the continuum of the Madder typology, time for engaging in applied research activities is provided to the college faculty in an inconsistent manner.

**Finding 2:** The effects of a real or perceived lack of planning by college and government leaders for the introduction of applied degrees and applied research into the province’s colleges resulted in an inconsistent approach to allocating time to college faculty for applied research activities.

**Finding 3:** Some or all of the applied research activity conducted in Ontario colleges should be a standard component of curriculum so that faculty applied research activities include and benefit students.
Finding 4: The working relationship between Ontario colleges and universities has hampered the evolution of applied degrees, faculty time for applied research, and degree pathways for students in the Ontario colleges.

Discussion of Findings

Finding 1. Regardless of where a college is located on the continuum of the Madder typology, time for engaging in applied research activities is provided in an inconsistent manner to the college faculty.

The data as expressed in Chapter 4 suggest that after more than a decade since the advent of the Post-secondary Choice and Excellence Act of 2000 and the Colleges of Applied Arts and Technology Act of 2002, enabling Ontario colleges to offer applied degrees and to engage in advanced applied research through the implementation of more formal applied research projects by faculty, on their own, and as part of program curriculum, the lack of time for faculty to fully engage the applied research process continues to be a major stumbling block in growing a mature research culture in Ontario colleges.

No matter where a college falls on the Madder (2005) typology, from the “novice” category to the “fully integrated,” the colleges in this study are all faced with the same difficulties in terms of how to allocate release time to faculty for applied research projects. Regardless of the presence – or lack thereof - and state of development of research related policies, well-resourced research offices, and community researcher partnerships and so on, time allocation for faculty engagement in applied research is still primarily assigned on an as-needed basis through case-by-case negotiations between the interested faculty and management.

The complicating factor in how time and money are allocated for various faculty activities can be traced in large part to the imposition of a comprehensive SWF to set faculty
hours in all their responsibilities, a formula that remains essentially the same almost 28 years after its creation (Clark, Moran, Skolnik, & Trick, 2009). This formula does not include time for faculty to conduct applied research, which is still not recognized as a responsibility for college faculty in Ontario. University faculty are given time to both teach and do research, with a professor’s time typically being allocated as 40 percent for teaching, 40 percent for research, and 20 percent for other duties, but college professors are, however, hired primarily to teach.

As colleges evolve their institutional research cultures, finding ways to pay for the release time needed by a faculty member to engage in applied research projects is an on-going struggle. These institutions usually have to try to free up financial resources through small government grants, such as the NSERC (2011) College and Community Innovation program that will pay “about $7,000 per course load reduction” (Eligible Expenses), or through funding that comes from industry and community partners who may benefit from the innovation and research projects conducted by colleges, but these funds tend to be small and do not generally offset the cost incurred by the colleges conducting the applied research.

Using time on the SWF normally set aside for other activities such as meetings and professional development days can also free up some time for applied research activities, but these approaches are all attempts to have faculty engage in research that will, in theory, be designed, conducted, analysed and completed within a semester or two, which is not usually a realistic expectation. As Jurmain and Madder (2011) have pointed out, “Colleges do not receive operating grant monies to permit faculty, who teach up to 18 hours per week, to have reduced teaching loads in order to conduct research. External resources must be found for release time” (p. 20). With funding models for colleges built on the presumptions of university funding models as opposed to the college models, engaging in applied research endeavours with community
partners may mean a significant and likely unrecoverable investment in the project by the institution. “Every time we get a grant… it is in fact costing us money because of the in-kind contributions that are required… so we have to make decisions organizationally [about] whether or not we can support that” (SL10).

The reality for the colleges and the college managers, however, is that while a faculty member may be provided time to conduct research for a semester by being off-loaded a course or two, the teaching hours still have to be covered, which is often done through part-time hires, all of which also costs money. In addition, time allocated for research activities is often just for a semester, when, in fact, the research process and project may take much longer. The pattern since the Colleges of Applied Arts and Technology Act of 2002 has been that a person engaged in applied research, however it manifested itself, would have a different teaching load than one who wasn’t. “The short answer to how we were going to accommodate time for research was through work load release in terms of teaching hours” (SL7), an answer that did not necessarily sit well with faculty because of the lack of clarity about how the research culture was going to be introduced, and how it was going to be decided who, in any given college, was going to be allowed off-loaded time to conduct applied research.

This idea that permission to conduct research, and the time needed to conduct this research, would have to be handled on an individual basis was a common theme in the interview responses. Some thought was given to allowing faculty time to conduct applied research when the colleges were given the go-ahead to offer applied degrees and to do applied research, “but no kind of formula [was provided]…. My understanding is that it's all case-by-case” (SL2).

The fact that colleges in Ontario are funded as teaching institutions, and the difficulties that creates in terms of releasing professors to do research, was identified by several respondents
as a major problem when it came to releasing faculty to take on research projects outside the classroom. The continuing difficulty is that the Collective Agreement as it is currently structured does not recognize faculty release time for applied research activities, so the identified need is that time for applied research activities still needs to be included in the Collective Agreement negotiations as they relate to the SWF.

One faculty member who has been engaged in a number of applied research projects, both her own and with her students, at College C1, points to the haphazard way time is allocated for research activities, and the inadequacies of the amount of time allocated. Being expected to complete the research design, gather the necessary letters of informed consent, go through the research ethics review process, conduct the research and write up the findings, all on a part-time basis within the approximately three to six hours a week of course off-loading, while also teaching, and all within a semester or two, is simply not possible. “The biggest barrier is the short amount of time you have in order to do what you are expected to do for a research project” (Rosenkrantz, 2012a).

For faculty who have a desire to engage in independent applied research endeavours, the reality is that there simply isn’t enough time, even with course off-loading and some release from other duties. By the time a research proposal has been designed, written, the REB approvals granted, funding applied for and letters of informed consent written, sent and collected, the time allocation during a semester is likely used up before the research itself has gotten off the ground. Then, once the project is completed, there are presentations at conferences and possible publications to be considered, and separate time has to be negotiated for all these functions as well.
I feel that the perception is that if [release time] is on your SWF, you should be happy you got it… Meanwhile all those things that go into a research project are still going on… I just feel that it could be a more streamlined process with clear rules about what you get in terms of release time depending on the kind of project… this would all bring some consistency to the process. Currently I feel that it's all in the negotiated process because it's all coming down to the number of hours you're teaching, and I think the faculty are pushing back on that, and the administration's pushing forward. It's a constant battle.

(Rosenkrantz, 2012a)

The challenges arise when teaching responsibilities run up against the growing emphasis and expectation by college leadership that applied research be done either as part of a program, or as an individual teacher activity. Yet the hands-on and applied nature of the learning experience in colleges means that the time required for faculty to be present in the classroom cannot be compromised (ACCC 2011 Feb., p. 20).

The notion that the method that has evolved is one requiring permission to conduct applied research, and the time needed to conduct this research, has to be negotiated on an individual basis, is a common theme in the interview responses, as is the observation that a college that has to approach research in this fashion doesn’t have a true research culture, or the capability to take on larger, potentially more lucrative, longitudinal applied research projects. In other words, an institution that has not resolved the issue of how to allocate time for applied research in a systematic, comprehensive manner will have considerable trouble moving along the continuum of the Madder (2005) typology to a fully integrated research institution.

The lack of assigned time recognized by the SWF is identified by study respondents for this thesis and a number of other researchers in this area who identify this as a central issue
needing resolution as this process of the evolving Ontario colleges’ mandate continues. The literature refers to this lack of recognized time as one of the greatest barriers to building a research culture at Ontario’s colleges (Catalfamo, 2010; Clark, Moran, Skolnik, & Trick, 2009; Fisher, 2008; Fisher, 2009; Jurmain & Madder, 2011; Laden, 2005; Madder, 2005; NSERC, 2007; Skolnik, 1995; Skolnik, 2002).

Generally speaking, the province-wide Collective Agreement limits college full-time faculty to 44 hours of work per week (Ontario Colleges of Applied Arts and Technology, p. 9), including a maximum of 18 hours of instruction per week for a 36 week academic year. It is, however, difficult for a college to assign a full 18 hours to any faculty member because the workload formula requires time to be set aside for class preparation, grading assignments, attending meetings, and other assigned activities, plus a minimum of six hours per week for out-of-class assistance to individual students and for other administrative tasks. These other duties as assigned hours are what managers will often target as possible – and already paid for – applied research time for professors.

Because the Collective Agreement does not occur at the institutional level, but on a provincial one, a novice research and innovation college as defined by Madder (2005) is bound by the same SWF restrictions as a fully integrated research and innovation college. Although study respondents noted that in early discussions about what the required research elements of the applied degrees in Ontario colleges might be, there was thought of assigning time to research and teaching in the baccalaureate programs in terms of how that time could be recognized through the SWF, but “To my knowledge there is no standardization of that; it occurred at a college by college [which resulted in] a lot of negotiation with faculty members” (SL7).
It should be noted that research activities in the colleges may also involve providing release time for non-faculty researchers. “Research funding programs also need to see the value of undergraduate students who are ‘the next generation of social and business innovators and entrepreneurs’” (Jurmain & Madder, 2011, p. 21). Colleges may not have graduate and undergraduate categories of students, but there are counselling staff and other categories of employees in the colleges who may also be interested in conducting applied research, and who would not be restricted by the current time for applied research limitations of the SWF.

**Finding 2:** *The effects of a real or perceived lack of planning by college and government leaders for the introduction of applied degrees and applied research into the province’s colleges resulted in an inconsistent approach to allocating time to college faculty for applied research activities.*

As the literature shows, there has historically been little planning in Ontario with respect to developing policies giving a clear direction to Ontario’s colleges and universities in terms of how they should develop their relationships with one another (Jones, 2004). “The need to clarify the relationship between the two sectors (especially issues of credit recognition and student mobility) was viewed as a major policy issue (Vision 2000, 1990)” (Jones, 2004, p. 43). This lack of planning is nothing new, and can be traced back to the early days of the establishment of the colleges in Ontario which were created in large part as a response to societal economic demands for graduates with vocational skills. Notwithstanding the period of expansion in the province’s post-secondary sector in the 1960s, policies to create formal relationships among the “components of the postsecondary education galaxy” were not often entertained (Dennison, 1995, p. 123), an omission which has dogged the sector ever since and continues to create debate among academics and policy makers, and obstacles for students seeking degree completion pathways. The evolution of the complexities of these myriad pathways between colleges and
universities in the province of Ontario has a long history (Skolnik, 2003; Dennison & Gallagher, 1986) and must appear completely bizarre and byzantine to the students of 2012 trying to navigate them.

Currently, colleges in Ontario do not set aside any time in the SWF for faculty to do research, primarily because it was assumed that in a vocationally focused institution there would be no theory-based research, which is how universities understand research to be conducted. Professors in the colleges would concentrate on teaching students vocational skills so that graduates could find work, and that was essentially it. “Most or all of the colleges were intended to concentrate on technical education” (Skolnik, 2010, p. 1). The idea that colleges in Ontario might someday offer university transfer credits or themselves grant degrees was not something that was part of the original plan for Ontario colleges. The Degree Granting Act of 1983 (Government of Ontario, 1990), restricted the authority to grant degrees to only those empowered to do so by an act of the provincial legislature. “The act of the legislature which established the CAATs does not give them the authority to grant a degree of any kind… to obtain such an amendment it would be necessary to overcome some strongly engrained habits and attitudes…” (Skolnik, 1995, p. 1).

Although this study has focused on the college faculty experience, it is worth noting that the literature suggests that there is an expectation that college students, especially in degree programs, will participate in applied research led by a professor (Catalfamo, 2010), and that this expectation is a fairly new concept for Ontario, and just as the professors face time constraints in their efforts to fit research time into their regular work, so do students face similar constraints trying to fit research into their course work (Faust Zúñiga, 2009).
Polytechnics Canada (2011) is one organization that encourages and supports the engagement of students in applied research: “More needs to be done to make these students aware that Canadian research-intensive colleges provide first-class education and pathways to employment as well as advanced education” (para. 10). The research involving students conducted by Faust Zúñiga (2009) shows – much as does Fisher’s (2008) research on faculty – that “…students did see participation as beneficial to them for learning, gaining real world experience, communication skills, and improving their creativity. And, quite importantly, the students reported that these benefits would not have been attained in the regular classroom” (p. 13).

Some attempts were made at coming up with coherent plans for the development of the Ontario colleges, especially with respect to their relationships with the universities, but for a variety of reasons, not the least of which was the universities recalcitrance to work in concert with the colleges, the plans did not bear much fruit.

It wasn’t until [the] Vision 2000 [report] around [1990] where at a table that college presidents and university presidents and business and labour etc., [were present] that the notion of lifelong learning where college students and university students alike could actually be able to mix and match the resources of both kinds of institutions to get not only diplomas but degrees. (SL4)

There were many forms of expression regarding the nature of this ambition for planned collaboration, including the creation of a virtual university that were in the Vision 2000 Report. Without the willingness of the universities to offer their degree granting status, however, or to offer degree completion pathways to college students so that students at colleges taking diplomas and degrees could get credit for them toward a university degree or perhaps even get into a
master’s program in some related field, the planning ambition of the Vision 2000 document could not succeed.

The efforts, and to some degree the difficulties, of the Vision 2000 document, and other subsequent attempts at designing province-wide post-secondary agreements, including the Pitman Report and the Port Hope Accord, to get cooperation among the provincial colleges and universities, including the establishment of a virtual university, are detailed elsewhere (Boggs & Trick, 2009; Skolnik, 1995; Skolnik, 2010a; Skolnik & Jones, 1993;), but can be summed up as a series of well-intentioned and carefully thought out recommendations, which have not had a serious nor long-lasting effect on planning for the evolution of the colleges in Ontario, certainly not in the area of encouraging a research culture in the colleges by establishing clearly defined applied degree development expectations and applied research policies and regulations. As far as there having been an anticipation that faculty who were going to teach in the applied degree programs would be supported with time and resources to earn the necessary qualifications, this was seen as being more of a university model than one appropriate for college professors, and not enough attention was paid to this possibility. “This is another one of the problems the colleges have always faced because [the government has] constantly underplayed the breadth courses that are required to add to any real degree” (SL8).

As a result, colleges tend to hire people with the necessary advanced academic credentials to teach in the degree programs from outside the institution, and do not have special supports in place for their own professors who might want to earn the advanced academic credentials beyond the normal supports for academic advancement through professional development arrangements, which vary from institution to institution. The Vision 2000 document, the Pitman recommendations of 1993, the Pan-Canadian Protocol of 1995, the Port
Hope Accord of 1999 and a number of other efforts also did not enjoy much success in the area of improving degree pathway arrangements with the province’s universities. “Meanwhile, student demand for combined diploma-degree programs appears to be increasing” (Boggs & Trick, 2009, p. 1).

Another possible consequence of the lack of foresight in the planning for applied degrees and applied research in the colleges is that if colleges continue on the road of offering baccalaureate degrees, and possibly eventually post-graduate degrees, as, for instance Humber College (2012) is contemplating, there is a possibility that a schism may develop – and may, in fact, already be in the early stages of developing – between faculty holding advanced degrees, and faculty who do not, in the colleges offering degrees. Introducing applied degrees into institutions that are traditionally teaching institutions could have as a primary disadvantage the creation of a second and third-tier faculty, with the attendant perceived stigma attached to not holding advanced degrees, because of the value placed on applied research activities and advanced academic standing (Vajoczki, Fenton, Menard, & Pollon, 2011). “…those who focus solely on teaching may be considered less worthy and less valuable to the institution, while those who do both research and teaching may be considered more worthy and more valuable” (p. 6).

From the point of view of college students and faculty, the current emphasis on introducing or enhancing applied research activities in Ontario colleges may not, on the surface, appear that much different from the work that has been going on in the vocational programs for years. Given the lack of a general agreement among colleges and within colleges on what applied research is, it is not surprising that students and faculty may have some difficulty understanding what it is as well.
An example of how this definitional uncertainty has manifested itself is seen in a College Quarterly article from 2006, in which the authors point out that, “Despite the fact that Ontario’s CAATs have a mission that focuses on teaching, many college faculty have been engaged in research and scholarly activities” (Lang & Gopaul, 2006, para. 3). Still wrestling with what research activity in Ontario colleges was going to look like following the Post-secondary Education Choice and Excellence Act of 2000, it is not surprising that researchers and writers would use the familiar terminology of traditional research institutions and talk about “research” and “scholarly activity” in reference to work done by faculty and students at the college level, when, as time would show, what was really happening was a refining of applied research and innovation activities that were, arguably, already underway in an embryonic fashion in Ontario college classrooms before 2000 in the form of in-class assignments, end-of-term group projects, and co-op learning experiences.

Where the colleges find themselves now on this classification journey is trying to untangle and redefine words and definitions which have traditionally belonged to the language of universities, particularly research universities.

Now that one half of Ontario colleges are actively delivering four year applied baccalaureate degrees, and that one of those colleges has made a public pronouncement that it intends to become a teaching university within seven years” (Brown, 2012), it is not unreasonable that some colleges should want to offer applied post-graduate degrees, or indeed that some colleges will take a closer look at their three-year advanced diplomas to consider if they might not be converted to three-year baccalaureate degrees, a recommendation considered by the Minister of Training, Colleges and Universities, Glen Murray, in an effort to align Ontario with models in other jurisdictions, primarily the United States and Europe (Brown, 2012a). This
is a recommendation taken to heart by at least one Ontario college, Humber College (2012), which has stated its determination to “Continue to develop and implement new industry-focused programs in all credentials, including three-year degrees and Master’s degrees in areas with demonstrated student/employer demand and which meet rigorous quality standards” (p. 1). The recommendation is not without other supporters:

Two factors make this a good time to consider the adoption of three-year baccalaureate degrees in Ontario colleges. One factor is the increasing prominence of the three-year baccalaureate degree in some countries and the increasingly frequent calls to make it more prominent in other countries… The other factor that makes it timely to consider the adoption of three-year baccalaureate degrees in the colleges is growing concern about the suitability in the 21st century of a framework of academic credentials in the colleges that was established nearly a half century ago. (Skolnik, 2012a, p.2)

The three-year advanced diploma is not necessarily readily recognized outside the Canadian context, whereas the three-year degree is. If the three year baccalaureate is indeed vanishing from the Ontario university sector, there might be an opportunity for the Ontario colleges to step in and fill the gap. The recommendations of the Bologna Accord, however, to foster three-year baccalaureates in European universities (Canada, 2009), and a discussion paper tabled in the Ontario Legislature by MTCU in February, 2012 (Henighan, 2012), that recommends that Ontario compress the four-year degree to three years, would suggest that if colleges are to take advantage of the three-year baccalaureate niche they should move quickly. Considering the somewhat glacial progress of Ontario colleges when it came to developing applied degree offerings – almost a decade in some cases, although that may in part have been due to the complexities of the application process – the resistance of Ontario’s universities to
these applied degrees, and the expensive and rather lengthy approval process of the applied degree application procedure as dictated by PEQAB, it seems unlikely that Ontario colleges will be able to step nimbly into what would appear to be a real opportunity to help their students, themselves and the universities accommodate the demand there may be for these three-year degrees. This is especially true if progress is made in the European Credit Transfer concept in North America (Commission, 2004), which could make it more efficient and economical for students to transfer among participating institutions as they complete their degree pathways.

The time and expense involved in getting an applied degree approved by PEQAB are considerable. Applications for Ministerial consent are typically many hundreds of pages in length, and the entire process from application to consent can take many months or longer. Applicants must pay an application fee of $5,000 per program, and an assessment fee of between “$5,000 and $15,000” (Skolnik, 2012a, p. 8). This process, if applied to the converting of some 600 advanced diploma programs into three-year baccalaureates, could be on the order of 10 million dollars in PEQAB fees, a cost that would be prohibitive, to say the least (p. 8).

It would seem, then, that the apparent lack of planning that plagued the colleges once the Acts had been introduced is still making it difficult to plan for what may, or may not, come next in terms of the future of advanced diploma and applied degrees offerings.

**Finding 3. Some or all of the applied research conducted in Ontario colleges should be a standard component of curriculum so that faculty applied research activities include and benefit students.**

From the point of view of a college teacher engaged in a variety of independent research projects, the benefits of having applied research embedded in curriculum are manifold. Curriculum-based research could engage both the students and the faculty in the process, and
enhance the student learning experience in both the degree and diploma programs. In addition, by engaging the students and the research topic, faculty will be encouraged to stay current in their field, which, although this will not necessarily make them better teachers, will help them have current knowledge in their applied fields of expertise where knowledge is likely advancing at a fairly rapid pace. “So when I go into the classroom… I will be familiar with… the newest research out there, and what is happening, and in teaching [my] courses I can use real life examples” (Rosenkrantz, 2012a).

There [are] a great many students who signed up for these research projects that I have had a chance to mentor who have been extremely grateful, and said: ‘wow, this is what I didn't get when I did my university, I didn't get this mentorship in my university undergraduate thesis… it has change my perception of the field, and has allowed me to understand what research is. (Rosenkrantz, 2012a)

One study respondent suggested that if faculty want to pursue curiosity-driven, individual research, they can do it as part of their graduate studies, or on their own time, “but we as an institution are not funded [for research projects], and we have been very clear that any of our research initiatives that we undertake must be directly related to curriculum, and must engage, at some level, students in the research endeavour” (SL9). This sentiment that applied research projects belonged in curriculum was a common one in the interviewee responses, the essence of the responses being that regardless of whether or not time and funding could be made available for faculty to engage in their own applied research projects, the whole point of having applied research projects in the college was to enhance the students’ learning experience and prepare them for the working world with an up-to-date skill set.
There was little enthusiasm among current senior leaders in the four colleges selected for this study to have faculty engage in their own applied research endeavours unless it was on their own time or as part of professional development experiences such as earning advanced degrees or professional certification. Ultimately, most of the respondents indicated that although the constraints of the SWF is primarily what determines how faculty is given time for research, the focus of faculty work continues to be, and will continue to be, teaching and learning. If applied research is part of the teaching and learning experience, then it is part of the professor’s job. “That is why we have [applied research] built into the curriculum… We are not funding individual faculty research projects just because they are interested in doing that - that is not our college mandate” (SL9).

As Fisher (2009b) has noted, a central purpose of having research-based projects in curriculum is to develop the kind of highly skilled people who have the necessary qualifications to contribute to the economy, but applied research without instruction in how to do applied research will not be of much use to the students in the long run, and as one respondent in this study pointed out, what a college might consider applied research might not be what an employer considers applied research: “I think you are sending the students a bad message [if] you’re telling them that something is research that is not research – how will they know it when they see it?” (SL6). In other words, unless faculty receive the necessary training to conduct applied research, and in turn teach the students how to conduct proper applied research, what the students may be experiencing in their programs may not be that far removed from the less rigorous capstone and team projects already well-established in college diploma programs. “I think people have to be careful that they don’t put labels on things for the wrong reasons” (SL6).
That college students are increasingly engaging in applied research projects is evidenced by an ACCC research report (ACCC, 2012b). The report talks about the benefit to faculty of engaging in applied research: “Faculty increase collaboration with SMEs and community partners and improve teaching and learning approaches. This enables them to remain current in their areas of expertise. Engagement in research helps retain faculty” (p. 11). The report does not discuss how engaging in research helps retain faculty. The report does, however, comment on the benefit to students of engaging in applied research: “…the most significant impact on students is an enhanced and more relevant learning experience that leads to the attainment of advanced skills, including soft skills such as teamwork, critical thinking and problem solving. Students are more engaged in their studies resulting in improved motivation and persistence” (p. 12).

According to this report 86 percent of institutions reported students engaged in applied research gained work experience with industry and community employers, which ultimately helped graduates land jobs. “Involvement in research provides students with experience in research-based practices such as research protocols, scientific methods and research ethics” (p. 12).

Although it could be argued that the positive employment outcomes that resulted from the students’ work experience gained with industry and community employers could have come from co-op placements, internships and capstone project assignments, rather than through applied research, the fact that there are broad-reaching benefits to having greater emphasis on involving both students and faculty in applied research in the colleges seems supported by the research behind the report. Certainly, entering into the research enterprise has an obvious benefit to students as the experience introduces facilities, equipment installations, and applied research procedures to students. “These [applied research experiences] were deemed a significant benefit in that they provided students with otherwise unobtainable experiences” (Wilson, 2008, p. 124).
Current senior leaders in the colleges involved in this study agreed that the teaching and learning that goes on in the classroom is of the greatest value to the students, supporting the observation by Vajoczki et al. (2011) that faculty who teach but do not do research are considered curriculum experts who engage in the scholarship of teaching and learning, and that “While students often do not recognize the difference in title, they do recognize good teaching” (p 34). Yet the applied research conducted by faculty in the colleges will help keep them up-to-date in their particular areas of expertise, and can be of great benefit to the students, provided they are able to participate in the applied research process. Add to this the growing reality of credentialing increasingly becoming a key motivator for some students to seek higher education, and colleges may well be presenting a very attractive option for potential students who view vocational higher education as a way of landing interesting and well-paying jobs, or possibly as a step along the degree completion pathway.

The challenges related to funding of research activities were also mentioned by some of the study respondents, with the suggestion being that if the MTCU is not going to fund the applied research, there is little likelihood that the community and business partners will be able to contribute substantially to college-based applied research in the near future. The best way to make sure a culture of research is created in the colleges, and the best way to get faculty and students working on applied research projects together, is by having the applied research embedded in the curriculum. In that way faculty and students can be involved in research in a long-term and sustainable way, and there will not be as much of a need for large-scale extra funding to support the research activities. “Capstone projects and applied research projects are a part of the curriculum, and so the faculty work is related to curriculum for applied research and that’s built into the cost of the program” (SL10).
The lack of funding for research, however, does affect the number of students who are able to engage in curriculum-based research, largely because of class sizes in colleges. As class sizes continue to grow, it will become increasingly difficult to give all the students the same level of applied research experience. With groups of 35 or more in a class – and growing, as some colleges try to keep financially afloat by increasing class sizes - there is a limit to how much a professor can work with small groups of students on applied research projects, and how much the individuals in a class will benefit from being in a large project presentation group. “This is a limitation that has nothing to do with philosophy in any respect, but more to do with just [funding] limitations” (SL8).

Only one respondent felt that applied research should not necessarily be a part of the curriculum, with the exception of in applied degrees where it is an expectation. But this respondent also felt that the use of the term “applied research” in college programs is a misnomer. The argument made was that there are many colleges with long histories of good quality programming and curriculum development at the certificate, diploma, and advanced diploma levels, and that there is no reason why these colleges should feel they need to become involved in applied research in order to benefit the students. “Students not engaged in applied research are benefitting from well-designed curriculum with plenty of student projects in well-resourced institutions taught by good faculty, and whether or not there is research involved with that does not matter in terms of the quality of the students’ educational experience” (SL7).

**Finding 4: The working relationship between Ontario colleges and universities has hampered the evolution of applied degrees, faculty time for applied research, and degree pathways for students in the Ontario colleges.**
While it is not within the scope of this study to re-examine the history that has led the colleges and universities in Ontario to this moment in time, it is worth reflecting on an observation made by Dennison and Gallagher (1986) who, while writing about the roots of the development of a non-university post-secondary education sector in Ontario, refers to the publication of a report called Post-secondary Education in Ontario 1962 – 1970, which was issued by the Committee of Presidents of Provincially Assisted Universities and which, after a number of revisions, proposed the creation of a Colleges of Technology and Applied Arts model.

The thrust of the report reflected the university bias of its authors. The need to preserve and protect the university system underlay most of their recommendations. The university presidents viewed with justifiable alarm the pressure on their institutions to admit more students who might lack the intellectual competencies to benefit from the university experience. (p. 33)

The sentiment was not an isolated one. For example, Bercuson, Bothwell and Granatstein, in their book Petrified Campus: the Crisis in Canadian Universities, published in 1997, denounced the inclusion of "dullards" in university lecture halls due to enrolment-based funding of universities. This process, they wrote, had “clogged the university system with classrooms full of students who are ‘not intellectually suited to handle the university experience and challenge’” (Renaud, 2000, p. 5).

In effect, the universities wanted to keep out the high school graduates who, it was felt, couldn’t make the grade, so to speak, at the university level, and move them instead into vocational colleges. To keep them from coming to the already over-crowded universities after completing college, they were strongly opposed to the notion of university equivalent programmes in the colleges. “A further expansion of university facilities could bring 90 percent
of Ontario’s population within 25 miles of a university, and so university-transfer courses in the colleges were unnecessary and indefensible… (Dennison & Gallagher, 1986, p. 34).

Despite many reports, committees and other initiatives, the situation is such that in 2012, almost 50 years after the creation of the colleges, and 26 years after Dennison and Gallagher made their observation about the nascent relationship between the new colleges and the provinces’ universities, a research subject interviewed for this study would express frustration with the university/college relationship status quo by observing that “The universities have been… not very enabling of lifelong learning in this regard… and I think we have what is the best of the difficult situation that has been made in terms of college students being able to have access to these [university] programs” (SL4).

In spite of what can be seen as almost a half century of foot-dragging on the part of the universities and succeeding Ontario governments in terms of recognizing college credentials as having the potential for credit transfer to universities, some of the interview subjects pointed to significant and well-developed arrangements between some colleges and their neighbouring universities, noting that students in those colleges are able to complete two years of study at the college, and complete the subsequent two years at the university for a combined diploma/degree granted in the name of the university – a model recognizable as the junior college to university arrangement that exists in the United States (Skolnik, 2012b).

Notwithstanding these specific arrangements, the overall tenor of the observations by the study interviewees, however, in terms of how the relationships between Ontario colleges and universities will likely evolve in the near future was summed up by one respondent:

You will have all kinds of lobbying [of the Ontario government] from the universities to either maintain the status quo or push down the colleges; you will have a similar initiative
within the colleges to differentiate themselves more and more along Polytechnic lines…

(SL7)

In other words, a resolution to the difficulties posed by the province’s unique binary system of post-secondary education does not seem much closer to a workable resolution than it was at the time of the Vision 2000 document, the Pitman report, the Port Hope Accord and a number of other, subsequent reports.

**Conclusions and Recommendations**

The following section will discuss the conclusions drawn from this study, and suggest recommendations for implementing the conclusions. The study found that while there were differences among the four participating colleges in terms of the evolution of their research cultures along the continuum of the Madder (2005) typology, and differences in the degrees to which faculty engaged in applied research activities, there were no significant differences among the colleges in how faculty time for applied research activities is assigned. Until the issue of how to accommodate faculty time for applied research activities on an institutional policy level is addressed, Ontario colleges will continue to struggle with growing a robust, fully integrated research culture.

The first conclusion is that as long as the Collective Agreement governing the allotment of time for faculty activities through the SWF is in place in its current iteration, there is simply no time specifically allocated to faculty to engage in applied research activities outside the classroom. Currently, the main method used to access such time is through off-loading courses from a professor’s SWF assignments, or assigning other SWF time allocations to applied research activities. Faculty time paid for by a small NSERC grant or equally small internal institutional fund allocation grants, or faculty secondments to a specific research project or to act
in a support capacity to an applied research office within a college also offer applied research time. These internal, institutional grants may have some mechanisms built into them that will allow for some flexibility in terms of how the grant will affect overall workload for the faculty member, but are not likely to be large enough to offset the associated costs of taking the faculty out of the classroom to be replaced by another professor. Other forms of funding for faculty release time may come from external commercial partners who are part of a particular applied research project, and in one case, a college in this study had hired a faculty member whose responsibility was primarily to oversee an applied research project, and whose ancillary responsibility was to teach, but who also received some applied research assistance from program technologists. By far, the most common avenue for faculty to receive time for applied research activities is by the individual negotiations for time allocation between faculty members and managers.

The second conclusion follows from the first in that the applied research activities currently being conducted in the colleges at both the diploma and degree levels at what appears to be increasingly greater levels of frequency and complexity, and with increasing levels of engagement from the commercial and corporate sectors, will be best suited as curriculum based, program specific activities that fully engage the students as well as the faculty in the applied research process. This researcher had anticipated that encouraging faculty to engage in applied research activities outside the classroom would have been, if not a strategic direction for current college senior leaders, then at least a point of significant focus for Ontario colleges. As the data demonstrated, however, this was not the case as the general sentiment was that the central responsibility of college faculty is to teach, and that applied research activities are best housed in
curriculum to the benefit of the students, more than with individual faculty engaged in their own applied research endeavours.

Even though colleges are increasingly hiring faculty with advanced degrees to teach at all levels of the institutions, the colleges remain primarily vocationally focused institutions whose faculty, in order to serve the needs of the students, have extensive experience in their professions as the preferred criteria for being hired, rather than being hired on the basis of their advanced academic degrees and research experience. Theoretical research experience and a track record of publications in peer-reviewed academic publications remain, for the time being at least, in the list of requirements for university faculty, and are not seen as being applicable to Ontario college faculty. The faculty needed to help design applied research projects can be – and in some cases already are – seconded or hired into research support areas of the colleges, and these areas are seen as the best avenues for faculty to get assistance with applied research project design, grant applications, research ethics boards’ procedures and related administrative activities associated with the applied research process.

Until a rationale can be found for having college faculty conduct applied research projects that take them away from their teaching responsibilities for extended periods of time, and the SWF – and associated funding – is correspondingly altered to accommodate these changes, applied research activities are best accommodated in the curriculum where it will also best serve the students. If applied research activities are embedded in the curriculum, SWF time can be allocated to support those activities.

There is perhaps a slight irony in that the one area of a college with the most faculty who have had university-specific, basic research experience is the school that is home to the Arts and Humanities – or Liberal Studies - where the general education and applied degree breadth
courses are primarily located. The opportunities for college-specific applied research opportunities in the Arts and Humanities area are very limited, leaving professors with master’s and PhD degrees who work in these area without many opportunities or encouragements to engage in research activities outside their curriculum.

The recommendation for addressing the points made by the first two conclusions is that applied research activities in the Ontario colleges should be incorporated into curriculum where students will benefit from the experience. Until the issue of time for research is addressed in the Collective Agreement, time for individual, faculty-driven research projects will have to continue to be primarily handled on an *ad hoc* basis through negotiations between faculty members and their managers.

The third conclusion is that the development of a more robust, fully integrated applied research culture in the colleges will require more careful and comprehensive planning by the colleges, either by themselves or in concert with agencies of the MTCU, than has been experienced to date. Making the change from being strictly vocational higher education institutions to being more academic, applied research oriented, and in some cases degree-granting institutions that require faculty to have advanced degrees, is one that is changing the nature and purpose of the colleges, causing them to move away from their original vocational education mandate to one that is as yet not clearly defined nor entirely understood.

This “academic drift” (Jones, McCarney, & Skolnik, 2005; Neave, 1979) – or shift from a vocational institutional focus to one that includes more academically focused applied research and applied degrees - could be described as a force that is shifting some Ontario colleges away from the culture adherent to vocational institutions to an institutional cultural area that falls somewhere between exclusively vocationally focused institutions and the historically well-
established research cultures of universities. The applied degrees now being offered by Ontario’s colleges have been built on the expertise of faculty and the curricular foundations of the colleges, and on the ethos, traditions and values of the colleges that are rooted in the model of experiential learning (Skolnik, 2013).

The corporate management structure, and the drift toward a greater emphasis on more academic course content, taught by professors with more advanced degrees than specific vocational experience, will not come without challenges. The recommendation is that in order to avoid repeating the approach to a developing institutional cultural shift that appears to have entailed little planning in terms of how cultural shifts in the colleges were to be orchestrated and accommodated, any increased emphasis on enhancing the academic culture, including the introduction of applied graduate studies Ontario college culture, experience better planning in the future.

The evolving research culture in many Ontario colleges is attended by concerns about academic drift, mandate changes, degree status, tenure, and academic freedom to conduct research. The often unspoken question that lurks around the edges of this evolution has to do with how many of Ontario’s colleges are intent on becoming universities or university colleges, and if and when that happens, will the people the colleges were originally designed to serve still be able to pursue vocationally focused, post-secondary education? Sheridan College, for instance, has already made a public statement that it will become a university by 2019 (Brown, 2012), and Humber College (2012) has stated its intention to offer master’s degrees in the near future.

The primacy of quality teaching in the colleges was mentioned by several of the interview respondents who made it clear that while the opportunities for Ontario colleges to
develop and enhance applied research activities, these activities were not to be engaged and expanded at the cost of quality teaching. The importance of enhancing the student experience in colleges by developing applied research activities in curriculum was described as an important benefit for students and for faculty who engaged with the students in developing applied research projects, but there was little appetite for having faculty engage in applied research projects on their own for reasons of their own interest and career development ambitions. The interview respondents felt that applied research projects that were primarily faculty-centric could be engaged during sabbaticals, as part of earning advanced degrees, or on holidays, but by and large, time was not to be taken away from students in order to accommodate individual faculty research endeavours.

Although the Collective Agreement SWF does not specifically accommodate faculty time for applied research activities outside the curriculum, there was little interest from the interview respondents in encouraging a change in the Collective Agreement to make those accommodations, at least not yet. For those colleges that decide to develop graduate degrees, and who will need to attract faculty with advanced academic degrees and research experience, that may need to change as it seems unlikely that release time will be sufficient to allow for the kind of detailed and robust research projects faculty will have to engage in when teaching at the graduate level, but even then an argument could be made that graduate level applied research projects should also involve students, and be a part of the curriculum. As Madder (2005) has noted, “Project based delivery has provided the freedom for colleges/institutes to conduct innovation activities supervised by faculty but primarily performed by students in close cooperation with industry” (p. 31).
In order to avoid the appearance, if not the reality, of a continuous, haphazard approach to determining the future of applied research in the colleges, clearly articulated strategic plans describing the direction and progression of applied research cultures in the province’s colleges could do much to give stakeholders a better sense of what the future holds for Ontario’s colleges and the services they offer their students. As things stand, barriers to the evolution of applied research activities in the colleges are also barriers to the realization of colleges as potentially important contributors to research and innovation – and commercialization – activities in the economic community.

Pursuing closer working relations with the province’s universities may be of value to Ontario’s colleges as they develop and expand their research cultures, but the history of unsuccessful attempts at creating more harmonious college/university relations in the Ontario post-secondary system would seem to argue against that. This study has considered the literature related to the post-secondary education system in Norway, for instance, where an equally challenging series of institutional difficulties were resolved into a national system of higher education that seems remarkably rational, well-designed and collaborative.

It is not, of course, necessary to go as far afield as Scandinavia for examples of well-structured and functional post-secondary systems. In some Canadian jurisdictions the efforts of government legislation brought better order to the post-secondary systems than the hands-off approach of successive Ontario governments. British Columbia, Alberta and Quebec offer examples of college/university relations where cooperation and successful articulation among colleges and universities have been established, and the literature is replete with accounts of these well-established coordination efforts (Skolnik & Jones, 1993; Skolnik, 1995). The United States also offers very effective models of community college and university cooperation for
degree pathways, perhaps especially in California which has one of the longest established transfer systems, and the most successful in terms of the number of university degree recipients who had their post-secondary education beginnings at a college (Clark, Trick, & Van Loon, 2011).

This process of developing better relations with the provinces’ universities, especially in the area of credit transfer, will not, however, be easy, as indicated in a report by the Ontario Confederation of University Faculty Associations (2012) that points out that, “Unlike the higher education systems in California or Alberta, Ontario’s colleges are not designed to prepare students for direct transfer into university programs” (p. 12).

In addition, and possibly because there was a lack of overall planning for the introduction of both applied research activities and applied degrees into the Ontario colleges as identified by the study respondents and the literature in this study leading up to and following the introduction of the Post-secondary Education Choice and Excellence Act of 2000 and the Colleges of Applied Arts and Technology Act of 2002, Ontario colleges, like the provincial universities, have begun a process of institutional differentiation. Encouraged in this differentiation exercise by the Ontario Government through the MTCU, each college and university in the province has been required to identify three goals that set them apart from their sister institutions (Brown, 2012a). Whether or not the sweeping changes the Ministry is proposing in terms of – once again – suggesting that Ontario create a virtual university, and that universities offer three-year degrees in order to fall in line with the model of other jurisdictions, and to help facilitate credit transfer, remains to be seen, but in light of the amount of time that has passed since the creation of the Ontario colleges, and the lack of institutional cooperation between colleges and universities since
the inception of the system of colleges, it does seems highly unlikely that a unified system of tertiary education for the province can be established now.

The best that can likely be hoped for is a new and more transparent pattern of credit transferability and institutional cooperation in order to aid the students in their career pathways, and ultimately encourage them to seek employment within the province.

Looking to government for a clear direction in terms of expressing support, or indeed requiring, closer cooperation between the college and university sectors does not seem to be a practical expectation. While all three major parties of the Ontario government have, at one time or another, expressed support for college and university cooperation, “governments historically have not been willing to offer enhanced operating funding for the cost of collaborative programs, [and they] have also been reluctant to introduce special legislation or regulation to facilitate collaboration” (Boggs & Trick, 2009, p. 10). The reason given for this reluctance has been based on the idea that any special legislation or regulation to facilitate collaboration might create an “unwarranted policy bias favouring collaboration over single-institution programs” (Boggs & Trick, 2009, p. 10).

In spite of the efforts of groups such as the College University Consortium Council (CUCC), established in 1996, to close the gap between the binary systems in Ontario, their work has met with limited success. The establishment of the Ontario Council on Articulation and Transfer (ONCAT) early in 2012 is an attempt, in part, to help students map out a program pathway through the post-secondary systems, and may offer some new avenues, but the central problem of what several interview subjects and a considerable amount of the literature refers to as the recalcitrance of the universities to take college credits into consideration when evaluating a student’s credit transfer application, even to the point of not recognizing the colleges degrees in
applied fields of study as legitimate degrees, does nothing to lower the barriers to transferability for the students. Unless these hindrances are addressed in a constructive fashion, it seems inevitable that the colleges will, sooner rather than later, initiate applied graduate degrees of their own in order to make the option of graduate degrees available to their students, and so keep them in the province, instead of having them leave for other jurisdictions in order to study and, possibly, work abroad.

There is, however, more at stake here than student transfer success. The transfer function also serves to establish the academic validity and credibility of the transferring institution as a legitimate partner in providing education for the transfer student. “But, in reality… Barriers exist, which have more to do with differences (real or perceived) in academic cultures and attitudes between... [institutions] ... and faculty than anything else” (Susskind, 1996, p. 5).

Because the academic cultures of colleges and universities in Ontario have been allowed to evolve in relative isolation for almost 50 years, the likelihood of now creating a unified and transparent approach to credit transfer across these institutions seems remote. The historical opposition, especially by universities, to the creation of a system-wide set of approaches to facilitate credit recognition has left the tertiary education system in the province with no consistent, over-arching approach to making the transition from the status quo to the use of a coherent and transparent system-wide credit transfer system.

What seems more likely is that Ontario colleges will continue to evolve as academic institutions with a vocational focus to the point where, as in jurisdictions such as Norway, Ontario colleges will, in the form of university colleges, eventually offer master’s and doctorates in applied fields of study – perhaps in concert with some of the smaller universities - and will conduct large-scale, regional, national and international applied research projects, while the so-
called Ivy League universities will continue to concentrate on more traditional, basic research, perhaps handing off entirely the delivery of undergraduate degrees to the university colleges. It is quite possible that Ontario colleges, which are now in an important period of transition, will, in the not too distant future, become new and differentiated institutions quite similar to those in Norway with significant consequences for the broader, post-secondary education landscape of Ontario, and the provincial private sector labour markets.

In order to avoid repeating the approach to a developing institutional cultural shift that entailed little planning in terms of how cultural shifts in the colleges were to be orchestrated and accommodated, the fourth conclusion is that Ontario colleges should consider whether or not it is to their advantage to continue pursuing closer working relations with the province’s universities. The recommendation is that senior leaders in the colleges consider what other jurisdictions have done in terms of developing successful, applied research-focused institutions of higher education, including resolving the difficulties inherent in a provincial, binary, somewhat adversarial, post-secondary educational system.

**Concluding Observation**

What has evolved – more by accident than design - over the 13 years of the Ontario colleges’ applied degree offerings, and the 11 years of the formal approval of applied research activities, is a model of research where research activities have, in a sense, been forced into curriculum to the benefit of the students. No matter where on the Madder (2005) typology a college falls – in other words, no matter how advanced a college’s research culture may be – there is still no consistent, overall policy framework in place for making time available to faculty to engage in their own individual research activities. Whether or not this will ultimately prove to be an appropriate model for sustaining applied research activities in the Ontario colleges is as yet
unclear, but the model does fall within the historical mandate of the colleges in that it thoroughly involves the students in the applied research learning experience.

**Limitations of the Study**

There are some limitations in the research for this study, and in the potential recommendations arising from the analysis of the data collected, in that the findings were produced from a small number of colleges and participants in the study, although the pool of senior leaders at the government level was limited to begin with. It is hoped, however, that the experiences and observations of the senior leaders who participated in this study will lead to a broader understanding and appreciation of the burgeoning applied research culture at Ontario colleges, and the changing roles of college faculty as they seek to engage the applied research process at a deeper, more academic and comprehensive level.

External validity is concerned with the extent to which the findings of one study can be generalized to other situations, and the question of generalizability is always a concern for qualitative researchers (Merriam, 1998, p. 207). The use of multiple sites, allowing for comparison and contrast among participants, does help support this study’s validity, as does the use of semi-structured interviews with a number of predetermined questions used with all the study respondents. It should also be noted that the study is limited to the perceptions of senior college and government leaders and does not reflect the broader views of students, faculty or support staff (Faust Zúñiga, 2009; Fisher, 2008). The evolution of applied research cultures in Ontario colleges, and how that evolution was initiated and has been guided, and the changing roles of college faculty through this evolution, are complex and contentious issues, which should be kept in mind when considering the outcomes of this study.
Suggestions for further research

Central to the changing culture of Ontario colleges following the Post-secondary Education Choice and Excellence Act of 2000, and the Colleges of Applied Arts and Technology Act of 2002, has been the introduction of applied degrees. Of the 24 colleges in Ontario, nine initially received approval to proceed with plans to offer 12 applied degree programs on a pilot-project basis (Ontario Ministry of Training, Colleges and Universities, 2002). Now, however, only 12 colleges are offering some 60 applied degrees (Degrees in Demand, 2012). Understanding why only half – three more were originally given approval to offer the applied degrees - of Ontario’s colleges offer applied degrees with the others having decided to either not participate at all, or initially participated, but then changed their minds about the degree offerings, would lend useful insights into whether or not institutional culture is a significant factor preventing the introduction of applied degrees and an advanced research culture into the Ontario college setting.

While this study has concentrated on the changing role of faculty within the evolving culture of colleges, a clearer sense of how the commercial sector views applied research in the colleges would help contextualize the demand for access to the applied research capabilities of the colleges. If innovative and profitable partnerships and projects are growing out of the applied research functions at the colleges, arguments could be made for further resourcing of these activities and partnerships, especially if some of the graduates of the diploma and degree programs are being hired because of the applied research experience they have had as part of their college education, and with the expectation that they will continue to be part of similar applied research projects as part of their employment responsibilities. A comprehensive analysis of the labour market outcomes of Ontario colleges’ applied degree graduates would further
document increased employer demand for the knowledge and skills developed by these programs.

Finally, given the references made by the interviewees of this study to a potential cultural schism developing between faculty who have advanced academic credentials and engage in applied research activities in the colleges, and the faculty who do not, there would be utility in examining the degree to which such a schism is developing in Ontario colleges between those faculty members who teach in applied degree programs and those who do not, the suggestion being that those with advanced degrees who teach in the applied degree program will have more time for research and related activities than those who do not and will not have time for research. While a number of the subjects interviewed for this study suggested that such a schism was either already in place, or was in a nascent state, one respondent suggested that the idea of such a schism was only in circulation because the subject is being brought up with some regularity by academic researchers. But if real, this issue could become one of some cultural significance for faculty and college administrators in the near future. Anecdotal evidence would suggest that there has been something of a drop-off in applied research protocols coming to the research ethics boards at some colleges. It would useful to have a look at the pattern of protocol applications over the past five years, for instance, sent to Ontario colleges to see what the rate of application is, and whether or not there has actually been a decrease in the number of protocol applications. If there has, does the reason for the apparent decline in interest in applied research have anything to do with the lack of time and funding for the research, or are there other reasons?
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London, Ontario.


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Appendix A

Fisher’s Suggested Questions for Further Study into Research Governance

The final 12 interview questions (APPENDIX E) are based, in part, on the questions for further research posed by Fisher (Fisher, 2009) – as follows:

- To what extent are decisions regarding employment, promotion, tenure, etc. influenced by prior experience, current participation or future research intentions of faculty?
- How are faculty researchers recruited to engage in research activities?
- How are faculty researchers compensated for the research participation?
- How is faculty release time for research negotiated/funded at the local (college) level?
- To what extent are faculty supported in pursuing new and alternative research forms?
- What systems are in place to mentor, advise, and assess faculty engaged in research activities?
- How are outstanding accomplishments in research rewarded and/or publicly recognized? By whom?
- What is the status of researchers at colleges, and how does this affect faculty careers?
- To what extent are non-faculty (part-time, support staff, etc.) engaged in research related activities?
- What models have been established to facilitate the participation of non-faculty, part-time employees, or support staff in research related activities?
- How is the role of research assistant facilitated? Do students have opportunities to participate as research assistants?
- To what extent are the benefits of the teaching/research nexus recognized and supported as a paradigm for supporting research in the college setting?
- Do the institutional measures of research output accurately reflect and align with the institution’s articulated research purposes?
- What mechanisms or governing bodies are in place to evaluate research output? How is research output assessed? Who is responsible for evaluating research output?
- To what extent does participation in research and scholarly activities influence expectation with respect to personnel decisions (hiring, promotion, and tenure)?
- To what extent do publications, grants, and awards influence expectations with respect to personnel decisions (hiring, promotion, and tenure)?
- To what extent are alternative indicators of research output (faculty participation in networking, technology transfer, student performance) recognized and rewarded with respect to personnel decisions (hiring, promotion, and tenure)?
- Are policies in place to clearly delineate intellectual property rights related to college outputs such as technology transfer (royalties, patents, and partnerships)?
- Who is responsible for the reporting and dissemination of research outputs?
- What institutional plans are in place to enhance the quantity and quality of research output?
Appendix B

Consent of Ontario College Administrative Staff agreeing to Participate in Research Project

[To be put on OISE letterhead]
[Date]
[Title], [Name]
[Name of College]
[Address]

Title of Thesis:  All in Good Time: How do Ontario Colleges Accommodate Professors’ need for Time to Engage in Applied Degree-level Research?

Researcher:  Otte Rosenkrantz M.A., M.Ed.

This study is for a PhD dissertation, and will be conducted under the supervision of Peter Dietsche, PhD, Wm. G. Davis Chair in Community College Leadership, OISE/UT. The data from this research will not be used for subsequent research

I understand the nature and purpose of this research study as indicated in the title above and as discussed with the researcher. I understand that I am free to participate or not participate in all or some of the parts of this study as I have indicated below.

I understand that my participation in any part of this study is voluntary; I am free to refrain from responding to any question(s) that I do not wish to answer and I may withdraw from the study at any time without explanation or penalty. If I do withdraw, data collected from me will not be included in the study findings. No physical or psychological harm of any kind is expected. I understand that I will not be judged or evaluated and no value judgments will be placed on my responses.

I agree to be interviewed in person, or by telephone, for approximately 45 minutes regarding my perspectives on this project. It is the intention that each interview will be audio taped and later transcribed to paper; I have the choice of declining to have the interview taped. Should I agree to record the interview, those audio-tapes to be transcribed by the researcher.

I understand that all data collected will remain in a in a secure server environment at Fanshawe College, and will not be stored outside a secure server environment, for example on a desktop or laptop computer, or on other portable electronic storage devices. Any identifiable data which are outside a secure server environment will be encrypted at all times except when they are decrypted during use, in which case a log detailing the use of personally identifiable and/or confidential data will be kept. Data will be stored for a period of three to five years as there will be no archival value to the data beyond the summative information contained in the completed thesis. All paper copies of the data will be shredded. All digital data will be
magnetically destroyed. Only the researcher and his supervisor will have access to the transcripts. In order to maintain confidentiality of each participant, each participant will be given an alpha-numeric identifier and all documents will be numbered accordingly in the participant’s file along with any notes taken and the digital recordings from the interview. Should the participant name specific institutions or persons in the interview, these will be given a factitious title or name in the final transcription of the data and not mentioned by name or title in the dissertation or in any publication. In the case that participants would like to be informed of the results of the study, their contact information will be kept separate from the data. All data collected from the each participant will be given an alphanumeric code and stored away from the identifying information attached to the participants in a locked safe in the home office of the Primary Investigator. I also understand that at no time will I be judged or evaluated, nor will I be at risk of harm, and no value judgment will be placed on my responses.

I understand that I, or my college, will not be identified in the research paper that will result from this project. A summary of the thesis will be made available to me upon request, but the researcher is not planning to publish these findings in other than standard academic venues.

By signing below, you are indicating that you are willing to participate in the study, you have received a copy of this letter, and you are fully aware of the conditions above.

______________________________  __________________________
Signature                  Date
Phone No. ____________________
e-mail address: __________________________

I consent to the interview being audio-taped and transcribed by the researcher   YES   NO
I would like a summary of the findings sent to me. YES     NO

The study has been approved by the Research Ethics Boards of the University of Toronto. If you have any questions related to your rights as a participant in this study please or if you have any complaints or concerns about how you have been treated as a research participant, please contact the Office of Research Ethics, ethics.review@utoronto.ca or 416-946-3273

Please keep a copy of this letter for your records.

Thank you,

Otte Rosenkrantz M.A., M.Ed.
PhD Candidate, Theory and Policy Studies in Education
OISE/University of Toronto
Telephone: _519 452 4430 x 4586
Email: _orosenkrantz@fanshawec.ca
Fanshawe College RM T3010
1001 Fanshawe College Blvd.
London, Ontario

Peter Dietsche Ph.D.
Wm. G. Davis Chair in Community College Leadership
Assistant Professor, Higher Education
Appendix C

Consent of Ontario Ministry of Education Staff agreeing to Participate in Research Project

[To be put on OISE letterhead]

[Date]
[Title], [Name]
[Name of College]
[Address]

Title of Thesis:  All in Good Time: How do Ontario Colleges Accommodate Professors’ need for Time to Engage in Applied Degree-level Research?

Researcher:  Otte Rosenkrantz M.A., M.Ed.

This study is for a PhD dissertation, and will be conducted under the supervision of Peter Dietsche, PhD, Wm. G. Davis Chair in Community College Leadership, OISE/UT. The data from this research will not be used for subsequent research.

I understand the nature and purpose of this research study as indicated in the title above and as discussed with the researcher. I understand that I am free to participate or not participate in all or some of the parts of this study as I have indicated below.

I understand that my participation in any part of this study is voluntary; I am free to refrain from responding to any question(s) that I do not wish to answer and I may withdraw from the study at any time without explanation or penalty. If I do withdraw, data collected from me will not be included in the study findings. No physical or psychological harm of any kind is expected. I understand that I will not be judged or evaluated and no value judgments will be placed on my responses.

I agree to be interviewed in person, or by telephone, for approximately 45 minutes regarding my perspectives on this project. It is the intention that each interview will be audio taped and later transcribed to paper; I have the choice of declining to have the interview taped. Should I agree to record the interview, those audio-tapes to be transcribed by the researcher.

I understand that all data collected will remain in a in a secure server environment at Fanshawe College, and will not be stored outside a secure server environment, for example on a desktop or laptop computer, or on other portable electronic storage devices. Any identifiable data which are outside a secure server environment will be encrypted at all times except when they are decrypted during use, in which case a log detailing the use of personally identifiable and/or confidential data will be kept. Data will be stored for a period of three to five years as there will be no archival value to the data beyond the summative information contained in the
completed thesis. All paper copies of the data will be shredded. All digital data will be
magnetically destroyed. Only the researcher and his supervisor will have access to the
transcripts. In order to maintain confidentiality of each participant, each participant will be
given an alpha-numeric identifier and all documents will be numbered accordingly in the
participant’s file along with any notes taken and the digital recordings from the interview.
Should the participant name specific institutions or persons in the interview, these will be
given a factitious title or name in the final transcription of the data and not mentioned by name
or title in the dissertation or in any publication. In the case that participants would like to be
informed of the results of the study, their contact information will be kept separate from the
data. All data collected from the each participant will be given an alphanumeric code and
stored away from the identifying information attached to the participants in a locked safe in the
home office of the Primary Investigator. I also understand that at no time will I be judged or
evaluated, nor will I be at risk of harm, and no value judgment will be placed on my responses.

I understand that I, or my college, will not be identified in the research paper that will result
from this project. A summary of the thesis will be made available to me upon request, but the
researcher is not planning to publish these findings in other than standard academic venues.
By signing below, you are indicating that you are willing to participate in the study, you have
received a copy of this letter, and you are fully aware of the conditions above.

____________________________  ________________________
Signature                              Date
Phone No. __________________________
e-mail address: __________________________
I consent to the interview being audio-taped and transcribed by the researcher   YES   NO
I would like a summary of the findings sent to me. YES     NO
The study has been approved by the Research Ethics Boards of the University of Toronto. If you
have any questions related to your rights as a participant in this study please or if you have any
complaints or concerns about how you have been treated as a research participant, please contact
the Office of Research Ethics, ethics.review@utoronto.ca or 416-946-3273

Please keep a copy of this letter for your records.
Thank you,

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Assistant Professor, Higher Education
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Ph: 416-978-1217
Fax 416-926-4741
Appendix D

Interview Questions for Senior College and Ministry of Education Personnel Leading up to the Post-secondary Education Choice and Excellence Act, 2000

Question 1: Was the need for faculty time to conduct advanced applied research considered in the planning for applied baccalaureate programs?

Question 2: Was it anticipated that faculty teaching in applied baccalaureate programs should be supported with time and funding to earn the necessary academic qualifications to teach in these programs?

Question 3: Was it expected that publications, grants and research awards would influence personnel decisions in terms of hiring, promotion and tenure?

Question 4: Was it expected that the colleges would require faculty teaching in applied baccalaureate programs to both teach and conduct research?

Interview Questions for College Leadership, Following the Post-secondary Education Choice and Excellence Act, 2000

Question 1: How is faculty release time for applied research funded at the local (college) level?

Question 2: What is the academic standing of researchers at your college, and how does this affect their careers as faculty?

Question 3: To what extent does participation in research activities influence hiring and promotion?

Question 4: Is time for applied research accommodated in the SWF? If so how?

Question 5: To what extent is faculty support of student engagement in applied research activities expected and/or rewarded?

Question 6: What support systems are in place to assist faculty in conducting advanced research, including grant application, proposal writing, Research Ethics Boards, data storage?

Question 7: What systems are in place to mentor and assist faculty wanting to engage in advanced applied research activities?

Question 8: Is advanced applied research a strategic focus for your college?
## Appendix E

### College Selection Criteria for Web Content Analysis

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<th>Established</th>
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Appendix F

Invitation for Key Informants Participants in Ontario Colleges

[on OISE letterhead]
[Date]
[Title]. [Name]
[Name of College]
[Address]
Re: Title of Research Project: All in Good Time: Accommodating Release Time for Faculty Research in Ontario Colleges

Dear Colleague:

I am inviting you to participate in the above qualitative study as you are in a position to provide insightful information on the topic of accommodating release time for faculty research in Ontario colleges. I am conducting this study as a doctoral student in the Department of Theory and Policy Studies at the Ontario Institute for Studies in Educations of the University of Toronto (OISE/UT), under the supervision of Dr. Peter Dietsche. The thesis that will report on the study findings is in partial fulfillment for my Ph.D. degree.

The purpose of this study is to ascertain what Ontario colleges at various stages of advanced applied research sophistication are doing to make time available to faculty wanting to conduct applied research. My research also seeks to explore the extent to which Ontario colleges planned for the creation of a research culture at the colleges, and if they anticipated meeting the requirements as set out by The Post-secondary Education Quality Assessment Board (PEQAB) in terms of ensuring that faculty who teach in the applied degree programs have the necessary time to conduct applied degree-level research. The findings will provide valuable information for colleges engaged in advanced applied research, and the Ministry of Colleges Training and Universities (MTCU), as they engage in policy and planning decisions that will affect the ongoing and developing research culture in Ontario colleges.

Participation in any part of the study is voluntary; you are free to refrain from responding to any question(s) that you do not wish to answer and you may withdraw from the study at any time without explanation just by letting me know. In this case, your responses to that point will be destroyed and not included in the study findings.

Participation in this study will consist of your participation in a structured interview with the Primary Investigator, answering a series of eight questions that ask for your perceptions of the topic of interest.

The interview will take about 45 minutes to complete. If you agree to participate, you will be sent a copy of the questions before the interview at least a week in advance in order for you to have time to reflect on the questions. The interview will be digitally recorded for the purposes of transcription. No value judgment will be placed on your responses at any time. You will have an opportunity to review the interview transcript and suggest any revisions you wish. In order to maintain confidentiality, each participant will be given a pseudonym or case number and all documents will be numbered accordingly in the participant’s file along with any notes taken and the audio tape from the interview. The list linking the participants’ identities with the pseudonyms or case numbers will be kept in a secure location separated from each other. Should any participant name specific institutions or persons in the interview, these will be deleted or
given a fictitious title or name in the final transcription of the data and not mentioned by name or title in the dissertation or in any publication.

There is no harm to participants anticipated that is any greater than participation in daily activities.

It is my intent to only publish the study findings in appropriate academic venues. No participant will be identifiable in any reporting of the findings, or if anonymity cannot be assured, I will request your written consent to be identified by your position only.

All data collected will be kept in confidence and secure on a password protected computer and in a locked file cabinet in my office at all times and accessible only to my thesis supervisor and me as Primary Investigator. All electronic information outside of a secure server environment will be encrypted consistent with University of Toronto data security and encryption standards.

A summary of the findings of study will be made available to you upon sending me a separate e-mail request to: orosenkrantz@fanshawec.ca

If you have any questions about the study, please contact me at orosenkrantz@fanshawec.ca, or (519) 672-4430 ext. 4586, or my thesis supervisor, Dr. Peter Dietsche at peter.dietsche@utoronto.ca 416 978-1217.

If you have any questions about the rights of research participants please contact the Ethics Review Board office at the University of Toronto, at ethics.review@utoronto.ca or call 416 946-3273, or the Research Ethics Board at your college.

If you understand the above and agree to participate in this study, please indicate your agreement below, and return it to me in the envelope provided or by e-mail.

Thank you in advance for your support.

Yours sincerely,

Otte Rosenkrantz M.A., M.Ed.
Research Consultant
Chair, Research Ethics Board
Applied Research and Innovation
Fanshawe College RM T3010
1001 Fanshawe College Blvd.
519.452.4430 ex 4586
orosenkrantz@fanshawec.ca

INFORMED CONSENT

I understand the nature of this study as described above and:

[ ] I hereby agree to participate in the structured interview s described above.

[ ] I AGREE to the audio-taping of this interview.

__________________________
Name
(Please print of type)
Signature Date: _____________________
Please keep a copy of the Invitation and Consent form for your records.
Appendix G

Letter Requesting Administrative Consent

(date), 2012

__________ College

_________ Ontario

Attention: Vice President, Academic

Dear xxxx,

I am a graduate student in the Theory & Policy Studies in Education Department at OISE/UT, and am currently planning a research project that will involve a member of your senior leadership team. In order to begin the project, I require your written consent.

The purpose of the study is to consider what policies, if any, have been put in place for the consistent development of faculty capacity in terms of having dedicated time to engage in advanced applied research at Ontario colleges. Research for this dissertation will be comprised of interviews a member of the senior leadership team in four Ontario colleges, and with individuals who were in senior leadership positions in the Ontario college system, and in the Ontario Ministry of Education, at the time of the introduction of the Post-secondary Education Choice and Excellence Act of 2000 (Government of Ontario, 2000).

The study involves conducting eight structured interviews, each of a duration of about 45 minutes. As much as possible the interviews will be conducted face to face in the interview subject’s office or other closed-door environment, with the interviews being recorded digitally. In the event, however, that I am not able to conduct the interview in person it will be conducted as a conference call from a closed office, again recorded digitally.

Subjects will be well informed about the nature of the study and their participation, including the assurance that they may withdraw at any time. In addition, they may request that any information, whether in written form or audiotape, be eliminated from the project. Participants will at no time be judged or evaluated, and will at no time be at risk of harm.

The information gathered from both questionnaires and interviews will be kept in strict confidence and stored at a secure, locked location in the office of the primary investigator. All information will be reported in such a way participants and institutions cannot be identified. All data collected will be used for the purposes of a PhD thesis and perhaps for subsequent research articles. All raw data (i.e. transcripts, field notes) will be destroyed five years after the completion of the study.

If you agree, please sign the letter below and return it to me in the envelope provided. If you have any questions, please feel free to contact me at (519) 452 4430 x 4586, or at
orosenkrantz@fanshawec.ca. You may also contact my supervisor, Dr. Peter Dietsche at (416) 978 1217. Finally, you may also contact the U of T Office of Research Ethics for questions about your rights as a research participant at ethics.review@utoronto.ca or 416-946-3273.

Thank you in advance for your cooperation and support.

Sincerely,

Otte Rosenkrantz M.A., M.Ed.
Research Consultant
Chair, Research Ethics Board
Applied Research and Innovation
Fanshawe College RM T3010
1001 Fanshawe College Blvd.
519.452.4430 ex 4586

____________________________________
Administrator’s signature

____________________________________
Date
Appendix H

Description of the Stages of Innovation for Colleges and Institutions

The description of an institution with no formal innovation policies and structure has been omitted from this list as that category does not apply to Ontario colleges.

1. Novice Innovation Institutions

Characteristics:

- formal innovation activities have commenced relatively recently
- active support by senior administration is required to sustain formal innovation activities
- a director of research is appointed. The director of research reports to a senior administrative position often the Vice President Academic/Education
- initial research and development policies are developed often to be compliant with the requirements of funding agencies
- ad hoc fiscal and human resource systems are developed to support innovation. These may be local agreements or pilots to establish systems to support innovation. Fiscal systems and reporting capacity especially those that require the carryover of funds to support multiple year research projects are developed
- internal and external community analysis is conducted to establish the potential foci of innovation activities i.e. identification of strengths of the institution and the local community that would support innovation.
- innovation activities are conducted and/or supervised by faculty. Part time support staff may be recruited to support these activities (often former students) or some release time is provided staff to support innovation. These positions or roles are temporary in nature.
- early in this stage institutions are often are capital rich and operating poor. Availability of capital equipment often precedes the availability of operating capital to conduct the project. Since 1999 CFI matched by provincial funding agencies has often acted as the catalyst for the provision of this capital equipment.
- this is a time of significant institutional learning as systems and knowledge to support innovation activities are incomplete. Institutional acceptance of innovation activities as an activity within the college/institute mandate is not widespread.
- there may be significant cultural conflict between those who believe that this activity will move the college away from its mission (mission drift) and those that see innovation as an opportunity to support academic activities.
- this stage is transitional and usually requires three to seven years. This is a very unstable stage where without active support by administration, faculty and staff formal innovation activities may cease. The time spent in this phase may be reduced by hiring an experienced director of research or through intensive professional development of those involved in the administration or performance of innovation activities.
Innovation activities include:
· potentially all aspects of the first model/state
· formal innovation activities are usually project based conducted in collaboration with regional community/industry partners. These are often supported by a combination of industry community support (cash or “in kind”) and government funding. These activities are limited in number and scope, are time limited and are often framed as pilot activities as systems and support develop.

2. Established Innovation Institutions
Characteristics:
· comprehensive research and development policies and practices are in place
· human resource policies are stable and innovation positions move from part time or released time to full time longer term positions. There is less turn-over of innovation related personnel.
· fiscal management, human resource and reporting policies and practices are established
· the director of research reports to a senior Vice President. This reporting relationship is dynamic often oscillating between the vice president academic/education and when a separate office exists the vice president that is accountability for contract training/or continuing education. The systems and human resource policies associated with innovation activities have many parallels with those that support contract training.
· facilities and equipment are established but may require renewal
· institutions may be in the situation where they have access to more operational funding than can be managed by the existing innovation administration. This may be a significant limiting factor unless there are additional resources to invest in increased administrative support.
· academic and service divisions support innovation activities as part of the college/institute mandate and mission.

Innovation activities include:
· potentially all aspects of the first model/state
· innovation teams lead by faculty conduct multiple projects that interrelate and are contiguous in time. The faculty and staff involved may seconded and fully funded to conduct innovation activities on a continuing basis.
· innovation activities may support both local and regional needs
· there may be some integration of business supports with research and development
· funding and innovation activities involve multiple public/private sector partnerships
· the longer an institution is in this stage the greater the focus on longer term multi-year projects that provide sustainability for innovation activities and greater stability in human resources.

3. Integrated Innovation Institutions
Characteristics:
· these colleges/institutes have integrated innovation and business support systems that provide both business development support integrated with innovation activities
· activities may be regional/national and international in scope
· these colleges/institutes are often relatively large in nature with long standing innovation and business development activities.
Innovation activities include:
· potentially all aspects of the first and third models/states
· these institutions house business incubators, accelerators or business parks that are supported by and provide support to the college or institute.
- Companies on the campus may access research and development resources to conduct their own innovation activities or may sub contract innovation activities to the institution.

Most Canadian colleges/institutes were formed during the past forty years with a mandate that supported the first model, however, there are notable exceptions. These institutions were often formed as institutes, with an initial mandate that supported applied research and development activities. Currently these institutions are in either three or four of the states described above

(Madder, 2005, pp. 33 - 35)