Ross, J. A., & Cousins, J. B. (1994). Intentions to seek and give help and behaviour in cooperative learning groups. *Contemporary Educational Psychology*, 19, 476-482.

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**Intentions to Seek and Give Help, and
Behavior in Cooperative Learning Groups**

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November 1993

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ABSTRACT

Researchers have used children's attitudes toward helpfulness to investigate the conditions under which children seek and give help. Little attention has been given to examining the extent to which such measures correlate with actual behavior. In this study observations of grade 9-10 students working in cooperative learning groups were compared to generalized intentions to ask for and give help to peers. The intentions were poor predictors of observed behavior.

INTENTIONS TO SEEK AND GIVE HELP AND OBSERVED BEHAVIOR IN COOPERATIVE LEARNING GROUPS¹

Research interest in help seeking as an adaptive mechanism enhancing student achievement and the mounting evidence of the effectiveness of peer-mediated instructional methods (e.g., cooperative learning) have stimulated inquiry into student helpfulness. Although most research findings have come from observational studies, a number have used student attitudes toward helpfulness as a proxy for behavior. The purpose of this article is to investigate the extent to which generalized intentions to seek and give help correlate with observed behavior in a situation in which being helpful is encouraged.

The research was guided by the question: Will students' generalized intentions toward giving and seeking help predict their behavior? The study was conducted in settings which encouraged students to help one another. We investigated the relationship between the variables of interest in two conditions in order to increase the generalizability of the findings. In both conditions the learning tasks (correlational reasoning) were so demanding that a large proportion of students needed help. Teachers told students to ask for and give each other help. In one condition commitment to the group was strengthened through reward interdependence; in the other condition there were group rewards and resource interdependence. In both conditions social loafing was discouraged by individual accountability.

Method

Subjects. Parental permission was obtained to record 96 grade 9/10 students in six Ontario (Canada) classes. Students were 14-16 years of age and a majority were female (58%). An additional 96 grade 7 and 9 students from the same districts participated in group interviews.

Instruments. Students were audio taped on a single occasion for 20-30 minutes when working

cooperatively. Verbatim transcripts of the tapes were made; the students who were recorded reviewed the transcripts while listening to the audio tapes to identify speakers and correct the text.

Each transcript was coded in its entirety by a single trained coder. The unit of coding was the utterance, defined as a string of words communicating one idea, usually bounded by a pause of one second or more. There were three levels of requests: asking for explanations, requests for procedures/facts or asking for evaluations. Requests were coded as answered if the requestor received a relevant response within 10 transcript lines of the request. There were five types of responses: giving procedures/facts, explanations, acknowledgments (non-evaluative recognition of peer comments), evaluations, and giving affective support (attempts to reduce feelings of frustration).

The reliability of talk coding procedures was assessed by drawing two random samples of utterances which were independently coded by two experienced coders. There was inter-rater consistency in (a) chunking the passages into codable utterances; Cohen's $k=.86$ (on 72 decisions) at the beginning of the coding and $.92$ (on 67 decisions) at the end of the coding. There was inter-rater consistency in distinguishing; (b) main codes--requests, responses and other (i.e., off task and inaudible comments)-- $k=.91$ and $.88$; (c) subcategories within each main code (i.e., the three types of requests, five types of responses and two types of other utterances), $k=.91$ and $.88$; and (d) answered and unanswered requests, $k=1.00$ and $.96$.

Helpful intentions were measured with a self-administered survey. Students responded to statements about seeking and giving peer help using a five point scale ranging from "not likely" to "very likely" or "not true of me" to "very true of me." There were twelve items about students' willingness to seek help and five items about its perceived cost. The help seeking items were reworded to create a help giving instrument. Eleven items measured willingness to give help and four items measured perceived costs of help giving.

Focus interviews were conducted with groups of four grade 7 ($N=19$) and grade 9 ($N=23$) students from the same districts who were working in cooperative learning groups and had completed the surveys two days prior to the interview. Students took turns expressing in their own words what the items in the survey meant and

responding to the interpretations of other students. Another sample of grade 7 ($N=27$) and grade 9 ($N=25$) students individually completed a questionnaire which probed the appropriateness of the survey's sample of situations in which help might be sought or given.

Student ability was measured because lower ability students more frequently seek help and higher ability students are more likely to provide it. Correlational reasoning ability was assessed with an instrument that presented students with data on the age, sex and swimming speed of a sample of swimmers. Students were asked to find out if age and swimming speed were related; successful performance required that students control for the effects of a third variable, sex. The responses were coded on four dimensions (organizing data, selecting information, synthesizing and concluding) which were summed to produce a score ranging from 0 to 12. Ross and Cousins (1993a) found that the instrument had high reliability and validity. Student cognitive ability relative to other students in the class was estimated by having teachers rank each student from most to least able. Coding was inverted so that high scores represented high ranks.

Treatment. Classes were randomly assigned to two conditions. The cooperative treatment was modelled on Student-Teams Achievement-Divisions. Whole class demonstrations were used to introduce a procedure for solving two variable and multivariate correlational problems. Practice activities were undertaken in cooperative groups; these comprised about 70% of the instructional time (10 - 30 minute periods). Student tasks consisted of constructing scatterplots and trend lines to represent the relationship between two continuous variables, in some instances while controlling for a third variable. Students were divided into mixed ability groups so there was one high ability, one low ability and two average students in each group. Groups were adjusted to balance sexes and to eliminate delinquent alliances. Students remained in the same groups for the duration of the treatment. Reward interdependence consisted of recognition awards and bonus marks for group performance (based on the sum of individual test scores).

The computer condition was identical except that the practice activities were completed by student pairs with the assistance of a computer, using the software program CORReoGRAPH.² Each pair, heterogeneous with

regard to sex and rank in class, experienced resource interdependence by sharing a computer.

Procedure. After sample selection, teachers were given a two hour in-service on how to teach correlational reasoning using the cooperative or computer approach. In each version of the in-service, specific teaching techniques were demonstrated, key teacher decisions were reviewed, a detailed instructional manual was provided, and data collection procedures were described.

Immediately following the in-service teachers administered the self-report surveys and correlational reasoning tests. The treatment was implemented in the next six weeks at the teachers' convenience; the audio taping was done near the end of the program. The transcripts and codings were entered using (TAP) Text Analysis Package software. A series of SPSSpc system files containing frequencies of codes was created. Since the sessions varied in length, the frequencies were adjusted (by dividing by session length and multiplying by 100 to eliminate decimals). The survey data were subjected to a principal components factor analysis with varimax rotation and the alphas of the resulting scales were calculated. The interview data were searched for instances of students interpreting survey items differently than the researchers and for situations calling for help that were not identified in the survey.

Results

A principal components factor analysis was conducted on the help seeking survey items. Cattell's scree test indicated that two factors ("willingness to seek help" and "perceived cost of seeking help"), accounting for 41% of the variance, could be extracted. All the items loaded on the predicted scales at .30 or better, although two items loaded on both scales. The internal reliabilities of the scales ($\alpha = .81$ and $.79$) were adequate. The same procedure was performed on the giving help items. Two factors ("willingness to give help" and "perceived costs of help giving"), accounting for 51% of the variance, were extracted. All the items that were expected to load on the "give-willing" scale did so at .30 or more, although one item also loaded on the other scale. All items expected to

load on the "give-costs" scale did so at .30 or better, but one item loaded on both. The internal reliability for the "give-willing" scale was adequate ($\alpha=.89$), but for the "give-costs" scale it was low ($\alpha=.47$).

The focus interviews with grade 7 and 9 students indicated that the items were interpreted in the same way by the students and the researchers; there were no discrepancies on any of the items. The student surveys identified a few situations that were not addressed by the items but there was only one that appeared with any frequency (19% of the sample): needing help due to absence when the class assignment was explained.

The frequencies of observed behavior were calculated separately for each condition. Help seeking was significantly higher in the cooperative than the computer classes (the multivariate effect was $F(6,102) = 2.85$, $p<.01$), as was help giving (the multivariate effect was $F(6,102) = 3.66$, $p<.01$). When session length was controlled, the differences were nonsignificant except for requests for explanation which were ignored $F(1,94) = 5.56$, $p<.05$ and giving positive evaluations $F(1,94) = 8.69$, $p<.01$. In each case the means were higher in the cooperative classes, perhaps because four persons generate more talk than pairs. Another possibility is that interactions around a computer screen lend themselves to nonverbal communication to a greater extent than small group discussions. Table 1 displays the means (adjusted by session length) and standard deviations.

Table 1 About Here

Table 2 displays the correlations between intentions to seek help and observed help seeking. For the cooperative group, all but one of the correlations were nonsignificant. The exception was in the expected direction: students who indicated that they were more aware of the costs of seeking help from their peers were less likely to ask for it. For the computer group, ten of the twelve correlations were nonsignificant. The exceptions were counter-intuitive: those who expressed a greater willingness to seek help were observed to do so less frequently than other members of the sample. Students who were most likely to need help did not seek it; the correlations (not shown) were near zero between observed help-seeking behavior and the two ability measures (rank in class and correlational reasoning scores on entry to the program). The only significant correlation indicated that lower ability students were more likely to make requests for explanations that were ignored in the cooperative treatment

($r=.28$, $N=45$, $p<.05$).

Table 2 About Here

Table 3 presents the correlations for help giving. For the cooperative group there were only four significant correlations. These were in the expected direction: students who expressed a greater willingness to give help were more likely to provide it and those who were more aware of the costs of help giving were less likely to give it. For the computer group there was only one significant correlation; contrary to expectation, students who reported a greater willingness to give help were less likely to acknowledge the contributions of others. The correlations between observed help giving and rank in class were almost all near zero. When the scores on the correlational reasoning task were considered, the expected pattern between ability and help giving became more visible for the cooperative treatment, although the relationship continued to be weak. Students who were more successful on the cognitive achievement instrument were more likely to give facts/procedures ($r=.25$, $N=45$, $p<.05$) and affective support ($r=.30$, $N=45$, $p<.05$).

Table 3 About Here

Discussion

Although the results were mixed, in most instances intentions did not accurately predict observed behavior. The most likely explanation is that students were not able to assess their own competence on the task. The low correlations of observed behavior with the ability measures indicate that those with a greater need for help were no more likely than others to seek it and those with greater capacity to help were no more likely to give it. Students were engaged in solving correlational reasoning problems, a domain in which students perform poorly (Cousins & Ross, in press; Ross & Cousins, 1993a; 1993b). The pretest may have appeared easy to the less able, in that the task of relating swimming speed to age involved familiar content, thereby inappropriately elevating self-appraisals and impeding some students from recognizing that they needed to get help. In contrast, the more able may have realized that despite its surface content the task was one for which they were ill-prepared. Such a perception might have depressed feelings of confidence in their ability to help others. These feelings may have

continued into the program because students received no direct feedback on how they had done on the pretest. During the program students did receive feedback in the form of correct graphs which could be used by the students as models to evaluate their own. But these models may not have reduced uncertainty about competence since representations of equivalent relationships could vary considerably, depending upon such factors as the scales used for the variables.

A counter explanation for the discrepancy between intentions and behavior is the possibility of inadequate measurement. The reliability of both sets of instruments was adequate, with the exception of the giving costs scale. The observation instrument examined a series of behaviors and the surveys compiled scales from a cluster of situations, thereby reducing distortions that arise in correlations when single acts are compared. The items used in the surveys corresponded to experiences familiar to students and their interpretations of the language used were compatible with those of the researchers. But the instruments were not at the same level of generality. The survey matched the conditions of observation in that it asked students to report their intentions to seek and give help from a peer (as opposed to some other person) while working in class (as opposed to elsewhere) with other students (as opposed to independent seat work). But the survey did not direct students to describe their intentions in the specific condition in which they were observed (i.e., when working in cooperative learning groups) and the focus interviews that tested student understanding of the survey items did not investigate the level of generality issue. In addition, students were observed on a single occasion, even though Ross & Raphael (1990) found that student interactions in cooperative groups change over several weeks of observation.

A second alternative explanation is the possibility that the survey responses were distorted by social desirability. But if social desirability was a factor in reporting intended helpfulness, it would have a different effect for help seeking than for help giving. Students knew, from teacher directions, they should assist their classmates. In contrast, there is reluctance to seek help due to fear of ridicule. The result is that social desirability might depress help seeking and increase help giving in survey responses. But the relationship between self-reports and observed behavior was virtually the same in both conditions. Nonetheless social desirability was not explicitly

measured and the hypothesis that it contributes to the failure of intentions to predict behavior cannot be ruled out.

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FOOTNOTES

¹Funding for this research was provided by the Ontario Ministry of Education through its Block Transfer Grant to the Ontario Institute for Studies in Education and the Social Sciences and Humanities Research Council of Canada. The views expressed in the article do not necessarily reflect the views of the Ministry or Council. Anne Hogaboam-Gray contributed to the data collection and Peter Gray to the data analysis. An earlier version of the article was presented at the 1993 annual meeting of the American Educational Research Association, Atlanta.

²The software program was designed to support the correlational reasoning instruction package. In addition to procedures for file management, the program provided simple commands to create multivariate scatterplots and calculate correlation coefficients. Further information about the program is available from the authors.

Table 1

Adjusted Mean Frequencies of Occurrences (and Standard Deviations) for Observed Help Seeking and Help Giving by Treatment

Category	Means & Standard Deviations	
	Cooperative (N=45)	Computer (N=51)
Requesting Help		
facts/procedures, answered	2.66 (1.82)	2.40 (2.04)
facts/procedures, ignored	0.88 (0.87)	0.85 (0.77)
evaluations, answered	0.56 (0.74)	0.36 (0.68)
evaluations, ignored	0.35 (0.56)	0.14 (0.29)*
explanations, answered	0.14 (0.22)	0.09 (0.27)
explanations, ignored	0.04 (0.13)	0.07 (0.21)
Giving Help		
facts/procedures	8.77 (5.44)	7.95 (4.79)
explanations	0.10 (0.27)	0.02 (0.29)
comfort	0.03 (0.12)	0.00 (0.00)
acknowledgements	2.59 (2.36)	2.02 (1.59)
positive evaluations	2.65 (1.63)	1.71 (1.50)**
negative evaluations	1.90 (1.62)	1.80 (1.52)

* $p < .05$, ** $p < .01$.

Table 2

Correlations of Observed Requests for Help (Mean Frequencies Adjusted by Session Duration)
with Self-Reports by Treatment Group

	Cooperative (<u>N</u> = 42-44)		Computer (<u>N</u> = 46-51)	
	seek-willing	seek-cost	seek-willing	seek-cost
Answered Request				
facts & procedures	.14	-.14	-.27*	-.03
evaluations	-.14	-.29*	-.27*	-.03
explanations	-.09	.16	-.11	-.14
Ignored Request				
facts & procedures	-.23	-.18	-.19	-.11
evaluations	-.16	-.21	-.06	-.07
explanations	.06	-.09	-.07	-.21

* $p < .05$.

Table 3

Correlations of Observed Help Giving (Mean Frequencies Adjusted by Session Duration) with
Self-Reports by Treatment Group

	Cooperative (<u>N</u> = 42-44)		Computer (<u>N</u> = 46-51)	
	give-willing	give-costs	give-willing	give-costs
Giving Help Codes				
.facts & procedures	-.08	-.31*	.07	.01
.explanations	.15	-.01	-.06	-.17
.comfort	.11	-.13	NA	NA
.acknowledgements	.28*	-.15	-.27*	.01
.positive evaluations	-.02	-.33*	.03	-.13
.negative evaluations	-.01	-.43**	-.15	.08

* $p < .05$, ** $p < .01$.

NA=zero occurrences of the behavior