
Development and Evaluation of an Instructional Module to Promote Career Maturity for Youth with Learning Difficulties

Nancy L. Hutchinson

John G. Freeman

Katherine H. Downey

Queen's University

Lisa Kilbreath

Prince Edward County

Abstract

This paper examines the effects of a counselling program designed to promote career maturity among youth with learning disabilities and other youth at risk of dropping out of school. The steps of the intervention are given in detail and the results of two pilot studies are presented. The first study involved a group of low-achieving students in an integrated career program, while the second study used a group of adolescents with learning disabilities as subjects. In both cases, the students in the intervention group improved significantly from pre-test to post-test on a measure of career maturity. Students in a control group did not show similar improvement. Most of the improvement in intervention subjects' scores could be attributed to an improved understanding of career options. Implications of the research and plans for future studies are given.

Résumé

Cet article examine les effets du programme de counseling développer dans le but de promouvoir le développement d'une certaine maturité face à la notion de carrière chez les jeunes ayant des difficultés d'apprentissage et d'autres jeunes à risque de devenir des décrocheurs. Les étapes de l'intervention sont décrites en détail et les résultats des deux études pilotes sont présentés. La première recherche implique un groupe d'étudiants ayant un niveau bas de réussite et inscrits dans un programme intégré de carriérogie. La deuxième étude a utilisé un groupe d'adolescents ayant des troubles d'apprentissage. Dans les deux cas, les étudiants du groupe d'intervention ont amélioré leurs résultats de façon significative du prétest au post-test sur une mesure du niveau de maturation face à la notion de carrière. Les étudiants du groupe contrôle n'ont pas démontré la même amélioration. Une grande partie de l'amélioration des résultats chez les étudiants du groupe d'intervention peut être attribuée à une meilleure compréhension des options carriérogiques. Les implications de cette recherche et les possibilités pour des recherches ultérieures sont présentées.

The present study is part of a program of research to design and evaluate a Canadian career education curriculum that specifically meets the needs of youth with learning disabilities and other youth at risk for dropping out of school. The curriculum, "Pathways," consists of six modules. Each module may be used independently or all six modules may be used as a course of study. This paper reports two pilot studies conducted with the "Pathways" module. The first pilot study was conducted with a group of adolescents who had been identified as at risk for dropping out and were enrolled in an integrated program stressing

employment preparation. The second pilot study took place in the same school the following semester with youth identified as learning disabled who were participating in a learning strategies program one period each day. In the second study, data were gathered for a control group of similar students.

RELATED LITERATURE

Career maturity for adolescents refers to readiness to make educational and career decisions (Super & Thompson, 1979). Studies comparing the career maturity of adolescents with learning disabilities to that of other youth have shown consistent results. In an early study, Bingham (1978) found that male pre-adolescents and adolescents with learning disabilities were immature in their understanding of demands associated with career choice when compared to their normally-achieving peers. Biller (1985) reported that, even when a choice of career field had been made, youth with learning disabilities had difficulties making career decisions within the chosen field compared to others of their age group. In a follow-up study (Mithaug, Horiuchi & Fanning, 1985), respondents with learning disabilities reported requiring assistance in understanding their abilities, preparing to perform acceptable work, and searching for appropriate careers. Roessler, Hinman and Lewis (1987) observed that many clients with learning disabilities were unable to explain the employment significance of their education, job history, or learning disability. Biller (1990) concluded, on the basis of these and similar studies, that there is a "need for developmentally based competencies in a career guidance practice that serves special populations such as LD students" (p. 280).

Without guidance, youth with learning disabilities and others at risk of dropping out are unlikely to engage in systematic career planning. The major elements of career planning include: (a) a deliberate process for becoming aware of self, opportunities, choices and consequences; (b) strategies for identifying career-related goals; and (c) the developmental experiences required to attain career goals (Carnevale, Gainer & Meltzer, 1990).

Youth who drop out of school experience considerable difficulty in making the transition to employment. However, once they leave the school setting, their career maturity is rarely studied. In an extensive study of labour market experiences and transition patterns of high school leavers, the Ontario Ministry of Skills Development (1989) found that only 13 per cent of early leavers reported receiving any form of career- or job-related counselling after leaving high school. The career counselling received in high school appeared critical to a successful school-to-work transition. Expressing interest in a specific type of job at the time of leaving high school was strongly correlated with later job

satisfaction, higher income, and return to further education and training.

There is a higher rate of early leaving among students identified as learning disabled than among those identified as non-handicapped in Canada (Spren, 1988) and in the United States (Blackorby, Edgar & Kortering, 1991). Because of the similarities and overlap of the two groups, Kortering and Elrod (1991) recommended "intense and carefully orchestrated instruction" based on assessed skill deficits, including interventions similar to direct instruction programs (e.g., Kameenui & Simmons, 1990) and "learning strategies" (e.g., Ellis, Deshler, Lenz, Schumaker & Clark, 1991; Hutchinson & Wong, 1992). Career education interventions employing cognitive instruction have been recommended for youth identified as learning disabled and all youth at risk for leaving school early (Clark, Carlson, Fisher, Cook & D'Alonzo, 1991; Rosenberg, Cheyney & Greenberg, 1991).

Another consideration in developing an effective career education program is co-operation among teachers and counsellors. One very effective program (Hazelhorn & Lombard, 1991) involved an interdisciplinary effort among special education teachers and vocational educators to deliver instructional counselling. The special education teachers provided instructional support to both students and vocational educators.

Cognitive instruction is currently a major focus in learning disabilities research (Wong, 1992). In cognitive interventions, teachers employ modelling and direct explanations of strategies. Students practise the cognitive strategies with guidance and then independently. Palincsar and Brown (1984) have taught reading comprehension effectively to youth with learning disabilities, utilizing a cognitive strategy approach. Similarly, Hutchinson (Hutchinson & Wong, 1992) has demonstrated the efficacy of cognitive instruction in her teaching of algebra word problems to adolescents with learning disabilities. The techniques that have proven successful in these areas may be used profitably in teaching youth with learning disabilities to explore themselves and career options.

OBJECTIVES

The major objectives of the present research were the development and evaluation of an instructional module. The purpose of the module was the facilitation of career awareness and career maturity in youth with special needs. The three foci for the content of the instructional module were: (a) self-assessment and self-awareness in life context; (b) acquisition of information about the nature and requirements of careers; and (c) acquisition of a strategy for integration and matching of self-assessment and career awareness through the introduction of reality testing.

The approach employed for this small-group counselling was cognitive instruction. The teacher/counsellor provided clear explanations of how to complete the activities and used modelling and thinking-aloud procedures to make her cognitive processing visible to the students. The emphasis for the students was on reflection, thinking-aloud with a partner, and discussion. The teacher/counsellor and the research team collaborated in the content and delivery of instruction and in the recommendations for improving the instructional module.

METHOD

Subjects. Two studies were conducted in a secondary school serving a rural area in Ontario. In each study, a group of students was instructed using a counselling program designed to enhance career maturity. The same instructor, a female teacher with several years of experience counselling "at-risk" students, taught both groups.

In the first study, subjects were grade 9/10 students enrolled in a special integrated basic program designed for low-achievers. These students had activities in all their core subjects modified to reflect a career emphasis. For example, their mathematics class dealt with mathematics topics they would likely encounter in a job situation. A team of teachers led by a special educator taught all the students' classes. Although as many as 16 students were present for at least part of the intervention, because of new entrants to and suspensions from the program, only 9 students (8 boys, 1 girl) were present for both the pre- and post-test. Throughout this first implementation of the module, the teacher/counsellor and a member of the research team discussed each session and modified the activity for the next session.

In the second study, the subjects were 8 grade 9/10 students (5 boys, 3 girls), identified by provincial guidelines as having a learning disability. The current provincial guidelines require that a student identified as having a learning disability be of at least average intelligence with deficits in one or more academic areas. These deficits are not primarily the result of mental retardation or environmental conditions (Ontario Ministry of Education, 1984). The 8 intervention subjects in study two were at various academic levels. Three students were registered mainly in basic-level classes, while 4 others were predominantly at the general level, and 1 student had largely advanced-level classes. The counselling intervention was part of a withdrawal program, with students being removed from regular classes to participate. As well, 8 other grade 9/10 students (4 boys, 4 girls), registered mainly in general-level classes, were pre-tested and post-tested to act as control subjects. These subjects continued in their regular classes during the course of the intervention.

Instruments. In both studies, all subjects were pre-tested and post-tested using the Employability Maturity Interview (EMI, Roessler & Bolton,

1987), an instrument standardized on disabled subjects. It consists of 10 questions administered in a structured interview format. The 10 questions give 11 item scores with question 5 being scored on two criteria. The questions on the EMI reflect different aspects of career maturity including self-awareness, knowledge of career resources, and range of career options. Each structured interview was audiotaped and scoring was done using both the audiotape and the interviewer's written record, according to the criteria provided.

Reliability and validity data for the EMI are limited. In a study involving 106 persons with disabilities, Morelock, Roessler and Bolton (1987) reported split-half correlations using the Spearman-Brown formula for three different rates ranging from .74 to .82 with a mean of .81. The authors also reported satisfactory correlations of the EMI with measures of mental ability, academic achievement, interest differentiation, work interest, and independent indices of employment potential.

Description of Intervention. The counselling program for the intervention subjects in the two studies was similar and consisted of the use of an instructional module designed to promote the career maturity of "at-risk" students. The same counsellor administered the program in both instances. Sessions were conducted in the school classroom with students sitting at desks or tables. Sessions lasted an average of 40 minutes each. For the first intervention, there were 11 sessions, while, for the second intervention, there were 12 sessions.

The instructional module is divided into three parts. The first part contains activities that focus on self-awareness. Various concepts are introduced, such as, likes and dislikes, personal needs, household chores, educational goals, and work preferences. Self-awareness is accomplished through teacher modelling of activities, student completion of activities with a partner, and class discussion. The emphasis is on cognitive processes and thinking-aloud. In the first study, the first part was completed in 5 sessions, whereas, in the second study, 7 sessions were used to finish the first part.

The second part of the counselling program allows students to explore a range of career options. The main technique by which students explore these options is a card-sorting exercise. Students are given a packet with 78 cards, each inscribed with the name of a separate career. There are 6 colours of cards and the writing on the cards is in 4 colours. In the first activity, students sort these cards into three piles, "yes," "no," and "don't know," with at least 5 cards in the "yes" pile. In subsequent activities, students examine their preferred jobs first by colour of card, indicating general area of the job, and then by colour of writing, indicating educational level required. The general areas of occupations are: working with hands or tools, helping people, serving people, working with ideas, using mathematics, and other occupations (computers, growing things, and

art-based occupations). The educational levels are: on-the-job, college, college and on-the-job, and university. Interaction among students is encouraged through partner work and group discussion. The second part of the intervention lasted three sessions in the first study and two sessions in the second study.

The third part of the counselling involves matching people with jobs. Students start by looking at fictitious people and jobs and how well they match. Next, the students consider their personal characteristics, elicited by means of a checklist, as these characteristics match jobs. For example, students would check working with ideas, working with people, or working with things, before deciding whether the personal preference matched the job under consideration. Finally, students list their desires in a future career and attempt to match employment opportunities to these desires. Teacher modelling, paired work, and class discussion are again integral components of this third part. In both studies, the third part required three sessions.

For both interventions, a member of the research team was present for each session. This person prepared field notes describing the session. In addition, all sessions of the first intervention were audiotaped and later transcribed for analysis.

RESULTS

The mean scores for the EMI for pre-test and post-test are presented in Table 1. These scores are presented by group.

TABLE 1
Mean Total Scores, Standard Deviations, and T-Test Comparisons

<i>Group</i>	<i>n</i>	<i>Pre-test^a</i>	<i>Post-test^a</i>	<i>t^b</i>
Intervention 1 (low-achieving)	9	12.33 (2.29)	16.56 (1.74)	5.20*
Intervention 2 (learning disabilities)	8	11.63 (3.62)	14.12 (4.45)	2.46*
Control	8	10.75 (3.99)	11.00 (6.14)	0.22

^a Total possible score is 22.

^b Dependent *t*-tests comparing pre-test to post-test by group.

* $p < .05$.

Note. Standard deviations are reported in parentheses.

Dependent *t*-tests were used to compare pre-test and post-test scores for each of the three groups. These tests revealed that both intervention groups were significantly better on the post-test than on the pre-test ($p < .05$). There was no significant difference between pre-test and post-test scores for the control group ($p > .10$).

Pre-test and post-test differences on mean scores between intervention group 2 and the control group were examined using independent measures *t*-tests. There were no significant differences between the groups on the pre-test and post-test ($p > .10$).

Both intervention groups were more intrinsically motivated on the post-test. They also demonstrated positive change on items dealing with future career choices, the abilities needed for a chosen career, and the reasons for a career choice. Finally, both intervention groups had a greater range of careers in mind on the post-test. These changes were not evidenced for students in the control group. All three groups, however, did improve as far as their ability to reflect on other jobs for a person like themselves and on the areas of one's own personality that must be considered in making a job choice.

Qualitative analyses of the field notes, session transcripts, and discussions with the participants in the first intervention revealed important information about the instruction. The students' attitudes and participation improved as the module progressed. In the early sessions, the students expressed discomfort while examining their personal strengths and preferences. They suggested that practical learning of subjects like auto mechanics and cooking would be more useful to them. In the later sessions, the students were more comfortable as they were learning about careers. They showed no hesitation in learning the matching strategy. Many changes were made from the planned instruction in response to expressed student concerns. The limited demands for reading and writing were further reduced. Careers in which students had expressed interest were emphasized in the second and third parts of the module. The timing of the module was changed to minimize conflict with vocational subjects in the students' schedules.

DISCUSSION

The significant differences between the pre-test and post-test results for both intervention groups on the EMI indicate that the instruction was effective in increasing the employment maturity of the students. Students who received regular classroom instruction over the same length of time did not increase significantly in employment maturity.

It appears that the first intervention group increased more than the second intervention group in career maturity. The first intervention group was comprised of low-achieving students who were identified as high risks for dropping out. They were in a special integrated basic

program in which students received instruction in their academic subjects (mathematics, science and English) that could be applied in their vocational subjects (auto mechanics, construction, food preparation). The students also ran the school's recycling program as part of their environmental science course. The special education teacher who taught the module provided instructional support to the students and the other teachers (Hazelhorn & Lombard, 1991). It seems that the combination of cognitive instruction in careers and the integrated curriculum may have resulted in the larger increase in employment maturity. In contrast, the students with learning disabilities from the second intervention group were drawn from basic, general and advanced academic streams in the school and the employment implications of core subjects were not stressed in all these levels. The curricula in their courses were not integrated. However, care should be exercised in interpreting these findings as the interventions were held at different times.

Another possible explanation for the better performance of the first intervention could be the size of the group. Although only 9 students were available for both the pre-test and post-test, as many as 16 students participated in the career exploration program during its implementation. All the students in the second intervention group were present at both testing sessions. The larger but more integrated group may have facilitated group processes, resulting in more learning.

The intervention students of both groups improved on certain aspects of employment maturity, while not on others. Specifically, exploration of career options is an area where the students gained knowledge. They were more able to choose a specific career, give reasons for that choice, and describe the characteristics necessary for the selected career. In addition, the students recognized other career options beyond their first choice. As the second two parts of the instruction deal specifically with career options, it is encouraging that the students improved in this area.

The modifications to tailor the instruction to the group, for example, the addition of occupations to the card-sorting activities based on student suggestions, reflected the high value that these students placed on skilled and semi-skilled occupations. Like the rankings of adolescents with learning disabilities studied by Plata and Bone (1989), the members of both intervention groups placed higher value on these occupations than on professional occupations. This differential emphasis may account for the disinterest that the intervention subjects expressed about the school's guidance meetings that stressed college and university programs and professional occupations.

As a preliminary exploration of a counselling module designed to increase career maturity, the present study provides valuable information. The evidence points to the value of the second and third parts of the instruction, career exploration. The first part of the instruction, self-

awareness, shows less efficacy and should be modified to achieve better results. Including activities to promote the acquisition of information about employment opportunities would also improve the module.

EDUCATIONAL SIGNIFICANCE OF THE STUDY

This study has educational significance in at least three areas. First, the intervention describes a model of collaboration among teachers, students, and researchers in developing instruction. Second, the success of the intervention shows that cognitive instruction can be used in career education for youth. Although the results from this study are tentative and form only a portion of an ongoing project on career development for youth with learning disabilities, initial indications are encouraging. Finally, this and subsequent interventions provide materials teachers can use with exceptional students and students at risk of dropping out.

References

- Billor, E. F. (1985). Career development of the learning disabled adolescent: A focus on career maturity. *Career Development for Exceptional Individuals*, 8, 17-22.
- . (1990). *History and overview*. Paper presented at the annual conference of the council for exceptional children, Toronto, ON.
- Bingham, G. (1978). Career attitudes among boys with and without specific learning disabilities. *Exceptional Children*, 44, 341-42.
- Blackorby, J., Edgar, E. & Korterling, L. (1991). A third of our youth? A look at the problem of high school dropout among students with mild handicaps. *Journal of Special Education*, 25, 102-13.
- Carnevale, A. P., Gainer, L. J. & Meltzer, A. S. (1990). *Workplace basics: The essential skills employers want*. San Francisco, CA: Jossey-Bass Publishers.
- Clark, G. M., Carlson, B. C., Fisher, S., Cook, I. D. & D'Alonzo, B. J. (1991). Career development for students with disabilities in elementary schools: A position statement of the Division on Career Education. *Career Development for Exceptional Individuals*, 14, 109-20.
- Ellis, E. S., Deshler, D. D., Lenz, B. K., Schumaker, J. B. & Clark, F. L. (1991). An instructional model for teaching learning strategies. *Focus on Exceptional Children*, 23(6), 1-24.
- Hazelhorn, M. N. & Lombard, R. C. (1991). Designated vocational instruction: Instructional support strategies. *Career Development for Exceptional Individuals*, 14, 15-25.
- Hutchinson, N. L. & Wong, B. Y. L. (1992). Intervention research in learning disabilities: A Canadian flavour. In B. Y. L. Wong (ed.), *Contemporary intervention research in learning disabilities* (pp. 214-34). New York: Springer-Verlag.
- Kameenui, E. J. & Simmons, D. C. (1990). *Designing instructional strategies: The prevention of academic learning problems*. Columbus, OH: Merrill.
- Korterling, L. J. & Elrod, G. F. (1991). Programs for mildly handicapped adolescents: Evaluating where we are and contemplating change. *Career Development for Exceptional Individuals*, 14, 145-58.
- Mithaug, D. E., Horiuchi, C. N. & Fanning, P. N. (1985). A report on the Colorado statewide follow-up survey of special education students. *Exceptional Children*, 51, 397-404.
- Morelock, K., Roessler, R. & Bolton, B. (1987). The Employability Maturity Interview: Reliability and construct validity. *Vocational Evaluation and Work Adjustment Bulletin*, 20, 53-59.

- Ontario Ministry of Education. (1984). *Special education information handbook*. Toronto, ON: Queen's Printer.
- Ontario Ministry of Skills Development. (1989). *Pathways: A study of labour market experiences and transition patterns of high school leavers*. Toronto, ON: Author.
- Palincsar, A. M. & Brown, A. L. (1984). Reciprocal teaching of comprehension fostering and monitoring activities. *Cognition & Instruction, 1*, 117-75.
- Plata, M. & Bone, J. (1989). Perceived importance of occupations by adolescents with and without learning disabilities. *Journal of Learning Disabilities, 22*, 64-65, 71.
- Roessler, R. T. & Bolton, B. (1987). *Employment Maturity Interview (EMI)*. Fayetteville, AR: Research & Training Center in Vocational Rehabilitation.
- Roessler, R. T., Hinman, S. & Lewis, F. (1987). *Manual for Work Performance Assessment (WPA)*. Fayetteville, AR: Research & Training Center in Vocational Rehabilitation.
- Rosenberg, H., Cheyney, W. & Greenberg, B. (1991). Dropout prevention in vocational special needs education. *Career Development for Exceptional Individuals, 14*, 91-100.
- Spreen, O. (1988). *Learning disabled children growing up: A follow-up into adulthood*. New York: Oxford University Press.
- Super, D. E. & Thompson, A. S. (1979). A six-scale, two-factor measure of adolescent career or vocational maturity. *Vocational Guidance Quarterly, 28*, 6-15.
- Wong, B. Y. L. (ed.). (1992). *Contemporary intervention research in learning disabilities*. New York: Springer-Verlag.

About the Authors

Nancy Hutchinson is an assistant professor at Queen's University and director of the "Pathways" project. She has several years' experience as a special education teacher. Dr. Hutchinson's particular interest is the field of learning disabilities.

John Freeman is presently working as a research associate on the "Pathways" project. Mr. Freeman has previously worked as a French immersion teacher and a teacher in a one-room school, both in Saskatchewan.

Katherine Downey is a professor at George Brown College in Toronto and a part-time student in the M.Ed. program at Queen's University. She is currently working on her thesis examining the experiences of women in non-traditional careers requiring apprenticeships.

Lisa Kilbreath is a teacher and counsellor with extensive experience working with special needs populations. She is presently co-ordinating the basic-level programs at Prince Edward Collegiate Institute in Picton, Ontario.

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Address correspondence to: Nancy L. Hutchinson, Queen's University, Faculty of Education, Kingston, Ontario K7L 3N6.

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