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Work-based Learning for Adolescents with Learning Disabilities: Creating a Context for Success

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This paper describes cases of two adolescents with learning disabilities working in automotive repair businesses as part of a workbased education program. Neither adolescent was judged to have been successful by the workplace supervisors. The frameworks chosen for analyzing these cases draw upon recent work in selfdetermination, workplace learning, and negotiating accommodations for workers with disabilities. Data for the qualitative cases consist of interviews and detailed observations. Analysis, using a contextualist perspective, provides descriptions of the contexts for the two co-operative education placements and yields four themes that appear central to success in work-based education experiences for adolescents with learning disabilities: negotiating accommodations, routines, expectations, and preparation.

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Cover Page Footnote

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Abstract

This paper describes cases of two adolescents with learning disabilities working in automotive repair businesses as part of a work-based education program. Neither adolescent was judged to have been successful by the workplace supervisors. The frameworks chosen for analyzing these cases draw upon recent work in self-determination, workplace learning, and negotiating accommodations for workers with disabilities. Data for the qualitative cases consist of interviews and detailed observations. Analysis, using a contextualist perspective, provides descriptions of the contexts for the two co-operative education placements and yields four themes that appear central to success in work-based education experiences for adolescents with learning disabilities: negotiating accommodations, routines, expectations, and preparation.

Students with disabilities face a variety of barriers in making the transition from secondary school to productive participation in employment (Human Resources Development Canada, 1998; Turnbull, Turnbull, & Wehmeyer, 2003; US Department of Education, 1999). They tend to leave school early (Phelps & Hanley-Maxwell, 1997) and even those who do graduate experience high levels of unemployment and underemployment (Blackorby & Wagner, 1996; Gerber, Price, Mulligan, & Shessel, 2004; Koch, 2000). An extensive review of research on school-to-work transitions for students with disabilities found that only 2 of 20 recommended practices consistently produced positive employment outcomes: work experience (including co-operative education) and curricula that link school- and work-based learning (Phelps & Hanley-Maxwell, 1997).

Work-based learning experiences can take many forms such as job-shadowing, entrepreneurship, co-operative education, school-based enterprise and leadership courses. Some of the learning takes place in school settings, while the workplace provides an authentic context for other curriculum outcomes. Work-based learning experiences like co-operative education provide students with disabilities with work experiences and are intended to make explicit links between school learning and workplace learning (Ontario Ministry of Education, 1999). These experiences are considered to be part of the secondary school curriculum and, as such, should provide students with disabilities with the accommodations they need to learn successfully (Benz, Yovanoff, & Doren, 1997; Stacey, 2001).

Creating contexts for success is especially relevant for students with invisible challenges such as learning disabilities. Students with learning disabilities are characterized by a disorder in one or more psychological processes which results in weak academic achievement, and they frequently experience difficulties in self-regulation and social skills (Hammett, Greene-Black, Salmon, & Mascarenhas, 2005; Stacey, 2001). When students experience difficulties in a workplace, it is unlikely that their difficulties will be attributed to a learning disability if supervisors and coworkers in the work-based learning context are unaware of the existence of the disability. If a student is to receive accommodations in a work-based learning context, it is essential that disclosure of the student's needs is part of the pre-placement process. In a recent study, only 30% of Canadian and American workers with learning disabilities disclosed their disability (Gerber et al., 2004). The dilemma for individuals with invisible disabilities is that, while they *may* be able to function without accommodations in the workplace, they also *may not* be able to function well. Choosing not to disclose means that no one knows of the disability, but it also means that effective workplace preparations and accommodations will

not be available (Allen & Carlson, 2003; Chin, Hutchinson, Versnel, Munby, & Stockley, 2007).

This paper describes the cases of two adolescents with learning disabilities who were placed in neighbourhood garages for their workplace experience in a high school co-operative education program during the winter term of the school year. In neither case was the disability disclosed to the workplace. Had disclosure occurred, the students would have been entitled to the same accommodations in their workplaces that they received in their classrooms and that were recorded in their Individual Education Plans (IEPs; Ontario Ministry of Education, 1999). Without informed and proactive partnerships between the school and these workplaces, neither student realized the potential benefits of workplace learning. One student, Laurie, left the workplace after about two months of her three-month placement, and the other student, Jerry, did not learn much, by his own admission, about being a mechanic or about how to succeed in the workplace, the two purposes he expressed for his placement. These outcomes stand in stark contrast to many of the cases we have reported in which work-based education has contributed significantly to the growth and development of adolescents with and without disabilities (e.g., Chin, Steiner-Bell, Munby, & Hutchinson, 2004; Hutchinson, Versnel, Chin, & Munby, 2008). Our analyses of the cases in this paper are informed by recent research in three fields: self-determination, workplace learning, and negotiating accommodations.

Research on Self-determination

Field, Martin, Miller, Ward, and Wehmeyer (1998) claimed that self-determination is integral to career development and to the transition from adolescence to productive adult living. Self-determination, as conceived by Field and her colleagues, is a combination of skills, knowledge, and beliefs that enable persons to engage in goal-directed, self-regulated actions. Other researchers in the field of motivation write that self-determination refers to an array of needs that can be satisfied in contexts which offer individuals feelings of competence, autonomy, and relatedness (Deci & Ryan, 1985; Ryan & Deci, 2000). The work of Deci and Ryan suggests that adolescents' self-determination, self-advocacy, and career development are more likely to be enhanced when they experience relatedness, competence, and autonomy in their classrooms and in their workplaces. In a recent study, Versnel (2005) demonstrated that when the conditions for self-determination were met, even young adolescents could self-advocate, could set goals for themselves, and could participate fully in

educational transitions. In work-based learning, experiencing conditions that promote competence, relatedness, and autonomy may be particularly important for enabling students with learning disabilities to disclose their needs, to advocate for accommodations, and to learn in the workplace.

Research on Workplace Learning

Workplace learning is different from school learning. It is informal, embedded in the routines of the workplace, and much of the knowledge required for success is tacit (Hung, 1999). Even when work-based education is part of the secondary school program, the natural curriculum of the workplace is not designed around the work experience or career development needs of the adolescent, novice worker, but rather around the needs of the workplace (Munby, Chin, & Hutchinson, 2001). Recent research in workplaces suggests that learning can be enhanced when novice workers are made aware of the routines implicit in the workplace (Munby, Versnel, Hutchinson, Chin, & Berg, 2003), and are mentored or guided in their workplace learning (Barnett, 1995; Billett, 1995; Darwin, 2000).

Billett (2001) recorded how five workplaces afforded opportunities for learning and how individuals elected to engage with the guidance provided by the workplace. He found that for adult workers, the readiness of the workplace to afford opportunities for individuals to engage in work activities and enjoy the benefits of direct and indirect support was a key determinant of the quality of learning. However, little research has followed adolescents with learning disabilities into the workplace to document their opportunities for growth in workplace learning and career development, and to recommend how barriers can be removed to alter the discouraging data on their post-school outcomes.

Research on Negotiating Accommodations

Recent case studies of adolescents with visible disabilities, such as physical and cognitive disabilities, learning in the workplace suggest that successful outcomes are dependent on the students' ability to negotiate the necessary accommodations, not just on their receiving accommodations (Hutchinson et al., 2008). Accommodations refer to "changes in all components of the job" — structural, social, and cognitive (Gates, Akabas, & Oran-Sabia, 1998). A comprehensive review of literature from a wide range of disciplines (Hutchinson et al., 2007) revealed six facets of negotiating accommodations that cre-

ate enabling workplaces for workers with disabilities: access and disclosure, structural affordances, social context, cognitive problem solving, motivation, and understanding social policy.

Access and disclosure refers to the rights of workers to accommodations in the workplace in concert with the obligation to disclose their disabilities (Canadian Human Rights Commission, 2003). Structural affordances, while typically viewed as the changes in the physical environment that make it possible for workers with disabilities to perform their duties, also include accommodations like flexible work schedules, job carving, or telecommuting options (Gates, 2000). Social context refers to the need to involve supervisors and co-workers in the activation of natural supports and in the use of educational initiatives to ensure that workplaces are characterized by social support (Williams, Barclay, & Schmeid, 2004). Cognitive problem-solving refers to a shared, negotiated process for deciding on what accommodations are needed and how they will be implemented (Shaw & Feuerstein, 2004). Motivation is key and relies heavily on goal-setting, self-advocacy, and self-regulation by the worker with disabilities to sustain the effort necessary to implement and monitor the efficacy of accommodations (Madaus, Ruban, Foley, & McGuire, 2003). Finally, the impact of social policy related to persons with disabilities in the workplace must be considered and examined (Smith, Oczkowski, Macklin, & Noble, 2003). This review suggests that each facet is necessary but not sufficient, and that each facet may need to be made enabling through the enactment of natural supports or through direct intervention.

The Current Study

The current study aimed to describe the workplace experiences of two students with learning disabilities engaged in co-operative (co-op) education, a form of work-based learning. In co-op education, schools and employers cooperate to involve students at a workplace for extended periods of time while the students remain enrolled in full-time study at school. The two adolescents whose cases are reported in this study experienced difficulties in work-based learning, with Laurie failing to complete the placement and Jerry “skipping” frequently. Consistent with Stake (2000), we designed the study to optimize understanding of the cases rather than emphasizing generalization beyond the cases. Each case was analyzed independently and then cross-case analyses were conducted (Patton, 2002). There was considerable similarity across the themes of the two cases. These qualitative analyses of observations and interviews yielded a descriptive account of the contexts of the youths’ experi-

ences in work-based learning. As well, four themes emerged that provide a robust account of the students' engaging with the affordances of these contexts: negotiating accommodations, routines, expectations, and preparation of key stakeholders. Finally, we discuss developing co-op education that creates contexts which ensure successful work-based learning for students with learning disabilities.

Method

Participants

We invited a large, comprehensive high school in the suburbs of a mid-sized city in Ontario to participate in this research. The school had a reputation for providing excellent programs for students with learning disabilities and for including exceptional adolescents in co-op education. The co-op teacher, who also had an administrative role in the school, responded enthusiastically to our invitation. In an initial interview, she nominated Laurie and Jerry who had been identified with learning disabilities, according to the Ontario Ministry of Education criteria, and who were experiencing difficulties learning in the classroom. Both adolescents agreed to being observed in the workplace and interviewed about their experiences in co-op education, and their workplace supervisors agreed to participate in the research.

Laurie, 18 years old in Grade 12, had a history of learning difficulties in reading and writing and of poor attendance. She had returned to school in the winter term, after dropping out at the end of the previous year, "because I need more credits. I want to go to college to take a mechanic's course." She described herself as "pretty good with my hands, so... I am thinking of mechanic." The previous year, she had completed a two-term co-op placement (with excellent reports from the workplace supervisor) in a garage staffed by public service employees. During the current winter term, she had requested and received a placement in a neighbourhood, three-bay garage staffed by four male mechanics (two of whom were apprentices), a male tire technician, and a female manager. The manager, Brenda, had agreed to host Laurie, the first co-op student to be placed in the garage. Brenda assigned Sam, an experienced mechanic, to oversee and help Laurie in her co-op placement in the garage.

Jerry, 16 years old in Grade 11, had a learning disability, delays in speech and language, and a serious health condition that left him very thin. He reported finding school "boring," disliking mathematics, science, and French

classes, and aspiring to train to be a mechanic in the army. Jerry's hobby was to carry out repairs on an old car that was parked in the driveway of his home, and was not currently roadworthy. He had no previous volunteer experience or work experience, and had requested a co-op placement in a hospital, a garage, or a computer repair shop. Jerry was placed in a large car dealership, which he described as "crazy, corrupted, lots of jokes." Although there were 12 mechanics, Jerry reported that he was not assigned to work with one mechanic but was "always circulating, helping everyone, all round — with the technical part but not the body shop." The owner of the dealership had assigned the shop foreman, Burt, to be Jerry's workplace supervisor. Burt ran the service department, had worked in the dealership for 20 years, and had supervised many co-op students.

Data Collection and Analysis

One researcher was responsible for each case, and conducted observations and interviews in one workplace. With the consent of the co-op student and supervisor, each researcher developed a schedule for observing in the workplace two afternoons a week for four weeks. Observations and interviews took place during the second month of each student's three-month, half-day placement in the workplace.

The formal interviews were transcribed verbatim and all names of participants and workplaces were changed to ensure confidentiality and privacy. The field notes were word-processed and all identifying information was removed. The researchers used standard methods of qualitative analysis (McMillan & Schumacher, 2001; Patton, 2002). The research on self-determination, workplace learning and previous research on co-operative education conducted by this research team provided the analytic framework. Each researcher analyzed and coded the data separately. Then the researchers worked together to reach a consensus on a common list of codes. These codes were then re-examined to determine the themes. In addition to the individual case analyses, cross-case analyses yielded the findings reported below.

Findings

We present the results of the cross-case analyses for Laurie and Jerry in five sections. The first section describes the context of each exceptional adolescent's workplace learning, followed by the following themes: *Negotiating*

Accommodations, The Role of Routines, Expectations, and Preparation of Key Stakeholders. These themes provide a robust account of the learning accomplished and the opportunities missed by two exceptional adolescents. Each section contains a general introduction followed by examples from the cases of Laurie and Jerry, and closes with a brief summary.

Workplace as Context

Analyses demonstrated the importance of context in understanding co-op experiences of adolescents with learning disabilities. Not only were the affordances offered by the workplaces critical, but also important were the students' awareness of these affordances and their willingness to engage with them.

Laurie's workplace was a busy, independent, three-bay, neighbourhood garage managed by Brenda. Brenda described the business: "We do oil changes, tire repairs, brakes, front-end work, engines, everything bumper-to-bumper on a car." The pace was fast, and the expectations for all employees were high. Brenda had volunteered to host Laurie at the garage, and assigned Sam, a qualified mechanic, to be Laurie's "sort of mentor" and "she was to go to him for direction...and she was to be a help [to the business]."

Jerry's placement was in the 14-bay, automotive garage (service department) of a large car dealership. Although some teamwork was observed, mechanics were usually assigned individual jobs. The faster they worked, the more money they made. The mechanics in the service department had little to do with other workers at the dealership, except for the parts department on which they relied for parts in a just-in-time system. Burt and the service desk staff handled customer service routines. Demands for efficiency left the mechanics little time for socializing. Some were skilled in explaining their work to Jerry, and some recognized the co-op student as an extra pair of hands; however no mechanic was assigned to supervise Jerry – Jerry was told to observe.

The workplace contexts were similar in that both demanded high efficiency of workers, offered few opportunities for conversation, and had a manager supervising the co-op student. The workplaces differed in size, in experience hosting co-op students, and, as will be seen, in the affordances or opportunities provided for hands-on learning.

Negotiating Accommodations:

“We would have given her the two explanations she needed”

From early in the data collection process, it was apparent that neither student was receiving accommodations in the workplace although the researchers had been informed by the co-op teacher that the students had Individual Education Plans and were receiving accommodations at school. Gentle questioning revealed that neither supervisor was aware the student had experienced learning difficulties at school and neither employer had been asked to provide accommodations in the workplace. The students' disabilities were invisible and the supervisors had no way of knowing that the performance challenges they observed in the students might have been due to the students having learning disabilities. Even when they experienced difficulties learning in the workplace, the students did not disclose their needs or request accommodations. Neither student seemed aware that workplace accommodations were a possibility.

The researcher conducting the case study of Laurie inadvertently revealed the lack of communication about accommodations, between the school and the neighbourhood garage, by mentioning to Brenda that all the students participating in the study had experienced learning problems at school. While the school knew the researcher would be discussing these issues, a focus of the study, with the workplace supervisor, the co-op teacher had referred only to Laurie's talent as a mechanic, not to her learning difficulties, in conversations with Brenda. Brenda registered surprise, telling the researcher that she had “assumed [Laurie] was a good student,” but after hearing about her learning difficulties said, “it all started to click.”

Brenda reported that, if she had known Laurie needed accommodations, she would have “approached it a whole different way ... We would have given her the two explanations she needed instead of giving her the one and thinking that she should have known how to do it.” But Brenda was “not sure the outcome would have been any different.” Shortly after Laurie started at the garage, Brenda telephoned the school to report her concerns about Laurie not taking initiative in the workplace, but the co-op teacher had not taken the opportunity to explain about Laurie's learning needs or to suggest Laurie might need accommodations. Brenda's advice to the school and to the student: “Give us a better history of what we are dealing with.”

Laurie was not observed to offer any information about her learning needs, to request assistance, or to ask questions when she did not understand; Brenda reported she could not remember Laurie ever asking a question. Brenda said she and Laurie's coworkers needed information about Laurie's learning

needs before they would “cut her any slack.” In trying to understand Laurie’s unsuccessful placement, Brenda drew on her experience as a co-op student during her college program in accounting. She recalled asking many questions of her coworkers and her supervisor: “They answered those questions. If you don’t ask, you don’t get that interaction, that help.”

Jerry was never observed to ask for assistance or to describe his learning needs to Burt. The researcher noted on each visit to the dealership, “Jerry needs more guidance.” Jerry’s need for guided learning in the workplace was apparently not recognized by the co-op teacher or the supervisor. Burt remained unaware throughout Jerry’s placement of his history of disabilities and accommodations in school. Close to the end of Jerry’s placement, Burt contacted the co-op teacher to report Jerry’s lack of initiative and “skipping.” By that time, Burt had devised a system that required Jerry to “punch in” because Jerry had been absent on so many occasions. Then the teacher acknowledged to Burt, in a telephone conversation, that perhaps she should have asked Jerry to tell Burt about his need for a high level of guidance.

Burt told the researcher he was “disappointed” that Jerry did not perform like previous co-op students. Because he had not been informed about Jerry’s learning needs, Burt had no reason to expect that Jerry needed more structure and guidance than previous students. An example of the degree of structure that Jerry required emerged when Jerry expressed surprise that Burt cared when he skipped going to his placement: “Normally if you miss school, like your parents would call in...I just never thought it was that important.” Jerry did not understand that the mature and responsible thing to do was to communicate with Burt in advance of his absences from the workplace. In his interview at the end of the study, Burt reported what he would do if he encountered a similar situation in the future: “If this happens [again], I think I am going to call the school...That way it doesn’t go on and on. I would change that [next time].”

Access and disclosure may be fundamental to negotiating accommodations, but these students were unaware of their rights, and neither the students nor the school commented on the missed opportunities for the students’ learning to negotiate accommodations for their future as productive adults. Both workplace supervisors suggested that after the students had been unsuccessful, they had recognized the students’ need for more structure and guidance in the workplace. Such structural affordances might have enabled success, although Brenda expressed doubt about this. While Laurie expressed that she felt a lack of support in the workplace, especially when the tasks were too hard, Jerry did not appear to recognize the difficulties he was encountering in negotiating the social context. Collaborative, cognitive problem solving might have been more

prominent if the co-op teacher had spent time in the workplaces observing the students and serving as an intermediary, but no one reported this happening during the study. While both students verbalized motivation and goals, neither persisted to reach their articulated career goals. And there was no evidence of awareness of social policies related to workplace accommodations in these two case studies.

*The Role of Routines in the Workplace:
“Every shop does it differently”*

Routines serve an explanatory function in our understanding of the workplace experiences of Laurie and Jerry during their co-op placements. Both garages had routines that were followed for completing tasks like an oil change, for maintaining a clean workplace, and for returning tools to storage. The co-op students with learning disabilities, who could be expected to benefit from a structured workplace with clear instructions about the function and nature of routines, received varying degrees of guidance. The analysis suggested that Laurie and Jerry did not recognize the role of routines in the career they aspired to, and did not show increased efficacy in carrying out routines as their placements progressed.

The neighbourhood garage had many clear routines. For example, each time a mechanic did not have a vehicle on which to work, he swept the garage floor or rolled discarded tires into the storage area. There was a routine for moving a serviced vehicle out of a bay and replacing it with the next vehicle. Brenda described how she had explained this routine to Laurie because “every shop does it differently,” and Laurie was observed to follow this routine. Brenda also described how, when Laurie arrived, she assigned Sam to “direct her into what he wanted her to do on a given job,” tried to make her feel welcome, and gave her coveralls. When asked if there was an unwritten curriculum, Brenda said, “Yeah” and described assigning Laurie tasks of increasing responsibility. “Start off with something really simple. You know, a simple oil change, balancing of tires, maybe a tire change.” Repairing flat tires, installing tires, and carrying out brake jobs were described as “more challenging.”

The researcher asked Brenda to describe a task that Laurie was seen to be struggling with during the second observation. Brenda said, “She was trying to do an axle.” For 44 minutes, Laurie tried to remove a tire from a Honda in the bay furthest from the researcher’s observation post. Finally Sam asked Laurie if she needed help. In contrast to the experienced mechanics, Laurie appeared aimless as she moved around the garage. She wandered to the tool chests, went

back to her bay empty-handed, and spoke to her co-workers infrequently, even when she could not locate the tools she needed. In contrast, the other workers strode to the tool chests purposefully, quickly picked up the tools they needed, and shouted to their co-workers when a tool was not where they expected to find it. Laurie was observed following the routines to move vehicles in and out of the bays and to change oil, albeit with less confidence and greater hesitation than her co-workers. However, she was sometimes assigned tasks (for example, “an axle”) with unfamiliar routines, and she was unwilling to ask for help. When a routine broke down, Laurie was lost unless someone came to her rescue.

In the dealership, routines were apparent in the efficient work of the experienced mechanics. All mechanics would complete a routine with one car before moving on to the next assignment from Burt, the foreman. Burt had told Jerry to attach himself to a mechanic. He was instructed to observe, to ask questions, to assist where possible, and to move later to another mechanic. The researcher never observed Jerry receiving an explanation about routines, but observed that Jerry had difficulty focusing on a routine from start to finish. He lost interest when a mechanic asked him to hold a light or pass a tool: “I get restless and move to different automotive bays when it looks more interesting.” It is easy to understand why Burt described Jerry as lacking purpose in his interactions with the mechanics; however, no clear routines had been established to structure Jerry’s time. Jerry was never observed to carry out a mechanic’s routine; however, he claimed to understand basic routines like changing oil which he said he had learned in school and had performed on the car he was repairing at home. Any questions Jerry was observed to ask were about repairs to his own vehicle rather than about the procedures he was observing in the workplace.

On one hand, Jerry’s experience with the mechanics appeared unstructured and lacking routine and purpose. On the other hand, Jerry appeared challenged by the repetitive nature of some of the routines at the dealership, and demonstrated no strategies to cope with his apparent boredom. Even if he could not enter a mechanic’s bay, he could have been assigned tasks like sweeping the floor, disposing of used oil filters, and removing debris; or he could have shown initiative and volunteered to complete these routines for maintaining a safe, clean workplace.

Neither co-op student was served well by the routines of their workplace. Laurie may have been assigned too much responsibility, and Jerry too little. Because they had neither received nor requested explicit explanations about routines, one was frustrated and the other bored. Both students missed oppor-

tunities for learning in a meaningful context with adults engaged in a career to which the students had aspired.

Expectations: "He's got to get serious"

Laurie and Jerry did not meet the expectations of their workplace supervisors, and were unclear about what was expected of them as co-op students. They did not share their supervisors' views about the co-op placement. For example, Laurie said she came "to learn" while Brenda and Sam expected her "to work."

The co-op teacher had informed the researchers and the employees at the garage that Laurie was "really keen, a go-getter," and Laurie told everyone she wanted a career as a mechanic. Brenda said she accepted Laurie as her first co-op student for three reasons: (a) Brenda saw positive reports from a previous co-op supervisor in a government-operated garage; (b) "we needed some extra help here"; and (c) she hoped to hire Laurie in "an entry level position," after the co-op placement ended. Brenda said Laurie was expected to work with minimal supervision from Sam and to "come in with a little bit of knowledge, apply what [she] had already learned."

In an informal discussion with the researcher following the observation in which she had experienced difficulty with the axle, Laurie suggested that she could not find the tools she needed because they had not been returned to the toolboxes. She said she should not be expected to work as hard or as independently as the mechanics in the garage and expected "more help" than she was getting. She reminded the researcher that she was still a student and was there "to learn." About the same incident, Brenda told the researcher in a formal interview that she did not think "the problem was misplaced tools," but rather, "I don't think she really comes here to work." She described Laurie as "not sure what [tool] she's supposed to be after...so instead of maybe taking two because you're not sure" she wandered aimlessly back and forth with one tool at a time, lacking initiative.

Laurie was not at the workplace one day when the researcher arrived to conduct an observation. Brenda explained, "She may not show today. She had a bad day yesterday." Brenda described how it had been very busy and one mechanic was off sick. At one point, Sam saw Laurie without a vehicle to work on, and told her in a harsh tone to "do something." In response, Laurie aimlessly pushed a broom without sweeping any debris, and stepped over a pile of tires awaiting removal to storage instead of following the routine of

rolling them into the storage area. Brenda described how Sam raised his voice, "If you are going to come to work here, come with some enthusiasm." Laurie immediately hung up her coveralls and walked out of the garage. Brenda and the mechanics expressed their uncertainty about whether Laurie "can't do it, or doesn't want to." Given the positive reports from Laurie's previous co-op placement, they wondered what had "gone wrong here." Laurie never returned to the garage.

At the dealership, Burt expected Jerry to show initiative and independence. However, for the first month Jerry expected that his regular school behaviours, like skipping, would be accepted by the garage because they seemed to him to be accepted by the school. Burt reported that he neither "chased" Jerry to ensure his attendance at the garage nor requested that Jerry withdraw from the placement; thus Jerry seemed surprised to learn that Burt was concerned about his absences. Burt was clear that the "dealership participated in the co-op education program to provide students with an interest in the auto industry with a chance to learn about the trades." He did not accept responsibility for "following a student around" and believed that, to be successful in the auto industry, "people need to be self-disciplined." Although Jerry was not assigned specific responsibilities like Laurie, he was expected to show interest and readiness to be productive in the workplace. Burt said, "Dedication, direction, where am I going to be, why am I here? He did not come across as having that." If he wants to make this his life's work, "he's got to get serious...he seems to be just passing the time." Jerry's descriptions of moving from one mechanic's bay to another mechanic's bay to stave off boredom sounded eerily like Burt's words, "just passing the time."

Laurie expected to come to the garage to learn while Brenda and Sam expected her to come to the garage to work. Jerry expected to pass the time and relieve boredom by moving around the bays, when he felt like being at the garage, while Burt expected dedication and self-direction. Expectations did not match and were not well articulated by supervisors or co-op students. These unarticulated mismatches contributed to the students' not succeeding and not feeling successful in work-based education.

Preparation of Key Stakeholders: "More prepared for the realities"

Although workplace supervisors, co-workers, and co-op students need to prepare for the entry of all co-op students into the workplace, both employers suggested ways schools and workplaces could raise the level of preparation when the co-op students have learning disabilities.

Brenda thought schools could use workers like Sam to help prepare exceptional students for the realities of the workplace, because “Sam came from the same kind of background, not getting through school very well.” She suggested that students need to be familiarized with the realities of the workplace — they will have to ask questions and should not feel they have to know everything. She recommended hands-on experiences including observations of workplaces with no expectation to work, because “you have a different attitude if you’re just here to watch or when you are coming to put in your two and a half hours.” She did not suggest that employers prepare students by allowing them to observe at the beginning of the co-op placement. The co-op teacher could have prepared Brenda and her staff by suggesting that Laurie should observe and ask questions before being asked to contribute “some extra help,” especially in light of Laurie’s history of learning problems. While Brenda saw Laurie as ill-prepared, Laurie suggested that the workplace needed to be informed that she was “just a student.”

Because of inadequate preparation of all concerned, Jerry’s co-op placement did not produce optimal outcomes for any stakeholder. Jerry, who had never been in a workplace as an employee or volunteer, was not prepared for the responsibilities that accompany participating in an adult context. Burt suggested that youth like Jerry needed to be taught how the workplace differed from school. The researcher observed that Burt could have provided more structure had he been better prepared by the school for Jerry’s need for direction and had Jerry been prepared to tell Burt about his learning disability, including the fact that, as Jerry told the researcher, he needed “to be able to see things to learn, listening alone was not good.”

Laurie and Jerry were not adept at preparing their employers to help them, and it appeared that no one else had conducted pre-placement preparation that would have ensured successful workplace learning. So it fell to the youngest and least experienced to broker relations between school and employment, in workplaces ill-prepared to meet the needs of co-op students with disabilities.

Discussion

The findings provide a robust account of missed opportunities as two adolescents with learning disabilities tried to cope in contexts and with co-workers who did not know that the students might require accommodations. While this is a small study examining cases in only one school and two workplace

settings, the findings support previous studies that articulate the limitations of work-based learning opportunities for students with disabilities (Benz et al., 1997). In our previous studies of adolescents without learning disabilities, youth have come to understand the routines of workplaces and the demands of careers to which they aspired (Hutchinson et al., 2001). For example, we have observed a young woman grow from a hesitant observer, sickened by watching a dental procedure, into a valued member of the team who could assist the dentist with confidence and anticipate his needs (Chin et al., 2004). Our observations and interviews of Laurie and Jerry recorded frustration and boredom, and served as a reminder that for youth with disabilities, participation is not enough to ensure work-based learning. In previous cases of adolescents with visible disabilities, we have observed workplace supervisors both providing accommodations that had been suggested by the co-op teacher and negotiating accommodations suggested by a self-advocating student (Hutchinson et al., 2008). However, those students had no opportunity to choose not to disclose or to ignore opportunities to disclose their disabilities. One had only to look at them to recognize the presence of a disability. The current case studies confirm the challenges of invisible disabilities and the need for students with learning disabilities to be aware of and accepting of their needs and strengths (Gerber et al., 2004; Stacey, 2001). It appears that the role of youth with learning disabilities in negotiating accommodations is inescapable and the six-facet model may have utility in informing this process (Allen & Carlson, 2003; Hammett et al., 2005; Hutchinson et al., 2007; Hutchinson et al., 2008).

The workplaces we observed in these two case studies afforded few opportunities for the co-op students to engage in meaningful activities that were just beyond what they could already do. Yet researchers argue that this is what enables the learner to experience feelings of competence (Ryan & Deci, 2000) and to advance (e.g., Hung, 1999). Jerry spent most of his time watching, not doing, and Laurie was invited to work like an employee, not to learn like a student. Supervisors rarely provided guided explanations and the youths rarely asked questions. Affordances in workplaces, the factors that enhance learning, include many forms of extending invitations, and of providing direct guidance and indirect support (Billett, 2003). These affordances have been shown to benefit adults' learning in the workplace. Adolescents with learning disabilities, who have IEPs and accommodations at school, may have even greater needs for such affordances in the workplace. These students reported little experience of feeling related to their coworkers or having choices in carrying out their tasks, while Ryan and Deci (2000) have emphasized that both relatedness and autonomy contribute to self-determination and to persisting in the face of obstacles.

To enhance their own work-based learning, students with learning disabilities in co-op education must recognize and engage with the affordances offered. Routines may offer an expedient way to increase this engagement. Laurie and Jerry demonstrated awareness of the routines in their workplaces. But neither showed the gradually increasing engagement with routines that we saw in a young woman in a hospital who took the initiative to turn a mundane job assisting an orderly into an opportunity to assess whether or not she wanted to pursue a career as a social worker (Versnel, 2001). By teaching adolescents how to recognize the routines implicit in a workplace context, educators would be teaching knowledge that can be used to analyze any workplace. Observations of a wide range of workplaces have suggested that efficient workers, adults and adolescents, implicitly recognize: the functions routines serve in meeting the purposes of the workplace, the cues that start a routine, characteristics of an aborted routine, and the signs that a routine is coming to a close. With this knowledge, workers can suggest improvements to routines, can anticipate the non-routine, and can solve novel problems (Munby et al., 2001; Versnel & Hutchinson, 2001). We recently demonstrated in a small-scale, instructional study that students could be taught about the implicit nature of routines and were prepared to inquire about the routines they saw and the routines they didn't see in their co-op education workplaces (Munby, Zanibbi, Poth, Hutchinson, & Chin, 2007). If schools prepared adolescents and workplace supervisors appropriately, then the latter would be better positioned to provide guidance, explanations, and clear expectations for adolescents' engagement with the routines. Co-op students could be expected to observe, to demonstrate understanding, to engage peripherally, and finally to participate fully. Future research also is needed to explore the veracity of the six-facet model for negotiating accommodations as a framework for schools to use in the preparation of workplaces for students with disabilities.

In previous studies, we have heard dental assistants, veterinarians, and laboratory scientists articulate such a sequence, but they have done so in response to co-op students' taking increasing initiative, asking questions, and demonstrating competence (Chin, Munby, & Hutchinson, 2000). Our research suggests that both co-op students with learning disabilities and workplace supervisors of such students must be prepared to carry out a deliberate process of workplace initiation, rather than each waiting to respond to the other's lead. The co-op teacher's function is to prepare all the stakeholders for these complex interactions.

References

- Allen, S., & Carlson, G. (2003). To conceal or disclose a disabling condition? A dilemma of employment transition. *Journal of Vocational Rehabilitation, 19*, 19-30.
- Barnett, B. G. (1995). Developing reflection and expertise: Can mentors make the difference? *Journal of Educational Administration, 33*, 45-59.
- Benz, M. R., Yovanoff, P., & Doren, B. (1997). School-to-work components that predict post-school success for students with and without disabilities. *Exceptional Children, 63*, 151-165.
- Billett, S. (1995). Workplace learning: Its potential and limitations. *Education & Training, 37*, 20-27.
- Billett, S. (2001). *Learning in the workplace: Strategies for effective practice*. Crowsnest, New South Wales: Allen & Unwin.
- Billett, S. (2003). Workplace mentors: Demands and benefits. *Journal of Workplace Learning, 15*, 105-113.
- Blackorby, J., & Wagner, M. (1996). Longitudinal post-school outcomes of youth with disabilities: Findings from the National Longitudinal Transition Study. *Exceptional Children, 62*, 399-413.
- Canadian Human Rights Commission. (2003). *A place for all: A guide to creating an inclusive workplace*. Ottawa, ON: Author.
- Chin, P., Hutchinson, N. L., Versnel, J., Munby, H., & Stockley, D. (2007, April). *Obligation and irony in workplace accommodations: A case study in a large corporate office*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Chin, P., Munby, H., & Hutchinson, N. L. (2000). Workplace learning from a curriculum perspective. In C. Symes (Ed.), *Working knowledge: Conference proceedings* (pp. 317-323). Sydney, Australia: The University of Technology.
- Chin, P., Steiner-Bell, K., Munby, H., & Hutchinson, N. L. (2004). Epistemological appropriation in one high school student's learning in cooperative education. *American Educational Research Journal, 41*, 401-417.
- Darwin, A. (2000). Critical reflections on mentoring in work settings. *Adult Education Quarterly, 50*, 197-211.

- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Field, S., Martin, J., Miller, R., Ward, M., & Wehmeyer, M. L. (1998). Self-determination for persons with disabilities: A position statement of the Division on Career Development and Transition. *Career Development for Exceptional Individuals*, 21, 113-128.
- Gates, L. B. (2000). Workplace accommodation as a social process. *Journal of Occupational Rehabilitation*, 10, 85-98.
- Gates, L. B., Akabas, S. H., & Oran-Sabia, V. (1998). Relationship accommodations involving the work group: Improving work prognosis for persons with mental health conditions. *Psychiatric Rehabilitation Journal*, 21, 264-272.
- Gerber, P. J., Price, L. A., Mulligan, R., & Shessel, I. (2004). Beyond transition: A comparison of the employment experiences of American and Canadian adults with LD. *Journal of Learning Disabilities*, 37, 283-291.
- Hammett, C., Greene-Black, J., Salmon, J. D., & Mascarenhas, G. (2005). *Benchmarking: A guide to hiring and managing persons with learning disabilities*. Toronto, ON: ALDER.
- Human Resources Development Canada. (1998). *Ensuring opportunities: Access to post-secondary education (Response to the first report of the Standing Committee on Human Resources Development and the Status of Persons with Disabilities)*. Ottawa, ON: Author.
- Hung, D. W. L. (1999). Activity, apprenticeship, and epistemological appropriation: Implications from the writing of Michael Polanyi. *Educational Psychologist*, 34, 193-205.
- Hutchinson, N. L., Steiner-Bell, K., Munby, H., Chin, P., Versnel, J., & Chapman, C. (2001). Multiple-perspectives on the purposes of high school cooperative education: A qualitative study. *Journal of Cooperative Education*, 36, 73-85.
- Hutchinson, N. L., Versnel, J., Chin, P., & Munby, H. (2008). Negotiating accommodations so that work-based education facilitates career development for youth with disabilities. *WORK*, 30, 123-136.
- Hutchinson, N. L., Versnel, J., de Lugt, J. S., Chin, P., Munby, H., Stockley, D., & Berg, D. H. (2007, April). *Creating enabling workplaces for workers with disabilities: Education for negotiating accommodations*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

- Koch, L. C. (2000). Career development interventions for transition-age youths with disabilities. *WORK, 17*, 175-181.
- Madaus, J. W., Ruban, L. M., Foley, T. E., & McGuire, J. M. (2003). Attributes contributing to the employment satisfaction of university graduates with learning disabilities. *Learning Disability Quarterly, 26*, 159-170.
- McMillan, J. H., & Schumacher, S. (2001). *Research in education: A conceptual introduction*. (5th ed.) New York: Longman.
- Munby, H., Chin, P., & Hutchinson, N. L. (2001). Co-operative education, the curriculum, and working knowledge. In D. Trueit, W. Doll, H. Wang, & W. Pinar (Eds.), *The internationalization of curriculum* (pp. 205-218). New York: Peter Lang.
- Munby, H., Versnel, J., Hutchinson, N. L., Chin, P., & Berg, D. (2003). Workplace learning and the metacognitive functions of routines. *Journal of Workplace Learning, 15*, 94-104.
- Munby, H., Zanibbi, M., Poth, C., Hutchinson, N. L., & Chin, P. (2007). Metacognitive instruction for adolescents in the workplace: A self-questioning strategy. *Education & Training, 49*, 8-24.
- Ontario Ministry of Education. (1999). *Co-operative education and other forms of experiential learning: Policies and procedures for Ontario secondary schools*. Toronto, ON: Author.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Phelps, L. A., & Hanley-Maxwell, C. (1997). School-to-work transitions for youth with disabilities: A review of outcomes and practices. *Review of Educational Research, 67*, 197-226.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation. *American Psychologist, 55*, 68-78.
- Shaw, W. S., & Feuerstein, M. (2004). Generating workplace accommodations: Lessons learned from the integrated case management study. *Journal of Occupational Rehabilitation, 14*, 207-216.
- Smith, A., Oczkowski, E., Macklin, R., & Noble, C. (2003). Organisational change and the management of training in Australian enterprises. *International Journal of Training and Development, 7*, 2-15.
- Stacey, W. A. (2001). The stress of progression from school to work for adolescents with learning disabilities. What about life progress? *WORK, 17*, 175-181.

- Stake, R. (2000). Case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 435-534). Thousand Oaks, CA: Sage.
- Turnbull, H. R., Turnbull, A. P., & Wehmeyer, M. L. (2003). A quality of life framework for special education outcomes. *Remedial and Special Education, 24*, 67-74.
- U.S. Department of Education. (1999). *Twenty-first annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. Washington, DC: Author.
- Versnel, J. (2005, May). *Transition Preparation Program: Linking motivation and learning strategies for youth facing challenging transitions*. Poster presented at the annual meeting of the Canadian Society for the Study of Education, London, ON.
- Versnel, J. (2001). *Learning in a hospital: A case of a co-operative education student*. Unpublished manuscript, Queen's University, Kingston, ON.
- Versnel, J., & Hutchinson, N. L. (2001, November). *Preparing for the world: Self-determination at work*. Paper presented at the annual provincial conference of the Council for Exceptional Children, Stratford, ON.
- Williams, P., Barclay, L., & Schmeid, V. (2004). Defining social support in context: A necessary step in improving research, intervention, and practice. *Qualitative Health Research, 14*, 942-960.

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