Augmented Education: Effectiveness of a new employment training and support model for people with mental illness

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Executive Summary

Background

Many people living with mental illness and/or addiction are unemployed or underemployed. Supported employment is an evidence-based best practice for supporting people to return to work and procure 'competitive employment', that is, a paid position that anyone can apply for and which has not been specifically earmarked for persons with a mental illness and/or an addiction. Studies have found that whether or not a person has worked prior to participation in a supported employment program is a predictor of whether or not they will return to work after completing the supported employment program. Research has also shown that while a fair number of supported employment program graduates have competitive employment a year after completing such programs, job retention beyond the one year mark wanes. There are two implications of this finding. First, additional strategies would appear to be needed to strengthen labour force participation by persons with a mental illness and/or an addiction. Second, research on innovative supported employment strategies need to explore employment outcomes beyond the first year post-graduation.

Study Aims

Given the importance of having a post-secondary education for accessing the majority of paid positions, George Brown College and the Centre for Addiction and Mental Health in Toronto worked collaboratively to create the Augmented Education program, which is delivered through the College. Augmented Education[1] is an innovative model that combines elements of supported employment (e.g., job coaching) with supported education (e.g., make up tests, additional teaching labs). This report describes the findings of a prospective longitudinal study aimed at evaluating the effectiveness of the AE model in helping individuals graduate from college, and acquire and sustain competitive employment over a two-year period More specifically, the study aimed to answer the following four questions:
1) Do Augmented Education program graduates acquire and sustain competitive employment?
2) To what extent does participation in Augmented Education programs affect clinical functioning as assessed by hospitalizations and change in mental health status?
3) What clinical and non-clinical factors are related to graduation from Augmented Education and employment success?
4) What benefits aside from acquiring and sustaining competitive employment are accrued through participation in Augmented Education programs?

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[1] A document describing the model is available from the third author.

Method

There are currently two streams of the Augmented Education program offered at George Brown College – the Assistant Cook Extended Training program and the Construction Craft Worker Extended Training program. Data were gathered from 123 students of both streams who began the program between April 2004 and April 2008 and agreed to participate in the study. Data collected from students at program entry, program completion, 12-month follow up, and 24-month follow up included: demographic characteristics, prior work history, psychiatric diagnosis, psychiatric symptoms, recovery, and employment outcomes. These quantitative data were used to address the first three study questions and semi-structured interviews were held with 13 key informants (program instructors, student employers and Augmented Education program staff) to address the last study question.

Key Findings

1) Do Augmented Education program graduates acquire and sustain competitive employment?

Yes. Augmented Education graduates acquire and sustain competitive employment with 61 % of graduates being employed a year after and 58 % of graduates being employed two years after completing an Augmented Education. Of those employed a year after graduation, 72% were working in the industry that they were trained in (i.e., cooking or construction) and this figure decreased to 55% two years after graduation. The number of days worked in the two years prior to commencing Augmented Education was positively related to the number of days worked at 2-year follow-up. By contrast, graduation was not associated with days worked at 2-year follow-up

2) To what extent does participation in Augmented Education programs affect clinical functioning as assessed by hospitalizations and change in mental health status?

Augmented Education program participation appears to have had little or no effect on clinical functioning; however, hospitalization prior to participating in Augmented Education was found to be related to whether or not a person graduated from the program. These findings highlight the need for adequate clinical supports both within and linked to Augmented Education programs. Students may not have had adequate clinical supports and this may have contributed to program non-completion. Because half of non-completers voluntarily withdrew from the programs, it is important to assess student motivation for attending Augmented Education and to consider modifying admission criteria, or enhancing clinical and program supports.

3) What clinical and non-clinical factors are related to graduation from Augmented Education and employment success?

It is unclear what clinical and non-clinical factors are related to graduation and employment success due to the high rate of study attrition. Future research on this

program might benefit from increasing study honoraria and/or making research/evaluation participation a mandatory component of Augmented Education program acceptance. It might also benefit from a combined methodology that includes information from student files, and clinician and/or program staff ratings.

4) What benefits aside from acquiring and sustaining competitive employment are accrued through participation in Augmented Education programs?

Participation in Augmented Education appears to contribute to empowerment, moving beyond the illness, and being connected to society. Moreover, the Augmented Education program completion rate of 57.2% is comparable to the completion rate across all programs offered at George Brown College, which points to the immense value of Augmented Education in supporting students. That many students are also entering competitive employment following program completion further highlights the supported employment facets of Augmented Education. Together, these findings demonstrate that individuals with mental illness have the capacity to complete post-secondary education and acquire gainful employment. These findings are also rather positive given the infancy of the Augmented Education programs.

Introduction

The value of competitive employment (i.e., occupying a paid position that pays at least minimum wage and to which anyone can apply for as it has not been specifically earmarked for persons with a mental illness and/or an addiction; Bond et al., 2001) for the maintenance and improvement of mental health is widely supported (Waghorn & Lloyd, 2005). Yet, the development of mental illness[2] often impedes participation in employment and may result in an exit from the workforce, depending on the severity of the illness. Clearly, recovery and return to work are highly linked; however, improved methods to facilitate these goals are necessary. Augmented Education[3] is a novel approach that addresses the employment and education needs and barriers experienced by individuals with mental illness. The current research represents a preliminary examination of this unique approach and examines factors that may be linked with student success.

Considerable research has demonstrated the benefits of education and competitive employment for people with mental health and addiction problems (Bond, 2004; Magura, Staines, Blankertz, & Madison, 2004; Waghorn & Lloyd, 2005). Without employment, individuals with mental illness face alienation, high levels of boredom, substance abuse, apathy, isolation, and deteriorating mental and physical health (Leff & Warner, 2006). With employment, individuals experience benefits such as improved functioning (Anthony, Rogers, Cohen, & Davies, 1995; Bond et al., 2001), enhanced quality of life (Arns & Linney, 1995), and the alleviation of poverty (Polak & Warner, 1996). Moreover, being involved in work and vocational training reduces hospital admissions (Brekke et al., 1999), healthcare costs (Warner, Huxley, & Berg, 1999), and symptoms (Bond, 2001; McFarlane et al., 2000). Further, it improves an individual's self-esteem (Brekke et al., 1993) and social networks (Angell & Test, 2002). All of these factors contribute to the capacity to live independently and have a decent income.

Among individuals with disabilities, people with mental illness experience the second highest rate of unemployment (Statistics Canada, 2008). Yet research has shown that individuals with mental illness value work, are motivated, and can successfully work across a variety of jobs requiring different skill levels (Crowther, Marchsall, Bond, & Huxley, 2001; Waghorn & Lloyd, 2005). Certainly, equitable access to employment resources and opportunities is a right for this marginalized population. Still, we find an approximately 80% unemployment rate for individuals with more disabling forms of mental illness, such as schizophrenia, who wish to return to work (World Health Organization, 2000). Others have reported unemployment rates ranging between 61% and 90% (Crowther, Marshall, Bond, & Huxley, 2001; Marwaha & Johnson, 2004). As such, a focus on innovative return-to-work strategies is paramount.

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[2] For the present study 'mental illness' was taken to mean any disorder diagnosed using the criteria and dimensions outlined the in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-1V)* of the American Psychiatric Association.
[3] See Augmented Education Fidelity Manual entitled, "*Augmented Education: Helping Dreams Come True*" available from the third author.

Benefits of Post-Secondary Education to Employment

Developing an integrated model of education and employment supports reflects the reality that labour market success for individuals with mental illness is undoubtedly linked to level of education, especially post-secondary education (Liebert, 2003; Waghorn, Chant, & Whiteford, 2003). In the current labour market, workforce participation is fundamentally linked to education and training. Recognizing this, one study reported that 58% of people with a mental illness want to start or return to college (Lieberman, Goldberg, & Jed, 1993). Diplomas and advanced degrees are typical pre-requisites of professional and skilled occupations and individuals with education beyond high school generally earn higher wages and better benefits as compared to individuals with high school or less (Chung, 2004). Moreover, among the general population, post-secondary education is associated with nearly a twofold increase in the likelihood of moving out of low-paying jobs (Janz, 2004). Employment and income are valued outcomes of higher education and often assist individuals with mental illness in moving out of poverty and attaining a good quality of life.

Other Benefits of Post-Secondary Education

Individuals with mental illness also experience other benefits from post-secondary education, beyond attaining competitive and meaningful employment. Advanced education provides individuals with mental illness with opportunities for personal development and enhancing critical thinking skills (Unger, 1990). Others (e.g., Coorigan, Barr, Driscoll, & Boyle, 2008) have reported that individuals with mental illness report a desire to return to school in order to enhance personal growth. Education also provides individuals with mental illness an opportunity to integrate into the community, to promote recovery, and to maintain self-esteem (Albert, 1971; Soydan, 1994). Such non-academic skills are important for assisting individuals with mental illness in building social skills and self-confidence necessary for entering the workforce and overcoming other challenges (Paul, 2000).

Barriers for Persons with a Mental Illness in Accessing Post-Secondary Education

Although numerous benefits are accrued from education, such positive outcomes rely on access to such education. Individuals with mental illness often have difficulty accessing and completing post-secondary education (Kessler et al., 1995). People with mental illness face barriers to higher education just as do people without mental illness (e.g., inability to access financial aid) but face additional challenges: stigma, discrimination from instructors, onset of psychiatric illness, and past educational failures (Mowbray et al., 2005; Unger, 1994). Moreover, they are often confronted with unsupportive and unwelcoming academic environments (Bateman, 1997) and mental health professionals who believe they are not able to complete post-secondary education (Unger, 1994). Hence, people with mental illness may require additional supports with respect to managing stress and coordinating mental health and academic services to achieve academic success (Coorigan et al., 2008).

Coupled with the barriers to accessing post-secondary education are problems with program completion. Although some research has indicated that approximately 40% of individuals with mental illness have some post-secondary experience, these individuals are less likely than their non-disabled counterparts to maintain enrolment or graduate

(Soydan, 2004). Others have also reported that graduation rates and post-secondary attendance are lower for individuals with disabilities, including those with mental illness, as compared to individuals without disabilities (Benz, Lindstrom, & Yovanoff, 2000). Stein (2005) reported that individuals with mental illness are often concerned about not being able to complete a post-secondary program because of the re-emergence of symptoms that may increase the likelihood of missing classes and failing courses. Clearly, mental illness is associated with major impediments to the completion of post-secondary education and evidence-based programming, such as supported education, is needed to address the needs of these individuals.

Supported Education and Supported Employment

Supported education represents a best practice in ensuring access to and completion of post-secondary education. Supported education prepares people with mental illness to achieve post-secondary education goals by increasing individual skills, increasing support within the environment, and maximizing the fit between the individual and the environment (Unger, 1990; Unger, Pardee, & Shafer, 2000). Typically, it involves educational counselling, tutoring, mentoring, academic skill building, make-up classes, study skill development, smaller class sizes, tutoring, in-classroom coaching, and altered testing methods (Soydan, 2004). Research has demonstrated the immense value of these supports for assisting individuals with mental illness to attain higher education, improve their quality of life and self-esteem, and acquire employment (Best, Still, & Cameron, 2008; Collins, Mowbray, & Bybee, 2000; Gutman, 2008; Kessler et al., 1995; Liebert, 2003; Unger, 1990). However, additional methods that complement supported education services and further facilitate employment are necessary.

To this end, supported employment services have been shown to be very successful (Bond, 2004). Supported employment is a well-defined approach that helps individuals with mental illness acquire and sustain competitive employment in integrated settings, and provides ongoing job supports to help individuals succeed on the job or transition to another job (Bond, 2004). It emphasizes rapid job search, job matching based upon clients' skills and interests, and minimal pre-vocational preparation. Supported employment has been shown to lead to both competitive employment and improvement in life satisfaction and other indices of mental health (Waghorn & Lloyd, 2005; Leff & Warner, 2006).

The Individual Placement and Support (IPS: Bond, 1998) model of service delivery for working with people with mental illness is a refinement of the supported employment model and has proven successful through numerous randomized controlled trials (Bond, Drake, & Becker, 2008). The IPS model is, therefore, evidence-based and operates on the following principles: 1) all clients are eligible for support, regardless of work record, work-readiness, or current symptoms, 2) mental health and vocational rehabilitation services are integrated, 3) competitive employment is the goal, 4) rapid job search and placement lead to better work outcomes, without preparatory training, 5) the client's preference for job-type is paramount, 6) ongoing support and assessment after job placement are keys to success, and 7) assistance with understanding and negotiating the disability benefits system is provided. Job development is another component of supported employment, and is considered critical to successful outcomes for people with mental illness (Leff et al., 2005). Job development methods include framing jobs in terms

of employer needs, developing and maintaining contacts with prospective employers and employers who have hired persons with mental illness in the past, and promoting a strengths-based model of employment for people with mental illness such that employment opportunities are created that focus on client ability rather than disability.

Previous research has demonstrated that successful outcomes from supported education programs and supported employment programs are associated with factors such as being married (Collins, Mowbray, & Bybee, 2000), having recent prior educational experience (Reifler & Liptzin, 1969), having fewer and less recent hospitalizations (Unger, Pardee, & Shafer, 2000), having a shorter illness duration and later illness onset (Turnbull, George, Landerman, Swartz & Blazer, 1990), having social supports (Collins, Mowbray, & Bybee, 2000), and having been involved in recent competitive employment (Benz, Lindstrom, & Yovanoff, 2000; Collins, Mowbray, & Bybee, 2000). Researchers have also reported that factors such as adherence to a medication routine, stable housing, and being motivated to attend a program regularly are related to successful outcomes (Gutman, 2008).

The Present Study

Given the success of both supported education and supported employment, it is important to develop and examine an integrated program that captures the best practices inherent in each and the factors that influence program completion. George Brown College and the Centre for Addiction and Mental Health in Toronto have worked collaboratively to develop the Augmented Education program, which integrates elements of supported employment and supported education. Augmented Education is offered at George Brown College in Toronto and currently has two streams – the Assistant Cook Extended Training (ACET) program and the Construction Craft Worker Extended Training (CCWET) program. ACET was the initial Augmented Education program offered with the first session being held between April and September 2004. Since then the program has been offered annually. Program staff learned from their experience with this program, and in April 2007 launched the CCWET program. Augmented Education is unique in that it offers college curricula that directly prepares individuals for competitive employment by providing training that is consistent with industry recognized apprenticeship requirements. Incorporating practices of supported employment and supported education, curricula are modified for the target group to include accommodations such as delivery over a longer period of time, additional tutorials and labs, and the inclusion of practical training through student work placements. Supports and modifications provided to the students also extend to the modifications needed in policies, practices, and procedures of the academic environment including altering program admission requirements and recruitment methods, and ensuring students have adequate housing, financial assistance, and clinical supports. Augmented Education program staff include a manager and job developers/coaches who help to create and sustain competitive job opportunities for students and continue to provide support post graduation.

The aim of the present study was to assess the effectiveness of ACET and CCWET programs in helping students attain competitive employment post-graduation

and the factors that relate to program completion and the acquisition of competitive employment. More specifically, the study sought to answer four questions:

1) Do Augmented Education program graduates acquire and sustain competitive employment?

2) To what extent does participation in Augmented Education programs affect clinical functioning as assessed by hospitalizations and change in mental health status?

3) What clinical and non-clinical factors are related to graduation from Augmented Education and employment success?

4) What benefits aside from acquiring and sustaining competitive employment are accrued through participation in Augmented Education programs?

Method

Participants:

Students are made aware of Augmented Education programs by clinicians of the Centre for Addiction and Mental Health, service providers of other organizations, recruitment efforts of program staff, and through publicly available web-based materials. Applicants to Augmented Education undergo a comprehensive selection process including: completion of an application package, a panel interview, and a simulation exercise to ensure readiness to work with relevant equipment. All students offered admission into the first five classes of ACET (April 2004 – 30 students, January 2005 – 23 students, January 2006 – 27 students, January 2007 - 26 students, and January 2008 – 30 students) and the first two classes of CCWET (April 2007 – 25 students, and April 2008 – 27 students) were invited to participate in this research. George Brown College enrols no more than 30 individuals in each class of ACET and CCWET; however, across each of the program waves, program non-completion has ranged from 40% for CCWET Wave 1 to 74% for ACET Wave 3, with an average completion rate across all seven classes of 57.2%.

Participation in the study was voluntary. Of the 188 eligible students, only 123 agreed to participate. Not all of these students participated at every data collection point. Thus, 123 is the total number of unique individuals from whom we collected data directly. We also had application data for 145 of the 188 students as the program no longer retained application data for some of the students in the first three ACET classes. Over time, the program has bolstered its internal data tracking and retention capacity.

Measures:

Quantitative Data

Individual Characteristics. The Canadian Version of the Psychosocial Rehabilitation (PSR) Toolkit (Arns, 1998), a measure designed for use with people with mental illness, was used to assess each participant's socio-demographic characteristics, including age, gender, ethnic group, civil status, education, residential status, and financial situation. Prior work history was determined via self-report, including the number of jobs held in the past eight years, hours worked, wages earned, and job tenure. Job type and characteristics were retrospectively defined according to PSR Toolkit definitions.

Psychiatric Diagnosis, Symptoms, and Functional Abilities. Psychiatric diagnosis was assessed via self-report upon application to the program. Beyond this self-report, psychiatric symptoms and functional abilities were assessed with the Behavior and Symptom Identification Scale (BASIS-32; Eisen, Dill, & Grob, 1994). The BASIS-32 is designed to assess a client's perspective on his or her level of difficulty with a broad range of symptoms and problems over the past week (e.g., "To what extent are you having difficulty in the area of fear, anxiety, or panic"). Difficulty is rated on a 5-point scale ranging from 0 = no difficulty to 4 = extreme difficulty. A total score and five subscales can be used; however, the current research focused on the overall mean score, which has been demonstrated to have an internal consistency of .89. In the current research, internal consistency was found to be slightly more reliable at .95.

Recovery. The Recovery Assessment Scale (RAS: Corrigan, et al., 2004; Giffort, et al., 1995) was used to assess recovery. This 41-item self-report scale measures aspects of recovery on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Sample items include "I can identify what triggers the symptoms of my illness" and "I can handle it if I get sick again". Although reliable subscales reflecting difference facets of recovery exist for this measure, the current research employed the total score. Research by Corrigan et al. (2004) has demonstrated adequate reliability and validity indices for the RAS. In the current study, Chronbach's alpha was .93.

Employment Outcomes. The number of jobs held, hours worked, wages earned, job tenure, and number of days to attain employment were determined via self-report. Job type and characteristics were coded based on vocational outcomes defined by the Canadian Version of the PSR Toolkit. This information was used to compute the number of days worked in competitive employment pre- and post-Augmented Education. Involvement in other productive activities was also assessed and defined as participation in non-competitive employment, vocational rehabilitation, volunteering, or school.

Clinical Outcomes. As the research literature suggests that hospitalizations are an indicator of illness severity and are associated with successful outcomes (e.g., Unger et al., 2000), two indicators of hospitalization were used in analyses - the difference between the number of days since a person's last hospitalization and the first day of classes, and the total number of lifetime hospitalizations. Further, participants were asked to describe any changes they experienced in their mental health at one year and two years post-Augmented Education. Changes to mental health were coded as "positive" if a participant indicated an improvement in mental health, as "negative" if a participant indicated a decline in mental health, or as "no change" if a participant indicated that there was no change in mental health.

Key Informant Data

Individual semi-structured interviews were conducted with 13 individuals intimately involved in the delivery of the Augmented Education programs: program staff (n = 3), instructors (n = 6) and employers (n = 4) to gather their insights regarding observable benefits to students of program participation. These semi-structured interviews occurred between April 2007 and April 2008.

Procedure:

The study received ethics approval from research ethics boards of both the Centre for Addiction and Mental Health and George Brown College. As previously noted, all students accepted for admission to an Augmented Education program were invited to participate in the study. Program staff notified research team members[4] when a student was interested in participating in the study, obtained consent, assisted a student with completion of the measures, and provided an honorarium or arranged to have one sent to the student.[5] Data collectors then contacted the student just before the next data collection point to arrange to collect data. Student data were collected at five points in time:

Time 1: An in-class visit was held during the first week of classes to gather self-report data on the Recovery Assessment Scale.

Time 2: Following the in-class visit, meetings with individual students were scheduled to gather additional baseline data that were not appropriate to gather in a group context. These sessions lasted an hour to an hour and a half and included the collection of data on measures relating to socio-demographic characteristics, prior work history, and psychiatric status. Each student received an honorarium when Time 2 data were collected.

Time 3: A second in-class visit occurred during the last scheduled class to gather self-report data on the Recovery Assessment Scale.

Time 4 and Time 5: Research team members contacted students and scheduled individual meetings at Time 4 (12 months) and Time 5 (24 months) post program completion. These sessions involved gathering information on the same measures used in the individual meetings held at Time 2, including work history since program completion, psychiatric status, and hospitalizations. Honoraria were provided at these data collection meetings.

Key Informant Interviews: Semi-structured interviews were conducted with key informants involved in program delivery to gather their perspectives on perceived benefits to students of participating in Augmented Education programs. Interviews were conducted with program staff (n = 3), instructors (n = 6), and employers (n = 4). All interviews were tape recorded and transcribed verbatim.

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[4] Although Tony Priolo was a member of the research team he was not directly involved in data collection or analysis.

[5] Participants were compensated $10.00 for their involvement and reimbursed $5.00 for public transit travel expenses. The study honorarium was raised from $10.00 and two public transit tokens to $25.00 and two public transit tokens per interview in January 2008. At the start of the study, the Augmented Education program agreed to provide the honoraria for the interviews as part of their contribution to the study and also due to the limited funds available as at that time the study did not have external funding. However, the amount of the honorarium was re-considered after receiving external funding from the Canadian Council on Learning and based on the financial resources that could be allotted for honoraria, these were increased to $25.00 per data gathering session.

Results

Quantitative Data:
Data Screening

   Two outliers were found for 'number of hospitalizations pre-Augmented Education'; these were transformed to be closer to three standard deviations, while maintaining the ordinal status. This change resulted in an improvement in significance for the relationship between this variable and program completion status.

Descriptive Statistics from Application Data

   Our research ethics board approvals enabled us to both collect data directly from students who consented to completion of self-report measures, and to access application data for all students. As noted earlier, application data were available for 148 of the 188 program participants. As seen in Table 1, these data indicate that at the time of application to Augmented Education, 76% of students were male and age at program start ranged from 18 to 58, with a mean of 34 years. Further, 37% of students were living alone, 40% had completed at least some college or university, and 60% were in receipt of disability income supports through Ontario's Disability Support Program. With respect to clinical diagnoses, 34% of students indicated a diagnosis of schizophrenia, 25% indicated a diagnosis of depression, and 15% indicated a diagnosis of anxiety. In terms of employment and meaningful activity prior to admission to the Augmented Education

Table 1. Demographic Characteristics of Augmented Education Students at Time of Application to Augmented Education Programs (n = 148)

	Percent or Average and Standard Deviation (SD)
Male	76 (n=145)
Mean Age	34 SD 10 (n=112)
Living alone	37 (n=142)
Completed college or university	40 (n=143)
Receiving ODSP	60 (n=141)
Diagnosis	
Schizophrenia	34 (n=139)
Depression	25 (n=139)
Anxiety	15 (n=139)
Substance Use	24 (n=139)
Employment	
Working (full-time or part-time)	18 (n=143)
School/Training program	27 (n=143)
Volunteer activity	28 (n=143)
Years since last employed	2.3 years SD 2.8 (n=118)

Note: Data are in regard to all students both completers and non-completers across all 7 cohorts (5 ACET and 2 CCWET). Data were collected from student application forms for which the maximum number is 145. Some data are missing because applicants did not provide it.

programs, 18% of students reported that they were working either full- or part-time, 27% were attending school or a training program, and 28% were engaged in a volunteer activity. Finally, on average, students had last worked 2.3 years (SD =2.8 years) prior to

starting Augmented Education and 41% reported having been involved with other vocational rehabilitation programs.

Descriptive Statistics from Research Data

As was noted earlier, not all of the 123 students who agreed to participate in the study did so at all five time periods; thus, the total amount of data we had to work with for each time period varied considerably. Whenever possible we gathered demographic information missed at an earlier stage of data collection. For example, although 69 people provided Time 2 data at Time 2, we were able to obtain Time 2 marital status data for an additional 13 participants by asking about it as part of data collection at a follow up data collection time point; hence, we have a reported n of 82 for this variable in Table 2. In addition, at the time of analysis only one of the two CCWET classes had reached the two year mark. We also found that many students, despite considerable effort on our part to contact them[6], could not be reached at the one-year or two-year follow up time periods.

As can be seen in Table 2, 74.4% of students were single. Whereas, 18.3% of students were separated or divorced, 4.9% were married, and 2.4% were widowed at Time 2. Table 2 also shows that the majority of participants (53.1%) reported not having physical health problems while the remainder indicated one or more. With respect to hospitalizations, 27% of participants reported not having been hospitalized in the past; the average number of past hospitalizations was 4.3, SD = 10.8.

Table 2. Select Demographic Characteristics of Augmented Education Students at Time 2

	Percent or Average and Standard Deviation (SD)
Single	74 (n=82)
Hospitalized in the past	Yes 73 (n=104)
	No 27 (n=104)
Mean number of hospitalizations	4.3 SD = 10.8 (n=100)
Physical health problems	Yes 47 (n=81)
	No 53 (n=81)

With respect to living arrangements, 30.8% reported living in their own apartment and 20.6% reported living in the family home. Less frequent living arrangements included living in a group/boarding home (10.3%), independently (9.3%), in a hospital (7.5%), no fixed address (1.9%), in a temporary shelter (0.9%), and other (18.7%). With

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[6] We attempted to contact students through various mechanisms including phone, email, program staff, and alternate contacts. We also tried altering the days of the week and time of day of phone calls.

respect to level of education, 52.8% of participants reported having completed high
school or less, with the remainder having completed at least some college/university.
Forty-three percent of research participants reported having participated in vocational
rehabilitation prior to attending Augmented Education.

Pre-Augmented Education monthly income from work ranged from no income
(78.8% of participants) to $1200, with a mean of $80.28, SD = $214.39. Pre-Augmented
Education monthly income from all sources ranged from no income (1 participant) to
$5000, with a mean of $806.07, SD = 642.56. Finally, participants were asked about pre-
Augmented Education employment: 63.5% reporting having worked full-time for 12
consecutive months at some point prior to being in the program. However, 62.1%
reported having not worked at all in the two years prior to starting Augmented Education.
The mean number of days worked in the two years prior to Augmented Education was
54, SD = 120. Beyond paid employment, 26% reported having been involved in other
productive activities prior to starting Augmented Education. Finally, it is interesting to
note that 71.7% of participants reported they were ready to enter the labour force when
they started the program.

Program Completion

As noted, across each of the program waves, program non-completion has ranged
from 40% for CCWET Wave 1 to 74% for ACET Wave 3, with an average completion
rate of 57.2%. As seen in Figure 1, the average completion rate for Augmented Education
programs is comparable to the 61% completion rate for programs generally at George
Brown College (Ontario Ministry of Colleges and Universities, 2008), and the Ontario
college graduation rate of 64.6 % (Colleges Ontario, April 2009; 07/08 academic year).

Figure 1. Academic Outcomes: Graduation Rate for Augmented Education Programs
Compared to All George Brown College Programs
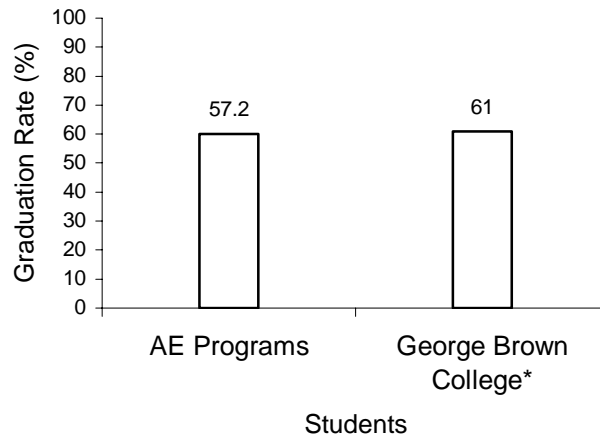
*Represents average graduation rate from 2001-2007.

As part of program development and planning, program staff are keeping
information regarding the reasons that students do not complete Augmented Education
programs. Although there were 100 non-completers of the 188 students admitted to the
programs (across the first five waves of ACET and the first two waves of CCWET)

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information on the reasons for non-completion were available for only the most recent three ACET classes and both CCWET classes. As a result, reasons for non-completion were available for 70 students. Of these students, 50% were reported to have dropped out of the program voluntarily, 40% did not complete required course work and/or the work placement, and 10% were asked to leave the program because their behaviour was disruptive and perceived by program staff as having a negative impact on other students. Reasons for dropping out voluntarily included: inability to meet school demands, lost interest or changed mind, physical illness, and financial problems.

In terms of predicting successful program completion, a first step was to examine bivariate correlations between demographic variables and program status (i.e., completer or non-completer). Demographic variables examined included gender, marital status, level of education (number of years of education completed), living arrangements, contact with family and friends, income (average monthly income from work and average monthly income from all sources), employment (including total number of days employed in the 2 years prior to starting Augmented Education, number of years since last worked full-time, worked full-time for one year prior to starting Augmented Education), hospitalizations prior to starting Augmented Education program (including number of hospitalizations and number of months since last hospitalization) and contact with mental health and/or addiction professionals (specifically, total number of annual visits with mental health and/or addiction professionals). Of all demographic variables examined, only number of hospitalizations was found to correlate with program status ($r = -.216$, $p = .039$), thus suggesting students with more prior hospitalizations were less likely to complete the program. Given this was the only significant correlation, a multiple regression analysis was not conducted for demographic variables. Next, scores on the Recovery Assessment Scale, and functioning (as assessed via the BASIS-32) were examined as correlates of program completion. None of these variables correlated with program completion. As such, regression analyses were not conducted. It appears that pre-program hospitalization is the only significant predictor of finishing Augmented Education programs.

Employment Outcomes: Employment Rates of Augmented Education Program Completers

As summarized in Table 3, the employment rate for Augmented Education program completers was 61% at 1 year follow-up. Of those employed at 1 year post-Augmented Education, 72% were working in the industry that they were trained in (i.e., cooking or construction). At the 2 year follow-up, a slight decrease in the employment rate is observed with 58% of program graduates working, of which 55% were employed in the industry in which they were trained. The employment rate for Augmented Education program graduates was lower than that of George Brown College's Chef Training program graduates and of George Brown College graduates overall (see Table 3). The employment rates for both the Chef Training program and the college overall was 88% (George Brown College, 2007; 2008).

Table 3. Employment Outcomes: Augmented Education Program Completers Compared to Graduates of George Brown College Programs Generally

	AE Programs[1]	Chef Training[2,3] (n=148)	Overall College[2,3] (n=5238)
% Employed	61 (1 year; n=41) 58 (2 year; n=19)*	88**	88**
% Employed in industry (food or construction)	72 (1 year; n=25) 55 (2 year; n=11)*	73**	75**

1. Represents employment in either competitive or non-competitive jobs.
2. George Brown College. (2007). *Graduate Employment Report 2005/2006*, Retrieved (n.d.) from http://www.georgebrown.ca/kpi/index.aspx
3. George Brown College. (2008). *Graduate Employment Report 2006/2007*. Retrieved May 5, 2008, from http://www.georgebrown.ca/kpi/index.aspx

*Represents employment data for ACET completers only, as two-year follow-up interviews for CCWET fall outside of the study period.
**Represents the average graduate employment rate from 2005 to 2007.*Employment*

Outcomes at 1-Year Follow-Up

With respect to employment outcomes in the first year following graduation from Augmented Education (see Table 4), no significant predictors emerged other than that program completion may be associated with days worked ($r = -.253$, $p = .076$). Although non-significant, this suggests that individuals who complete Augmented Education may be more likely to work in the year subsequent to program end. There is also a trend to suggest that program completion is associated with more involvement in post-program non-work productive activity[7] ($r = .256$, $p = .076$). A negative correlation was found, however, between pre-Augmented Education level of education and 1-year post-Augmented Education income from work ($r = -.552$, $p < .01$). Unfortunately, this suggests that in the year following Augmented Education, individuals who had a higher level of education prior to entering Augmented Education are earning less than their counterparts who have lower levels of education.

Table 4. One-Year Employment and Income Outcomes: Augmented Education Completers versus Non-Completers

	Completers		Non-Completers	
	Mean	SD	Mean	SD
Days Worked	42 (16)	80	1* (8)	3
Other Productive Activity	56.3% (32)	N/A	29.4% (17)	N/A
Income from Work	$795.92 (13)	$1046.25	*N/A	*N/A
Income from All Sources	$1,745.80 (15)	$1344.16	$933.25 (8)	$640.70

Note: number in brackets is number of cases/participants; *only one participant reported having worked in the last year

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[7] By 'non-work productive activity' we mean being in school or volunteering, that is, having a productive role other than paid employment.

Employment Outcomes at Two-Year Follow-Up

   Employment outcomes in the second year following graduation from Augmented Education are presented in Table 5. A number of significant associations were found. First, it was found that number of days worked in the two years prior to commencing Augmented Education was a significant and positive predictor of the number of days worked at the 2-year follow-up (r = .495, p = .01). Having successfully completed an Augmented Education program was not, however, associated with days worked at 2-year follow-up (r = -.250, p = .217). Program non-completion was, however, associated with an increased likelihood of reporting involvement with a vocational rehabilitation service at 2-year follow-up (r = -.401, p = .038). Finally, it was found that involvement in other productive activities at the 2-year follow-up was associated with more pre-Augmented Education visits to mental health professionals (r = -.716, p < .05).

Table 5. Two-Year Employment and Income Outcomes: Completers versus Non-Completers

	Completers		Non-Completers	
	Mean	SD	Mean	SD
Days Worked	89 (17)	130	31 (9)	58
Other Productive Activity	56.3% (16)	N/A	37.5% (8)	N/A
Income from Work	$503.73 (15)	$665.50	$44.29 (7)	$79.97
Income from All Sources	$1,222.29 (14)	$461.03	$961.59 (6)	$581.34

Note: number in brackets is number of cases/participants

Clinical Outcomes

   Finally, one- and two-year clinical outcomes were examined in association with the various predictor variables described above. With respect to hospitalizations occurring in the year following Augmented Education graduation, a significant relationship was only found with the number of pre-program yearly visits with mental health professionals (r = .719, p < .001). No significant relationships were found with respect to post-program changes in mental health. With respect to hospitalizations and mental health status occurring in the second year following Augmented Education graduation, no significant associations were found.

Qualitative Data: Key Informant Interviews

   A thematic analysis of the transcripts was undertaken to identify common themes within the recovery frameworks presented by Anthony (1993) and Jacobson and Greenley (2001). Anthony (1993) maintains that recovery encompasses a process of creating new meaning and focus in life and moving beyond the calamitous impacts of mental illness. Hope, healing, empowerment and social connections are all components of recovery (Jacobson & Greenly, 2007). Within the present study, the first author (JN), the fifth author (NF), and a research student of the first and second authors (MB) were the research team members involved in coding interview data. Preliminary codes were developed, discussed and refined through an iterative process. Inter-rater agreement ranged from 86% to 96%. Four themes emerged: the importance of a supportive environment afforded through a program such as Augmented Education, the benefits of

providing supports that empower people with mental illness, enabling students to move beyond their illness in how they see themselves, and enhancing students' social connectedness. Each theme is discussed in turn.

Supportive Environment

Our analysis revealed that Augmented Education programs create a supportive environment that is key to fostering recovery. Augmented Education programs achieve this through flexible program components, which include direct supports provided by job coaches. Flexibility is also built into the program in other ways to promote program completion, such as modifying the structure and frequency of tests, and allowing students to complete a component of the program later than other students. As a case in point, CCWET students are viewed as having completed their job placement when they have completed 100 hours of on –the-job experience. Students may vary in the pace with which they complete this program requirement. Two examples of text from verbatim transcripts that touch on this theme are provided.

> *"You're focused on the development and achievement of the students throughout the program…It is key in this program.. the[se] instructors, the job coaches...program director want to see everyone succeed. They'll put the extra time in, they will make sure you got all the information. They will make sure that you are organized, you're showing up to class...If you're lagging behind, they will get you caught up…they're taking the extra care I guess is what it comes down to. You know attention to details, attention to individuals and their strengths and weaknesses and their problems in the past and catering to that and saying ok you need this extra help because this is what you're dealing with let's go there and let's deal with it and move on. Help you, you know, work through your problems."* – Instructor/Employer

> *"There's flexibility in being able to miss a test and set up a re-write date. Having make-up labs where there's more skills training, hands-on training…Instead of them cooking maybe four recipes in one four-hour cooking lab…they cook two one week and two the next week…the pressure of doing four recipes, we try to eliminate that so they can experience the success and build momentum – towards doing four recipes."* – Program Staff

Empowerment

Empowerment emerged as a dominant theme through our analysis of transcripts. As described by Anthony (1993, p.7), recovery involves "regaining the belief that there are options from which one can choose" and that one is capable of making decisions. This notion of empowerment includes the idea that a person can have control over aspects of his or her life by making choices and decisions. As such, empowerment fosters a sense of hope and improved confidence. Text excerpts that follow reveal what stakeholders

observe that is consistent with students feeling empowered through program participation.

> *"I've seen people go on to further studies even in unrelated fields. To me I see that as a success, obviously because they've gained confidence in themselves, to be able to maybe you know finish something they had started, or pursue something that they maybe wanted to do in the past."*
> – Program Staff

> *"A lot of the pluses are seeing the expression on the faces of the students when they come back and visit me. You know smiling and saying, "I have a real job and I now have my own place." I've had students call me up and say "This is so cool. I have my own place and my own TV. And I can watch what I want, whatever I like." The change in the students is just phenomenal."* – Program Staff

> *"…And once they could see that learning curve going in their favor, they could see that they do have talent. I think a lot of times they don't have a lot of self-confidence…Obviously, we don't have the production speed but at least you know they're getting a feel of some self-worth…"* – Instructor

Moving Beyond the Illness

Our analysis revealed that moving beyond the illness was another key theme. This theme encompasses viewing oneself as capable of setting and achieving goals, and having a focus other than the illness. It means rebuilding one's sense of self and fosters taking on new or reassuming old meaningful roles and taking on tasks and responsibilities associated with those roles. The excerpt that follows highlights the roles and tasks that a student has taken on demonstrating that she has moved beyond the illness.

> *" …we've had a big success with [student]…I know now that she's you know, working her full-time job and she's studying part-time to be a computer programmer with [university] by correspondence. She seems to have her life very much together."*
> – Employer

Social Connectednes and Re-engagement

Being in the throes of mental illness often means being marginalized from society. Recovery involves fostering relationships with people and becoming re-

connected to society. As viewed by those interviewed, a clear goal of the Augmented Education programs was to help students re-connect with the world and become productive members of society. Being involved in the class and participating in on-the-job training affords students with opportunities to improve social skills, build personal networks, and be reconnected with society.

> *"In my opinion, the primary aims would be to teach these students skills to integrate them back into the workforce which has many benefits, of course for them personally…a) gets them out of the house, b) gets them around people, adapting with other people, having responsibilities, of course, learning a skill and graduating from college…As well, holding a job and… working with people."* – Instructor

> *"…To take people that are not gainfully employed or viewed upon as unemployable and shift that around and have them become functioning and participating members of society."*
> – Program Staff

Discussion

Augmented Education involves modified programming to meet the needs of individuals with mental illness and combines best practices from supported education and supported employment. Through the current study, Augmented Education student characteristics have been described. An attempt was made to determine student characteristics that contribute to graduation, employment, and clinical improvements; however, very few of the examined variables were found to relate to these outcomes. Moreover, there was substantial study attrition. Nevertheless, study findings suggest the program is promising with regard to promoting positive educational and employment outcomes.

The fact that only frequency of previous hospitalizations was found to be a significant predictor of graduating from Augmented Education suggests that stability in mental illness is an important determinant of educational success, and is consistent with literature discussed earlier in this report indicating that the episodic and cyclical nature of mental illness can derail education and employment pursuits. Based on this finding in the present study, more thorough assessments of illness stability and symptoms may be necessary as part of the admissions process in order to best assist those students who are likely to be hospitalized while participating in Augmented Education. This finding also speaks to the need for adequate clinical supports both within and linked to Augmented Education programming. Some students may not have had adequate clinical supports and this may have contributed to program non-completion.

Involvement in non-work productive roles being associated with more pre-Augmented Education visits to mental health service providers may be due to workers having encouraged participants (prior to them being students) to participate in volunteer and other activities as part of rehabilitative efforts as a precursor to being ready to return

to work. It may have also been a function of the challenge in finding jobs for people with complex needs, such as those with schizophrenia *and* physical health issues, and thus encouraging them to engage in productive roles may have been viewed as desirable while waiting for an appropriate job to become available. Both of these explanations are reasonable given that many of the Augmented Education students are, as indicated earlier, individuals with complex support needs.

Evidence gathered from program staff also indicates that many students are not completing Augmented Education programs because of voluntary withdrawals, suggesting a lack of interest in programming content. As such, it will be important to more thoroughly assess student motivations for attending Augmented Education to ensure that career goals align with program involvement and that students have realistic expectations of Augmented Education programs. There was also some suggestion that for at least some students motivation was not the issue; rather, income security and being able to have a decent standard of living was an issue. Even those students with stable income may, particularly if they were receiving income through a provincial disability income support program, have been fairly impoverished. This suggests that linking students to income support services and possibly other support services to address any other needs that arise may help more students complete the program.

As 40% of students who did not complete the program did so because of an inability to complete coursework and/or placements, efforts to provide additional educational and clinical supports and further 'augment' program components will likely be beneficial. Augmented Education programs currently provide students with additional educational supports such as make-up labs and tests, extensions on assignments, extra tutorials and review sessions, but other supports may need to be explored. As program staff and instructors have become more experienced at offering the Augmented Education program, they have learned and made programming modifications including adding more education supports. Recently, for example, program staff and instructors have tried reducing the number of items on tests and increasing the number of tests. This strategy and other strategies may form part of enhanced educational supports.

Achieving a comparable program completion rate to that of other programs at the same college and college programs within the province generally speaks to the immense value of Augmented Education and to the supports this program is providing to students. It is important to note that students in the Augmented Education programs were for the most part people who had been out of the work force for some time and on disability income support and thus were at high risk for not returning to work. While the sample size at one and two year follow up is a significant limitation of the study, the fact that of those individuals who could be located more than half were working is *clinically* meaningful. Many Augmented Education students were in fact people with complex needs in that they were experiencing what are often more debilitating illnesses (e.g., schizophrenia) and may have been doing so in the context of an addiction or a physical illness. Clearly, people with mental illness as post-secondary students are able to thrive in a non-stigmatizing context shared with peers who have mental illness, as well as peers in other programs who do not have mental illness (Tutty, Belanger, & Gregory, 1993).

Findings of this study are also positive given the infancy of the Augmented Educations programs. At the time of analysis, the programs did not have stable long term funding. Procuring stable long term funding would enable program staff and instructors

to strengthen educational supports, start the application and intake process sooner so that they can consider creating more components to it, and enable the program to connect into and build sustainable relationships with other support service providers to address issues that lead to program withdrawal. Given the promising nature of the existing Augmented Education programs, expanding beyond these programs to create additional ones for other trades would serve to meet the varied needs and interests of individuals with mental illness and likely result in better educational and vocational outcomes for them and increase their labour force participation.

Limitations and Future Directions

The present research has highlighted the value of Augmented Education in assisting individuals with mental illness in completing postsecondary education and entering the workforce. Due to attrition, we were hindered in our ability to comment on student and program characteristics that contribute to successful outcomes. Future research on this program would benefit from improved recruitment methods such as increasing participant payment and/or making research/evaluation participation a mandatory component of Augmented Education program acceptance.

It is also important to consider that Augmented Education students may not be the most reliable source of clinical status or previous involvement in education and employment. Given that mental illness is associated with cognitive decline, the accuracy of their reports may be questioned (Del Boca & Noll, 2000) particularly in light of the fact that they were asked to comment on events that occurred considerable time ago. Moreover, participants in this research were required to engage in lengthy data collection meetings which may have depleted cognitive resources and diminished the quality and accuracy of the retrospective accounts provided by them. Future study of Augmented Education programs would likely benefit from using a combination of program file review, simplifying the number of and length of self report measures used, and possibly clinician and/or program staff ratings of how students are doing in regard to various variables.

One area for future direction is to incorporate strategies for improving the cognitive capacity of students into programming, and to evaluate the efficacy of those strategies. Initial planning for Augmented Education had considered incorporating cognitive remediation as a tool to further assist students in completing course work and graduating; however, resources were not available to provide this support. With clients who have more severe forms of mental illness, such as schizophrenia, there is often an associated cognitive decline or impairment, which further diminishes the likelihood of completing educational programs and attaining competitive employment (McGurk & Mueser, 2003). Cognitive remediation, often provided by a cognitive specialist, generally consists of a drill and practice approach with pencil and paper exercises and computerized tasks, and is intended to and is typically successful at restoring general cognitive skills (McGurk & Wykes, 2008). Future programming and research would benefit from both incorporating and assessing the benefits of cognitive remediation with Augmented Education students.

Conclusion

Augmented Education is a unique method of service delivery that leads to

competitive employment for persons with mental illness. The knowledge attained from this project will assist program planners, policy makers, employment support specialists, mental health workers, and researchers. Through the development of a best practice in return to work and disability management and the pursuant dissemination of findings and lessons learned, the identified knowledge users will be better positioned to assist individuals with mental illness in their recovery and return to work. Further, our findings speak to disability management and, as such, can guide organizations in their efforts to maintain a healthy and productive workforce.

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