Higher Education Quality Council of Ontario

An agency of the Government of Ontario

The Peer Helper Program at the University of Guelph: Analysis of Skills Objectives

Serge Desmarais, Frederick Evers, Olivia Hazelden, Laurie Schnarr, and Brenda Whiteside, University of Guelph

Published by

The Higher Education Quality Council of Ontario

1, Yonge Street, Suite 2402
Toronto, ON Canada, M5E 1E5

Phone: (416) 212-3893
Fax: (416) 212-3899
Web: www.heqco.ca
E-mail: info@heqco.ca

Cite this publication in the following format:

Desmarais, S., Evers, F., Hazelden, O., Schnarr, L., and Whiteside, B. (2013). *The Peer Helper Program at the University of Guelph: Analysis of Skills Objectives.* Toronto: Higher Education Quality Council of Ontario.

Executive Summary

Undergraduate Peer Helpers score higher on some skill competencies than do other students.

Peer Helpers, or Peers, are students who are trained through the University of Guelph's Peer Helper Program (PHP) to assume paraprofessional roles focused on helping other students make successful transitions to, through and from the postsecondary learning environment. This study, funded by the Higher Education Quality Council of Ontario (HEQCO), gathered data over three years, starting in 2009, to compare the skills levels of Peer Helpers to those of two groups of students: those engaged in student government and those not engaged as Peer Helpers or in student government roles. The study used a skills model called *The Bases of Competence* (Evers, Rush and Berdrow, 1998), which consists of four groupings of skills: 'Managing Self,' 'Communicating,' 'Managing People & Tasks,' and 'Mobilizing Innovation & Change.' Peers were found to have significantly higher competency scores on the 'Mobilizing Innovation & Change' competency than students in the other two groups.

The University of Guelph is seen as a leader in the development of intentionally-designed paraprofessional helping roles, with such positions existing in over thirty units across campus. The program is centrally coordinated and its staff team oversees all aspects of the recruitment, selection and core training of over 100 Peer Helpers annually. In 2002, the program was officially recognized by the institution as a central feature of its experiential learning strategy. Students who meet stringent eligibility requirements (i.e., minimum 70 per cent average in semester two or beyond, willingness to commit to at least three semesters of involvement as a Peer) elect to be interviewed for those placements that best align with their interests and career aspirations. The focus of these Peer Helper placements ranges from workshop design and delivery to carefully planned interventions aimed at supporting students who are struggling to achieve academic success.

This study examines whether the intended skills acquisition outcomes of the PHP are reflected when Peers Helpers respond to a range of scenario-based questions designed to test specific sets of skills found to enhance students' capacity to enter and perform effectively in the workforce. The skills examined are drawn from *The Bases of Competence* (Evers et al., 1998). These competencies serve as the foundation upon which the Peer Helper Program is built, particularly with respect to its training and development model and its assessment activities. The three groups – Peer Helpers, students in student government, and students in neither Peer Helper nor student government roles – were compared using objective (i.e., scenario-based) measures designed to test the level of skills acquisition gained over the three years of the study across the four bases of competence.

Findings

We found that the scenario-based objective measures provided a different and perhaps more accurate reflection of the skills acquired by students who engage in these activities when compared to the commonly used subjective measures that simply ask respondents to judge their competence on a list of skills. The latter strategy is prone to personal biases and retrospective recall errors. Scenario-based measures, while likely more accurate, also tend to be a more expensive and time-consuming strategy.

In terms of the analysis of the bases of competence, we found that Peer Helpers had significantly higher scores than members of the two other groups on the 'Mobilizing Innovation & Change' skill set. We expected that the Peer Helpers would excel at all four competencies, but our data did not support this hypothesis.

In a separate analysis, we also compared skills competency levels between two other groups: students who were involved with in-school activities, such as student government, residence life, and other on-campus involvement, and students who were not involved in such activities. The involved students had significantly higher scores in 'Managing Self,' 'Communicating,' and 'Mobilizing Innovation & Change.' Interestingly, these results were not found when students indicated that they were involved in out-of-school activities, such as part-time employment. This finding suggests the importance of student involvement in intentionally-designed activities provided by higher education institutions.

Conclusions

1. Students engaged in in-school activities are likely to improve skills that are valuable for higher education and the workplace, and universities should find mechanisms and programs to engage students in such programs. In addition, carefully designed programs such as the PHP are likely to further develop in students some skills that are valuable in the workplace.
2. Scenario-type measurement can be used to test skill competency and can serve as a reliable tool for measuring skill acquisition.

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Introduction

For many years, institutions of higher learning have utilized paraprofessional helping models as a means to deliver a diverse range of support services to students, to garner greater efficiencies in delivery practices, and to extend the reach of programs and unit activities (Ender & Newton, 2000). Paraprofessional roles such as peer helpers, hall advisors, residence assistants (or dons), and wellness educators contribute greatly to positive transition experiences for students, supportive campus environments, and the retention and persistence of students (Kuh, Kinzie, Schuh, Whitt et al., 2005). While the benefits to institutions and to the students served are numerous, those who assume paraprofessional helping roles have concrete opportunities to apply their knowledge in real-world contexts, gain invaluable career-related experience, contribute in meaningful ways to a supportive campus environment, and hone their leadership skills (Ender & Newton, 2000; Kuh et al., 2005).

The purpose of this study was to investigate whether participation in the Peer Helper Program (PHP), a paraprofessional helping program at the University of Guelph, benefits students who serve as Peer Helpers in terms of the skills acquired when compared to students in elected student government roles and those students who are not involved in either capacity. The University of Guelph is seen as a leader in the development of intentionally-designed paraprofessional helping roles, with such positions existing in over thirty units across campus. The program is recognized by the institution as a central feature of its experiential learning strategy because peer helper positions are designed to engage students in the delivery of programs and services that benefit members of their peer group while, at the same time, providing them with concrete opportunities to develop invaluable skills and experience. The focus of peer helper positions ranges from workshop design and delivery through to carefully planned interventions aimed at supporting students who are struggling to achieve academic success. This study examines whether the intended skill acquisition outcomes of the PHP are indeed reflected in the way Peer Helpers display specific sets of skills identified to enhance students' capacity to enter and perform effectively in the workforce. We also look at how students involved in in-school activities, such as the PHP and student government, and students involved in external activities (e.g., part-time jobs), compare on the bases to those students not involved in any activity.

Skills in Higher Education

New graduates face a challenging job market with evolving skill requirements, reduced hiring, and extreme competition from laid-off, experienced workers (Eisner, 2010). In response to these daunting job prospects, Eisner (2010) recommends that skills development in higher education be emphasized more than ever to equip students to thrive in the 21st century workplace. Hull (2008) argues that, on average, new graduates are not prepared to compete in today's job market and that colleges and universities should be encouraged to strengthen their curriculum by providing undergraduate students with opportunities to practice work-related skills in addition to acquiring discipline-related knowledge. Such an approach would address the concerns of employers who expect new graduates to possess work-related competencies and skills, and believe that these skills enhance their employability (Precision Consulting, 2007; Pool & Sewell, 2007; Washer, 2007). Some studies have shown a clear disconnect between employers' expectations regarding the skills necessary to enter the workforce and the extent to which these skills are integrated into most undergraduate programs (Davies, Csete & Poon, 1999; Newton & McKenna, 2007). This suggests that a focus on skills development is an imperative for higher education institutions. As such, research identifying the types of skills that higher education and employers value following graduation has continued to gain traction.

These authors are not alone in suggesting that postsecondary institutions should emphasize the acquisition of transferable skills as a vital component of an undergraduate education. In a recent study, McCloy and Liu

(2010) found that although graduates are satisfied with course material, they are not satisfied with how higher education has prepared them for employment. This view matches the findings of many employer studies. In their @Issue paper published by the Higher Education Quality Council of Ontario's (HEQCO), Wiggers and Arnold (2011) document a shift away from defining student success as simply retention to a broader conceptualization that includes the acquisition of employment relevant skills. They argue that developing and honing work-related skills is critical to the completion of a postsecondary credential, subsequent employment and a reasonable income, and to reaping broader indirect benefits related to civic engagement and improved health. This view is consistent with research by Cassidy (2006), who identifies an important shift in employers' expected outcomes of postsecondary education, from viewing employability skills merely as an asset to perceiving them as an expectation.

It is true that colleges and universities provide students with valuable knowledge about their subjects of interest, but the relative absence of deliberate transferable skills development can result in difficulties for students as they transition from higher education to the workplace (Evers, Rush & Berdrow, 1998). Graduates are expected to possess specialized knowledge and skills, as well as the ability to adapt to different situations and creatively solve problems (Eisner, 2010; Bromley, Boran & Myddelton, 2007; Cambra-Fierro & Cambra-Berdún, 2007). While universities have traditionally emphasized the acquisition of discipline-relevant knowledge, we argue, as have others (see Dickeson, 2010), that balancing this priority with the need to develop skills that can be applied when a student enters the workplace is an equally important goal. Transferable skills are best developed through a competency-based model that focuses on skills development in both the formal curriculum and co-curricular initiatives (Evers et al., 1998; Cassidy, 2006; Bridgstock, 2009). The present project is consistent with this approach but also emphasizes the need to understand the skills required after graduation and to develop a method to measure these skills.

Which Skills Should Be Taught?

While studies attempting to identify the transferable skills developed during an undergraduate education have arrived at similar general conclusions, they have differed somewhat in terms of the specific list of skills deemed to be essential for entry into the workforce. Pool & Sewell (2007) created a list of 15 generic skills that employers expect, whereas Yorke & Knight (2006) identified 39 skills that they reduced into three more generic categories (personal qualities, core skills, and process skills). Similarly, Bridgstock (2009) conducted a review of work-related skills and identified five particular categories of skills as essential to the successful transition between the university and the workplace: career management, self-management skills, career building skills, discipline-specific skills, and generic skills. A few years ago, the Conference Board of Canada developed the Employability Skills Profile (2000), comprised of three groups of skills – fundamental, personal management and teamwork – that aim to help students better understand the relevance of workplace-based competencies in the 21st century.

Regardless of the individual or composite skills required, all would agree, as noted in a report by the Pedagogy for Employability Group (2005), that the classroom, lab, studio and seminar room provide a rich forum for skills to be developed and that this goal can be achieved without dramatically changing the curriculum. Research also demonstrates that the many positive outcomes associated with skills development can occur in university experience. For instance, Ehiyazaryanb and Barraclough (2009) showed that students who were engaged in realistic work activities that encouraged negotiation and communication among peers were more likely to acquire both knowledge and skills that were transferable to the workplace. In addition, students who acquired these skills were more confident, took greater responsibility for their actions, and were more likely to view client feedback as a means to enhance their abilities and skills, which is essential in the lifelong learning process. These students also tended to place greater value on honesty and teamwork, traits that are also expected in the workplace. A similar study, this time with graduate students, found that skills

such as problem solving, critical thinking, project management, self-reliance, research presentation skills, and the ability to work in teams, among others, were essential to components of training (Bromley et al., 2007). Savage, Davis and Miller (2009) examined graduate transitions from the university to the workplace and considered the different points of view of faculty, employers and graduates. They argued for a stronger link between formal education and employment, with the inference that graduates would benefit if they attained the technical and social skills required for the workplace. The authors found that recent graduates emphasized social skills, humility, and confidence as important skills for employment. By contrast, the university professors felt that critical thinking was most important, a viewpoint shared by the professionals. When all perspectives were considered, the most essential skills set included critical thought, lifelong learning, and interpersonal social skills such as communication, listening, humility and confidence. Furthermore, there was agreement that a consensus must be reached regarding the roles and responsibilities of all stakeholders in ensuring that graduates are equipped to make successful transitions to their respective professions, with a particular emphasis on the role that postsecondary institutions must play in creating lifelong adaptable learners (Savage et al., 2009).

While many studies suggest that universities do not place sufficient emphasis on the development of transferable skills, some researchers argue that postsecondary institutions should not be made solely responsible for skills development. For instance, Rogers and Mentkowsky (2004) acknowledge that employability skills cannot be fully taught by the university and that employers also have to accept a certain degree of responsibility. Indeed, universities should increase their focus on the development of important foundational skills but, in order for the individual to internalize these skills, opportunities must also exist to practice them in the workplace (Ng & Burke, 2006). We believe that programs such as the Peer Helper Program can play a critical role in enabling students to further develop and apply skills that they have learned in formal academic settings within a professional context. The Peer Helper Program strives to forge an important connection between skills development and application while at the same time promoting positive transition experiences for the students who receive the mentoring, advising and support provided by Peers. The goal of the PHP is to promote in the Peer Helper the integration and internalization of the four bases of competence.

The Bases of Competence

The authors of the *Bases of Competence* (Evers et al., 1998) developed the skill set used for assessment in this study using a multi-step process. The first phase, commissioned by the Status of Higher Education Task Force of the Corporate-Higher Education Forum in 1986, consisted of very general exploratory interviews with managers and university graduates and sought to determine which types of skills focus groups felt recent graduates needed. These interviews revealed that recent graduates felt that they had acquired a wealth of discipline-specific knowledge but lacked competency in managerial and interpersonal skills. The authors developed a list of 13 skills, rated on a five-point scale, which formed the basis for a survey that was later administered both to managers, who were asked to assess recent graduates on the five-point competency scale, and to recent graduates, who rated their own competency on each skill. This first phase of surveys involved 442 graduates and 213 managers.

The second phase of the project which began in 1987 consisted of elaborate surveys that were more extensive in their comparisons across cohorts. Learning from phase one findings and building upon an extensive review of the literature, the list of skills was expanded to 18 that employers and employed university graduates considered to be important. Again, students and graduates from arts and social science, business, and engineering programs completed the survey and rated themselves on each skill, as did their professors and managers. A total of 1610 students and graduates completed the questionnaire in this phase and did so for three consecutive years. The students were sorted into two cohorts, early university (first-year) students

and pre-graduate (third- and fourth-year) students, while the graduates were sorted into three cohorts based on their time of employment: job entry (one year or less on the job), job change (approximately five years on the job), and stabilized (approximately ten years on the job). The authors then combined the 18 skills surveyed into groups that shared similarities and formed the four bases of competence, which were labelled 'Managing Self,' 'Communicating,' 'Managing People and Tasks,' and 'Mobilizing Innovation and Change.'

The skills defined within the *Bases of Competence* serve as the foundation upon which the Peer Helper Program at the University of Guelph measures the success of its Peer Helpers. Below is a brief description of each skill set.

'Managing Self' describes the ability to take responsibility for one's own performance, including the awareness, development and application of skills. Employers expect their employees to carry out their responsibilities on their own. The employee who is able to actively learn and use new skills will score highly in his/her competency for managing self. 'Managing Self' incorporates four skills: learning; personal organization and time management; identifying personal strengths; and problem-solving and analytic skills. Learning requires that students gain knowledge by challenging themselves with new developments in their field. Self-managers are able to multitask, set goals, and meet these goals. They develop new abilities for dealing with everyday work situations, and identifying, prioritizing, and solving problems. Students enrolled in postsecondary education must learn to become continuous learners and develop interactive problem-solving strategies (Evers et al., 1998).

'Communicating,' in essence, involves interacting effectively in a variety of ways with individuals and groups, and facilitates the gathering, integrating, and conveying of information in many forms. There are four main aspects to communication: interpersonal skills; listening skills; oral communication; and written communication. Interpersonal skills are especially important since the ability to cooperate in a group and work with others toward a common goal is critical in an organizational environment. Listening is the only way in which an individual is able to learn others' ideas and to understand the tasks on which they are working. Collaborative communication results from attentive listening and effective interactions with others. Strong written and oral communication skills are essential for presenting information and letting others know one's ideas and plans. Evers and his colleagues (1998) argue that it is the responsibility of a university to encourage the effective use of communication for all its students, which requires interactive classrooms where these skills can be taught and practiced.

'Managing People and Tasks' allows one to accomplish the tasks at hand by planning, organizing, coordinating and controlling other resources and people. This category includes the following skills: coordinating; decision-making; leadership and influence; managing conflict; and planning and organizing. The ability to coordinate the work of peers and subordinates will ensure success in a task, and encouraging a positive attitude towards one another will not only promote teamwork but will contribute toward a pleasant working experience. The ability to make timely decisions based on thorough assessments, recognize the outcomes of these assessments and identify who needs to be involved is essential in successful management. The individual in charge is required to be direct and guide others, delegate, and act as the motivator for finishing a task at hand. Unavoidable conflict must be dealt with quickly and efficiently by identifying the origins of the conflict and working with these individuals to overcome any hurdles. It is also important for the person responsible for the managing decisions and conflict resolution to consider ways of ensuring fair and ethical decision-making (Perri, Callanan, Rotenberry and Oehlers, 2009). Lastly, an individual who demonstrates a high level of skill in people management must be able to delegate task assignments, continually evaluate progress, and change and update plans based on progress outcomes. Group work and team skills are encouraged in higher education, but it is important for educators in charge to allow their students to understand that team work is a developmental activity.

'Mobilizing Innovation and Change' is an essential skill that the new graduate must internalize in today's technology-based and fast-paced world. It requires that one conceptualize, as well as set in motion, ways of initiating and managing changes that involve significant departures from current practice. Frequent reinvention of a business, for example, is necessary to continue and expand its success. Complete information and outcomes may not be available, but the individual with this skill has the ability to conceptualize and initiate novel methods and ideas without the complete picture. 'Mobilizing Innovation and Change' requires the ability to demonstrate creativity, innovation, risk taking, visioning, and the ability to effect change. Conceptualizing an innovation requires combining and integrating important information, then taking this information and applying it to new contexts. In essence, this skill requires taking what you know and trying new things with this information. Creativity shapes new ideas for change and is required for adaptation to a dynamic environment. The individual who possesses this skill will be able to initiate change with others, solve problems that may arise from this change, and even rethink new paths for achievement. Monitoring progress toward change requires that the individual conceive of new ideas and envision different ways of meeting an objective, while recognizing, and even accounting for, the potential of negative outcomes. Lastly, to display a high capacity for 'Mobilizing Innovation and Change,' one must be able to conceptualize the future of a project for the team, unit, or company.

The Peer Helper Program

The Peer Helper Program was established in 1984, when it was housed solely in the University of Guelph's Counselling and Student Resource Centre. It has since expanded to many departments across campus, with more than 240 Peer Helpers selected and trained in a typical academic year. It is one of the largest and best-established university paraprofessional helping programs in Canada (*Student Life,* 2007). The University of Guelph's PHP is considered a best practice in Canada due in large part to its intentional design, its emphasis on skill development, and its recognition by the institution as a central feature of its experiential learning strategy. In 2002, the Peer Helper Program was formally recognized by the Senate of the University of Guelph with a zero-credit notation on the official transcript, in a manner similar to co-op work experiences.

New Peer Helpers receive a day and a half of core training, which covers topics such as student development theory, the ethics of helping, communication strategies, experiential learning, and working in teams. This is followed by unit-specific training, provided upon assignment to a specific placement (e.g., the learning commons, career services, athletics, etc.). These mandatory training activities equip Peer Helpers to perform their roles and encourage the development of a range of personal competencies (*Student Life,* 2007).

The purpose of any peer helper program is for experienced students to support members of their peer group in achieving and sustaining academic success through a range of individual and group-based interventions. Peer Helpers are also involved in a number of activities such as developing workshops and events on academic, social, and cultural subjects; creating study and learning resources; referring students to campus and community resources; serving on committees and task groups; and also preparing proposals and reports. The University of Guelph, Memorial University, the University of Calgary, Queen's University and Carleton University all provide similar programs with the common goal of promoting the retention and success of students and rich experiential learning opportunities for those who serve in Peer roles. In fact, several of these programs were developed based upon Guelph's model and have similarly experienced marked growth over the past few years (*Peer Helper Program,* n.d.; *Peer Helper Program*, 2009a; *Peer Helper Program,* 2009b; *Student Life,* 2007).

Students are eligible to apply for Peer Helper positions if they meet clearly defined criteria, such as the willingness to commit to at least three semesters in the program, a minimum 70 per cent average, and

agreement that the Peer Helper Program can monitor the student's academic performance prior to and during their involvement as a Peer. Interviews are established between eligible candidates and unit supervisors, and each ranks the other following the interview process. Candidates who are successfully 'matched' become Peer Helpers and are required to attend core training delivered by the program, and intensive in-service training provided by unit supervisors. "Units" are campus groups interested in engaging a Peer Helper in their programming and educational activities (e.g., Aboriginal Resource Centre, Centre for New Students, and Supported Learning Groups). New Peer Helpers meet with their supervisors and develop a learning plan that utilizes the Bases of Competence framework to identify the specific skills they wish to acquire, hone or practice during the course of their time in the program, typically three to five semesters.

The Current Study

Student success in higher education is ideally measured both during instruction and beyond graduation, when students demonstrate knowledge and skills that have been acquired in a particular discipline and applied in a variety of settings. The present project emphasizes the need to understand the skills required before and after graduation and the methods for measuring these skills. Co-curricular offerings at the University of Guelph engage students in exploring, refining, and expanding their sense of self, utilizing their knowledge, skills and abilities to address identified needs, and navigating new experiences that expose them to diverse ways of knowing and being. The presence of competency-based education within the classroom and in co-curricular programs such as the Peer Helper Program contributes ultimately toward the acquisition of skills that are critical to success in the workplace of the 21st century.

The design of this study attempts to compare the skills competence of students in the Peer Helper Program with those of students who are either actively engaged in other forms of student activity or not involved in any such program. The treatment group is composed of students who served as Peer Helpers for one to three years (group 1). A group of students active in student government (i.e., Central Student Association, college government, Interhall Council, and Student Senate Caucus) but not in the PHP is used as a control group (group 2). Our main control group consists of students who are neither involved in the PHP nor in student government (group 3). Over the three years of this study, around 2500 students participated in the research project. These students completed the assessment with questions relating to the four clusters of skills defined by Evers and his colleagues (1998).

The fall of 2009 was the first year of testing on the Peer Helper and control groups. Peer Helpers from the University of Guelph in their second year of study or beyond were included in the data collection. A total of 121 Peer Helpers were involved in the current study. This approach provided the project with some Peers who previously had no Peer Helper experience (students who joined the PHP in their second year of study) and others who had up to three years of Peer Helper experience. The new Peers – those with no prior experience as Peer Helpers – were excluded from the fall 2009 data since they had no relevant experience at that time. However, their data were included in the second and third year of data collection since, by then, they would have had sufficient peer experience.

In the fall of 2010, the second year of testing, the research team attempted to contact all those participants who had taken part in the fall 2009 testing, with the goal of examining how their involvement in the PHP may have led to better skills acquisition over time. We had hoped that retention rates would remain high across the three years of data collection for both the experimental group and the two control groups. In the fall of 2011, the same methodology as in the fall of 2010 was employed. Personal emails were sent to past participants, requesting their continued involvement in the study. The message also included a reminder about the importance of retention in this longitudinal study. Unfortunately, due to low numbers of Peer Helpers in the second year the study had to move from a longitudinal to a cross-sectional design.

This study employed objective-type instruments rather than the subjective ones associated with self-perception or external evaluation and often used for these types of studies. The evaluation of skills using self-perceived subjective reporting has increased in the past decade. Subjective testing is usually carried out using a scaled method, where participants gauge where they fit on a scale in relation to a specific question. This form of subjective testing is easily coded and convenient, since there is no data requiring interpretation. However, we share the opinion of Dunning, Heath and Suls (2004) who argue that self-assessments do not provide an accurate evaluation of skills, knowledge, expertise, talent, personality and moral character.

Some may argue that having the evaluation completed by another person, a manager or another trained individual, may present a more objective way of looking at skills and competences, although an observer bias remains present. In third party assessment, the assessor can be a teacher, researcher, inspector, manager, or practically anyone who is capable of rating the test subject's performance (Cohen et al., 2000; Davis et al., 2006). Although the PHP currently assesses its Peers Helpers using this approach, this form of assessment was not selected for this study, given the potential biases associated with this method.

To reduce the potential self- or observer-related evaluation biases, a strategy was selected whereby objective measures are obtained by asking participants to respond to scenario-type questions that do not directly ask about the skill being examined but that instead assess the degree of skills acquisition on the basis of the students' answers to these questions. Responses to these scenarios were coded and points were assigned to specific pre-determined elements in the participants' responses in accordance with the degree of skills competence demonstrated in their open-ended answers. The evaluation of Peer Helpers' and control cohorts' responses were conducted independently by external and uninvolved raters, which, we expected, would reduce bias and increase assessment reliability. Each scenario presented in the assessment was evaluated on a 15-point scale, using a coding strategy developed to assess the range of skill acquisition demonstrated for each of the four base competencies (see Appendix A to review the scenarios).

In this study, we expected to find that students in the PHP would score higher on the scenario measures of the four base competencies than both those in the student government programs and those in neither PHP nor student government. We anticipated the study to produce a ranking with Peers scoring highest, student government second and uninvolved students third. This hypothesis seemed reasonable, as the PHP students dealt directly with the base competencies in their placements and student government students were involved in alternate forms of practical skill development. Students in neither the PHP or student government would not have the same institutional opportunities to develop transferable skills. We also expected to find that the base competencies of students in the PHP would increase over time.

We asked all study participants to rate themselves on a five-point scale for each of the four bases of competence. By doing so, we hoped to determine whether the subjective ratings would correlate highly with the scenario-based scores, which would in turn imply consistent measurements. We also verified the internal correlations of the bases scores for subjective and objective measurements.

Methodology

Measurement and Tools

Participants in each group were asked to respond to four scenario-type questions, each pertaining to a certain skill competency listed in The Bases of Competence (examples in Appendix A). The research team had the privilege of working with Teaching Support Services (a service unit for on-line instructional projects at the University of Guelph) as well as Desire2Learn (a student online management system) experts to create an online version of the evaluation tool. There were many benefits to using an online method of data collection. The survey was conveniently available to all undergraduate students on the home page of their Desire2Learn course management website. This not only increased traffic to the survey but also allowed the students to easily answer questions at any computer with Internet access.

The students were first presented with instructions on how to open and answer the questions in the online survey. A letter of consent appeared before the survey questions, and an online agreement was required. Once students had submitted the survey, they were given an indication that their name had been entered into a lottery for one of five prizes of $200. While this online survey was a recruitment tool in itself, with a message delivered to all students directing them to the survey link, further recruitment efforts were carried out over the three-year study.

During each of the three years of this study, data were collected during the fall semesters (i.e., fall 2009, fall 2010, and fall 2011). Over the course of the semester, students were recruited via emails, word of mouth, emails from student presidents, and the availability of the survey through their online course management system. Particular attention was paid to the recruitment of students from the Peer Helper Program and student governments to ensure adequate representation from these groups.

After the survey was closed to students, test markers used detailed scoring keys (Appendix B) and rubrics (Appendix C) to score students on the four objective questions. These rubrics were created to ensure inter-rater reliability and to ensure that scores being extracted would be consistent among people using the same methods. The marker of the questions was unaware of any of the participants' information other than their student number, which was used only for identification and matching to coded information.

After the first year of survey completion, the researchers came to the conclusion that, since the survey took place during the fall semester, when new Peer Helpers would have just started their training, these participants (around 40 students per year) should be excluded from the analysis due to their lack of experience in the program. While the removal of their data decreased the sample size of the Peer Helpers, the researchers deemed that these data points would be unrepresentative of the effects of PHP training.

As noted, the survey was originally intended to allow researchers to follow students longitudinally over the three-year course of study and to compare students in each of the three groups. However, this strategy was not possible due to the low number of students who completed the survey more than once. The data were therefore analyzed using a cross-sectional method. Results obtained in each year were aggregated and overall data were examined after the final year of data collection.

Scoring Example Using the 'Communicating' Rubric

The following is an example of how scoring was completed for one of the four competence scenario-type questions (see Appendix A – Sample Question – COMMUNICATING). Here, students were asked to write a short paragraph for a local newspaper explaining the sleep schedule of a typical university student. The newspaper's audience was identified as adults over the age of 40.

Objective marking for the 'Communicating' question was fashioned in such a way as to have participants demonstrate their listening (reading) and writing communication skills. The most important dimension of this question lay in how the participant determined what to do to satisfy the scenario. The formulation of an answer to the question involved not only summarizing the points that were presented but also drafting a short paragraph that was suitable for the specified audience. The students' ability to employ proper grammar and spelling was assessed. If the answer was readable and well-organized, the participant received full marks in these sections (see Appendix B and C). The organization of the answer as well as its specificity increased the score. These sections were tallied for a total mark out of 15 on the 'Communicating' competence. A sample answer to this question can be found in Appendix D.

Different questions were asked to assess each base of competence and students were graded on their ability to demonstrate elements of the skills being interrogated. Similar rubrics were made available for the remaining questions on 'Managing People and Tasks,' 'Managing Self,' and 'Mobilizing Innovation and Change.' Each scenario-type question was graded out of a possible 15 marks. A subjective evaluation of the four bases was included by asking the participants to rank their competence on each of the four bases from one (very low) to five (very high). These subjective measures were compared to the objective (scenario) questions.

The comparisons of the two groups were analyzed with Student's t-test while the three-group analyses were done using an analysis of variance. All analyses were conducted with the Statistical Package for the Social Sciences (SPSS). Data management was done with Microsoft Excel.

Results and Discussion

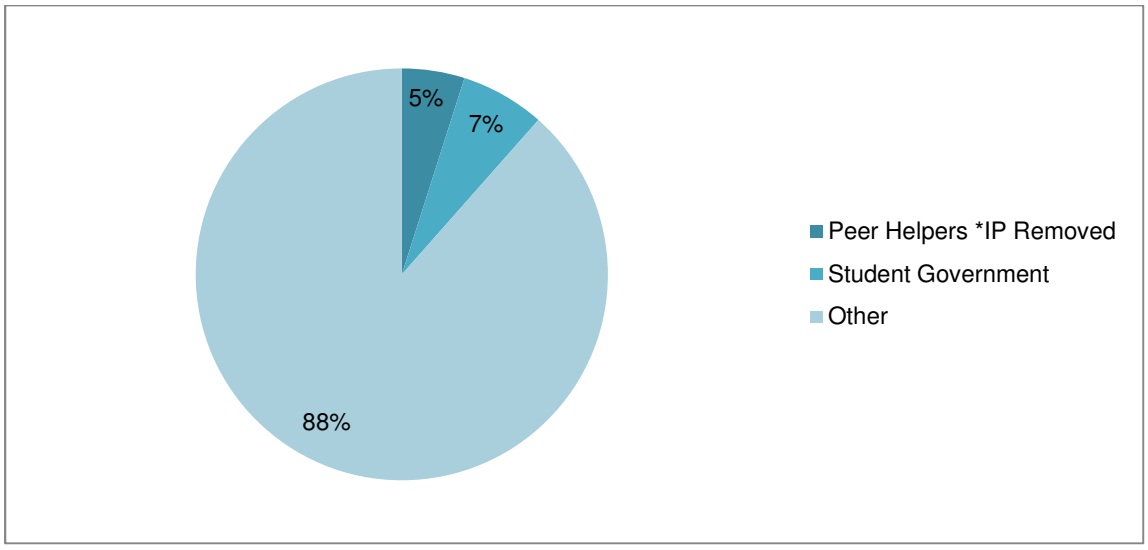
Participants

As noted, three groups of students participated in this research: (1) the Peer Helpers, who made up the treatment group; (2) students involved in student government, such as the Central Student Association; and (3) other students involved with neither the Peer Helper Program nor college government. Overall, this study gathered extensive data from 2470 full-time undergraduate students from the University of Guelph who volunteered to participate in this research in one of the three years. Consistent with the population of the University of Guelph, there were a greater number of female (n = 1734, 70.2%) than male (n = 730, 29.6%) participants in this study.

During each individual test year, sample sizes were consistent with the university's population size. The Peer Helpers (n = 121) were the smallest group, making up 4.9 per cent of the sample. Students involved with student government (n = 162) accounted for 6.6 per cent of the sample and the control group, comprised of students who were neither Peer Helpers nor in student government (n = 2183), made up 88.3 per cent of the sample (See Figure 1). At the time of survey completion, all participants were enrolled in undergraduate

courses at the University of Guelph. First-year “in progress” Peer Helpers had received training but had not yet served in their Peer roles when sampled, so the “IP” group was dropped from the analysis.

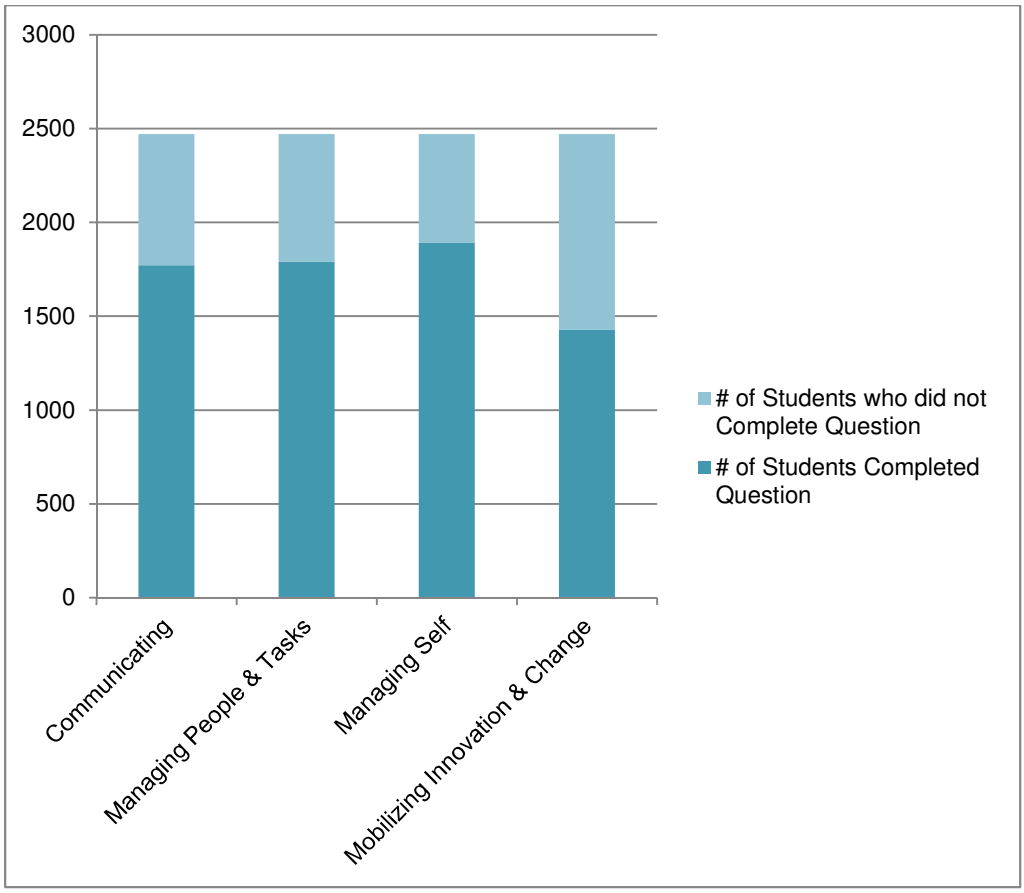
Figure 1: Experimental Population – Peer Helpers, Student Government, and Other



*IP indicates “in progress” peer helpers who have received training but have not yet experienced what it is like to be a peer helper.

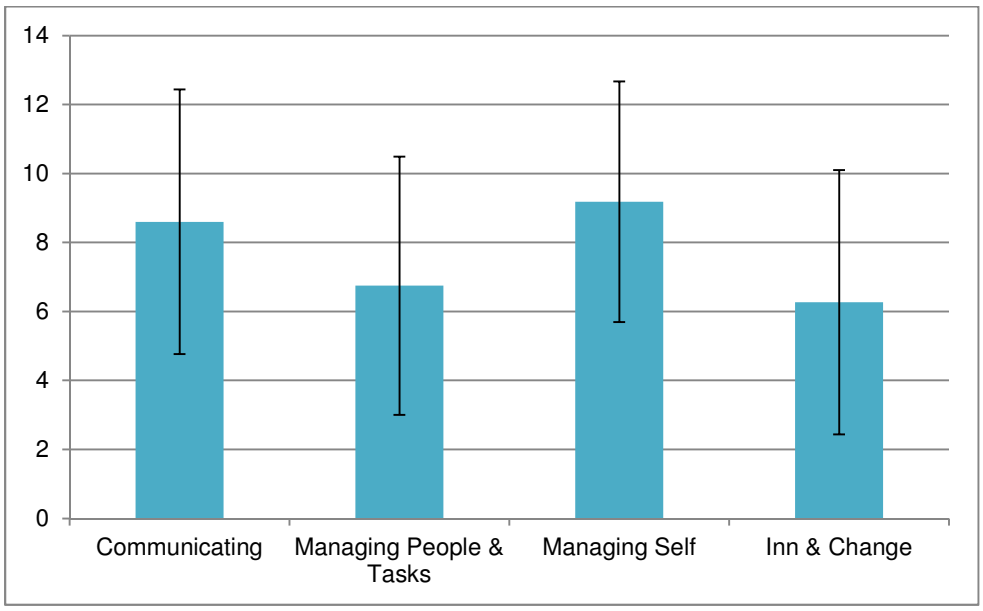
Although we had intended to perform longitudinal analyses, only five students completed the survey in more than one year. The data for these five students were removed from the analysis, since repeated participation may have affected their responses. Therefore, all participants included in our analyses were undergraduate students completing the survey for the first time. Because our initial goal of providing a longitudinal comparison of these three groups’ responses was not achieved, the data were collapsed across all three years of the study. Students completed the survey on a voluntary basis which, as we expected, resulted in incomplete data. However, a reasonably high proportion of students completed the objective survey questions, which provided sufficient data for our analyses (see Figure 2).

Figure 2: Completion of Objective Questions in Survey



The rubrics for each of the four bases of competence measured the acquisition of these skills with a possible total of 15 marks for each question in each of the three years of the survey. The questions were altered over the years to accommodate those students who took the survey more than once. The rubrics, found in Appendix C, were similar within each year of data collection to ensure consistency in the skills measured. The content of the rubrics reflected each year's scenario question. The overall means for each of the four questions can be seen in Figure 3.

Figure 3: Comparing Means of the Four Competencies

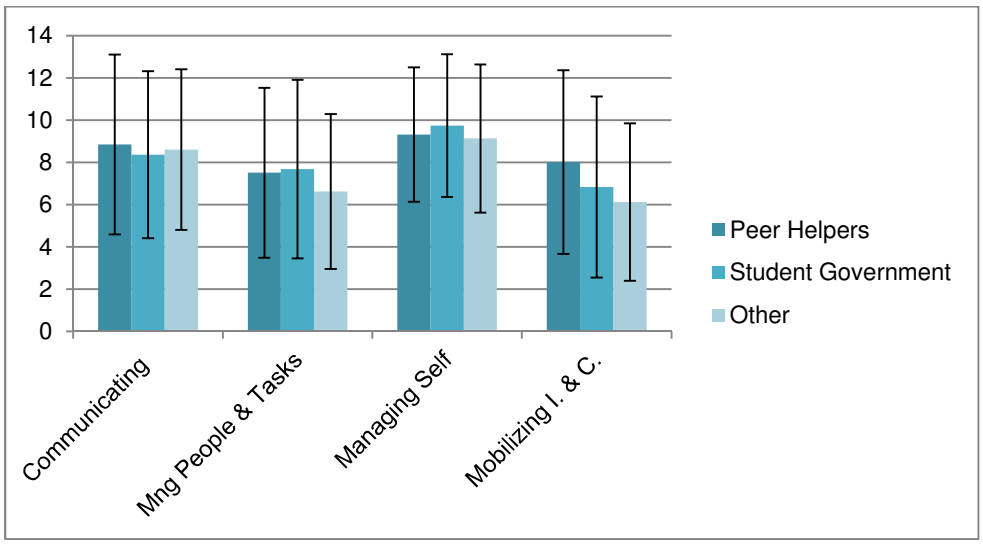


Standard deviations are indicated.

Overall, the lowest scores were obtained with the 'Mobilizing Innovation and Change' question (mean = 6.27, s.d. = 3.83), while participants scored highest on 'Managing Self' (mean = 9.18, s.d. = 3.486). 'Mobilizing Innovation and Change' was consistently the question that resulted in the lowest scores.

Peer Helpers scored highest on 'Mobilizing Innovation and Change' (Figure 4). This is a significant ($p<.01$) analysis of variance finding. The mean for this test was 8.01 with a standard deviation of 4.34. Student government participants scored higher than the other two groups on 'Managing People and Tasks' (mean=7.68, s.d.=4.22, $p<.05$). Analyses of test results for the other competency questions were not statistically significant.

Figure 4: Graph of Means by Question and Group (Objective Measures)



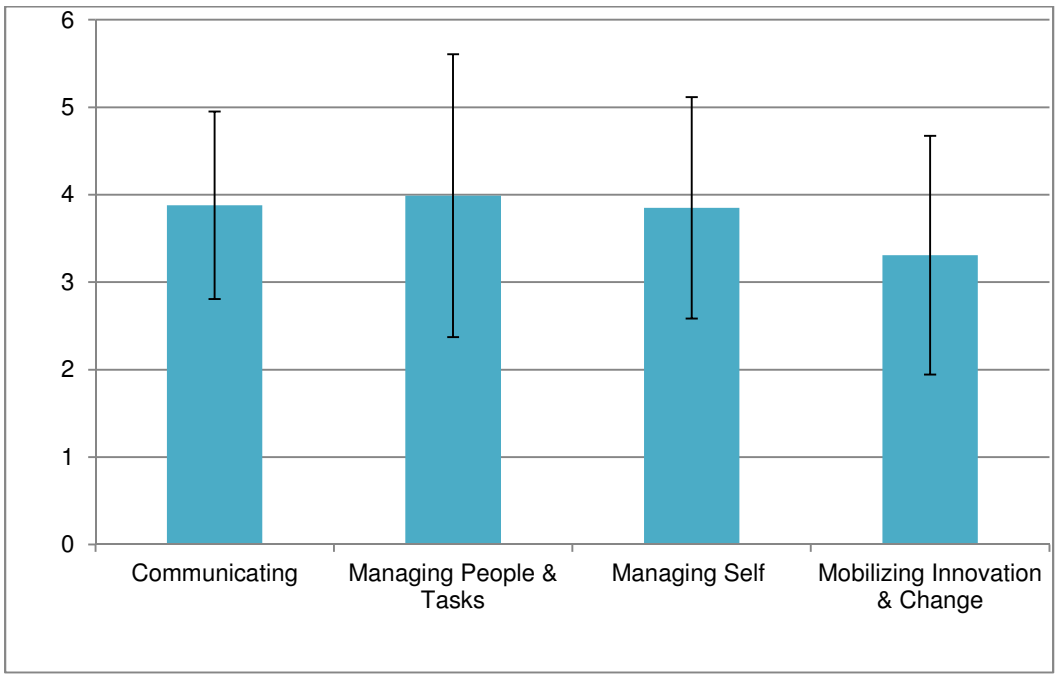
Standard deviations are indicated.

High overall scores across all bases were expected from the Peer Helpers. These students have been specifically trained to develop and utilize valuable skills and have demonstrated the acquisition of these skills using this study's measurement of competencies. It is telling that the Peer Helpers significantly exceeded the other groups in this study on the skill that proved to be the most difficult ('Mobilizing Innovation & Change'). Given the nature of their training, this result should not be surprising.

To explore whether participation in extra-curricular activities provided in itself a sufficient opportunity to develop skills aligned with our measured competencies, we also chose to compare the skill competencies of our participants using a different form of grouping (i.e., ignoring the Peer Helper, Student Government, and Group 3 designations). This analysis is based on the documented evidence that co-curricular activity in general enhances workplace skills (Massey et al., 2012). When comparing those students who were involved with in-school activities, such as student council, residence assistance, and other on-campus involvement, to those students who were not involved in any such activities, we found that the involved students had statistically significantly (p<.05) higher values for 'Managing Self,' 'Communicating,' and 'Mobilizing Innovation and Change.' Interestingly, these results were not found when students indicated that they were involved in out-of-school activities, such as part-time employment. This emphasizes the importance of student involvement in intentionally-designed activities provided by higher education institutions.

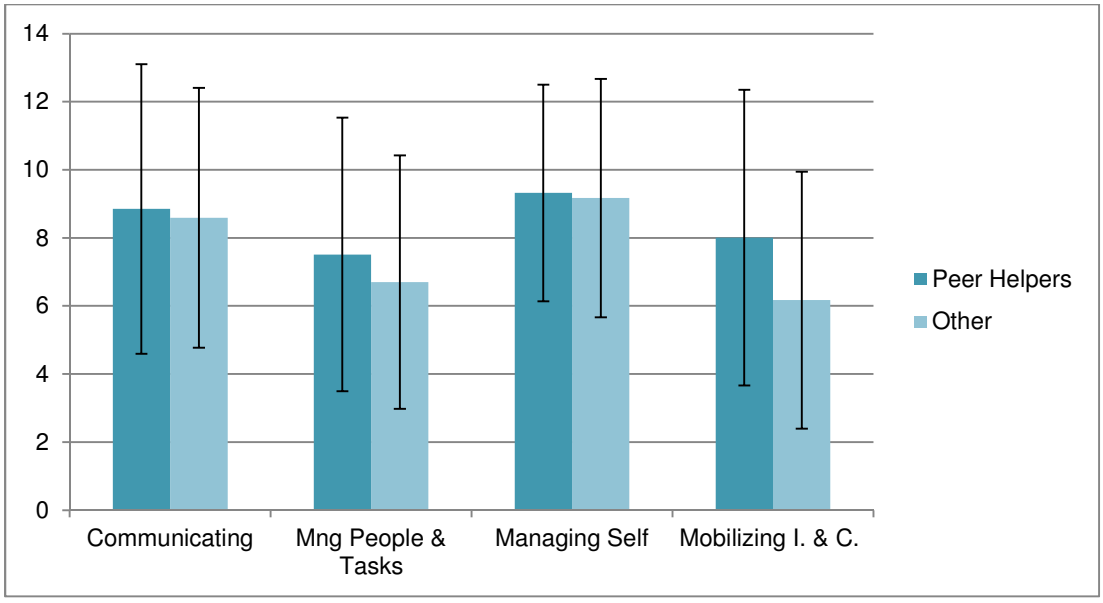
In separate analyses, we compared the participants' subjective rating of their skills on each of the four competencies. The question simply asked participants to indicate, on a scale of one to five, with one being "very low" and five being "very high," how competent they felt they were on these skills. Means and standard deviations for these scores are found in Figure 5.

Figure 5: Graph Comparing Means of Subjective Competencies



Standard deviations are indicated.

Figure 6: Graph of Means by Question and Group (Objective Measures)



Standard deviations are indicated.

The Peer Helpers scored themselves highest on 'Managing Self' and very closely on the other competencies (see Figure 6). This pattern may be due to the fact that Peer Helpers are very familiar with what these competencies entail due to their training, since a similar self-evaluation of these competencies is administered within the program. Peer Helpers can reflect on these skills and see when they have improved on them. However, we should note that the Peer Helpers' subjective self-report of competencies, which are either at or approaching a score of four out of five for each of these competencies, appear proportionally higher than the objective scores they received when these same skills were measured on a more objective metric, where they scored below ten out of 15 on each of the bases. This may explain why, while the correlations among the four competencies were all statistically significant and of moderate value for both the objective (see Table 1) and subjective competencies (see Table 2), the correlations between the subjective and objective types of measures for the same competency did not approach statistical significance.

Table 1: Correlations Within Objective Measures of Competencies

		Mobilizing Innovation & Change - Objective Measure	Managing People & Tasks - Objective Measure	Communicating - Objective Measure
Managing People & Tasks - Objective Measure	Pearson Correlation	.412**		
	N	1379		
Communicating - Objective Measure	Pearson Correlation	.271**	.326**	
	N	1304	1591	
Managing Self - Objective Measure	Pearson Correlation	.330**	.342**	.306**
	N	1394	1718	1656

**Correlation is significant at the 0.01 level (2-tailed).

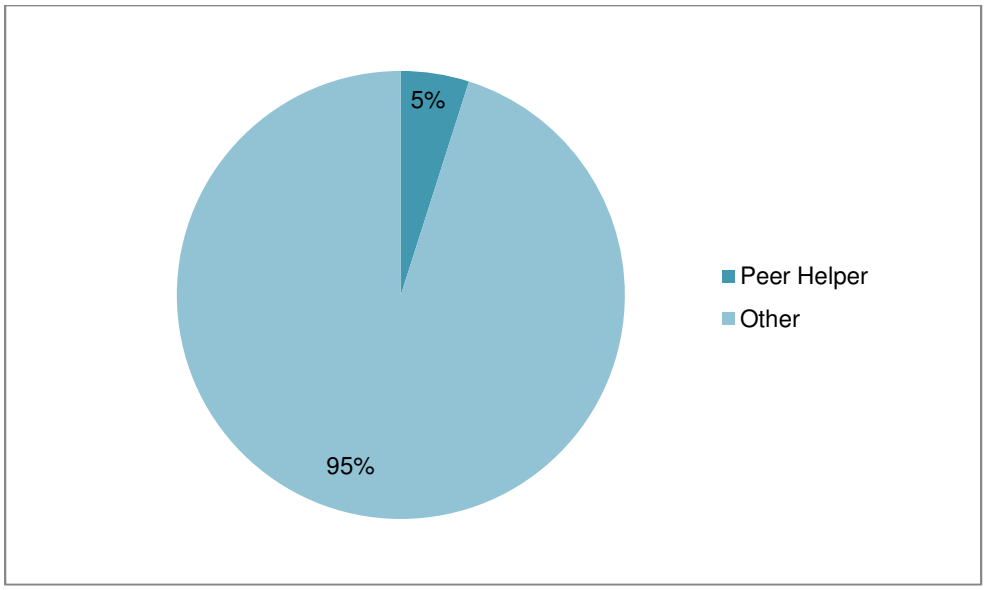
Table 2: Correlations Within Subjective Measures of Competencies

		Mobilizing Innovation & Change - Subjective Measure	Managing People & Tasks - Subjective Measure	Communicating - Subjective Measure
Managing People & Tasks - Subjective Measure	Pearson Correlation	.629**		
	N	2288		
Communicating - Subjective Measure	Pearson Correlation	.151**	.508**	
	N	2283	2277	
Managing Self - Subjective Measure	Pearson Correlation	0.526**	.475**	.155**
	N	2265	2273	2266

**Correlation is significant at the 0.01 level (2-tailed).

As a final analysis, the data were collapsed into two categories to compare the skills acquisition of Peer Helpers (n = 121) with that of members of the other two groups (students in government and uninvolved students, n = 2344) (see Figure 7).

Figure 7: Percentage of Experimental Population – Peer Helper and Other



The data analysis revealed that while the Peer Helpers had higher scores on all four skills, they had only a significantly higher score in the 'Mobilizing Innovation and Change' category ($p < .05$)(see Figure 5).

Conclusion

Overall, our research indicates that the students involved in the Peer Helper Program scored statistically significantly higher than members of comparable groups on some of the skills that we assessed. It was expected that the Peer Helpers would excel at all four competencies, but this hypothesis was not confirmed by the current study. We can confidently say that these students are better at 'Mobilizing Innovation & Change' than were other groups included in this study. However, we cannot confidently say that Peer Helpers are stronger in all competencies since a comparison of the group means did not approach significance. We also do not have evidence that students in student government ranked second among the three groups, as we had thought would be the case.

'Mobilizing Innovation and Change,' on which the Peer Helpers consistently scored the highest, was the question completed least frequently by all participants and resulted in the lowest mean score. It is telling that the most difficult skill, according to these measurement tools, is the skill at which the Peer Helpers performed best, perhaps indicative of their training. It is important to note that those students accepted into the Peer Helper Program may already be exceptional students, having passed the minimum program requirements and maintained a healthy academic and co-curricular time management plan. They are also interested in giving back to the campus community. One might anticipate that these qualities would also be evident in the

student government group. Yet Peer Helpers still scored significantly higher than this population in the 'Mobilizing Innovation & Change' skill category.

We were also able to measure skill competency levels using scenario-type objective measurements, which serve as an alternative to simply asking respondents to rate their ability on various skills subjectively. It should be noted that scoring scenario-type responses is very time consuming. We found that both objective and subjective measurements of the four bases showed significant internal correlation. However, and perhaps not surprisingly given the nature of self-report, correlations were not significant across subjective and objective measures of the four bases. This finding further illustrates the point made in our introduction about the need to include more objective forms of assessment when attempting to measure the acquisition of transferable skills or competencies. Self-report alone will not provide an accurate reflection of the true nature of a student's capacity.

We also compared skills competency between two groups: those who were involved with in-school activities, such as student council, residence life, and other on-campus involvement, to those students who were not involved. The involved students had significantly higher scores in 'Managing Self,' 'Communicating,' and 'Mobilizing Innovation and Change.' Interestingly, these results were not found when students indicated that they were involved in out-of-school activities, such as part-time employment. This finding highlights the importance of student involvement in intentionally-designed activities provided by higher education institutions and suggests that well-designed university programs can greatly assist in reducing the apparent and documented gap in transferable skills described by research and employers alike.

As is often the case with projects of this sort, we conclude our paper by highlighting the need for further research that examines the impact of university co-curricular programs that are designed to enhance the transferable skills set of our students. Such skills have a demonstrated positive impact on the transition to the world of work and on the perceived sense of competence of students who are looking for work or have just entered the workplace. We urge researchers to consider the use of an objective form of skill assessment, such as the one developed for this study, since self-report measures can lead to inaccurate reporting and an apparent over-confidence by all students who complete these forms of assessment.

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