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Peer learning for university students' learning enrichment: Perspectives of undergraduate students

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ABSTRACT
Peer learning, which is supported by learning theories such as Behaviourism, Cognitivism, Social Constructivism, and Connectivism, is increasingly gaining the attention of researchers and practitioners with an emphasis on student-centered learning in educational settings. A review of relevant literature indicates that higher education institutions employ a variety of peer learning programs that potentially benefit both those who receive help and also those who provide help among peers.

This study was designed to find out what peer learning programs are available at the University of Windsor, Canada, where the authors teach; how they are operated; and how undergraduate students from different academic programs at this university perceive such programs. Based on the findings, recommendations are made for faculty members as well as student service units to implement various types of peer learning so as to provide students with the best possible learning experience.

INTRODUCTION

The purpose of this study was to investigate peer learning at the University of Windsor, a mid-sized university in Ontario, Canada. The university states that its mission is to combine "a strong and focused emphasis on the learning experience of every student" (The University of Windsor, n.d.); peer learning is deemed to be one of the useful approaches that can help to enhance the student learning experience in a higher education setting. With this in mind, we are interested in finding out what peer learning programs are available on campus and in exploring research participants' perspectives of peer learning as it relates to their programs of study.

LITERATURE REVIEW

Peer learning can be defined as "the acquisition of knowledge and skill through active helping and supporting among status equals or matched companions. It involves people from similar social groupings who are not professional teachers helping each other to learn and learning themselves by so doing" (Topping, 2005, p. 631), or "students learning from and with each other in both formal and informal ways" (Boud, Cohen, & Sampson, 2001, p. 4). Research literature on peer learning has documented relevant programs with different names and formats, such as Students Supporting Students Learning (SSSL) (Best, Hajzler, Pancini, & Tout, 2011), Supplemental Instruction (SI), Peer Assisted Study Sessions (PASS), Peer Assisted Learning Sessions (PALS) (Copeman & Keightley, 2014), and peer tutoring (Topping, 1996). SSSL was a combination of a variety of peer learning and student peer mentoring strategies, and Copeman and Keightley (2014) argue that the PASS

model is not only supported by Behaviourism, Cognitivism, and Constructivism, "but also aligns with the more recent learning theory of Connectivism" (p. 3), which introduces the concept of learning communities where participants are stimulated to connect with "similar areas of interest that allow for interaction, sharing, dialoguing, and thinking together" (Siemens, 2003, "What is a community?", para. 1). Best et al. (2011) have asserted that the PASS program was recognized as "a successful strategy for increasing both the social and academic engagement of students involved" (p. 26), with 91% of research participants reporting that the program increased their knowledge in the subject and 88% reporting that it improved their confidence in the subject. Ginty and Harding's (2014) study conducted at two higher education institutes in Ireland, that were using PASS and PALS respectively, found that there was "an overall positive experience of the peer assisted learning program at both institutes" (p. 52). Whitman (2012) and Annis (2013) argue that peer tutoring can be intellectually rewarding as it can help students perform better on higher-order conceptual understanding.

In regard to peer learning, there is an emerging theory of paragogy (also known as peeragogy), which argues that doing peer learning gives participants an opportunity to practise collaborative sharing of power, responsibility, meaning, and knowledge with co-responsible others (Arenas, 2012). Longfellow, May, Burke, and Marks-Maran (2008) assert that peer learning is important because "whilst teachers may be experts in their subject area, students are experts at being students, and thus are arguably better placed to lead novice students towards becoming expert students" (p. 95).

It seems that research literature concerning peer learning also uses expressions such as "peer mentoring" and "peer tutoring." Budge (2006) provided eight different definitions of mentoring: (1) a more advanced or experienced individual guiding a less experienced individual; (2) an older individual guiding a younger individual; (3) a faculty member guiding a student; (4) an individual providing academic advising; (5) an individual who shares their experience with another individual; (6) an individual who actively interacts with another individual; (7) an experienced individual guiding a group of individuals; and (8) an experienced, older individual who guides a younger, less experienced individual via internet resources (p. 79). Eby and Lockwood (2005) talk about informal mentoring, stating that it is a spontaneously developing relationship between two or more individuals, where one individual provides support, advice, and guidance to the other individual(s).

The distinction between peer mentor and peer tutor made by Zamberlan and Wilson (2017) refers to the former as voluntary while the latter is contracted. According to Townsend, Delves, Kidd, and Figg (2011), "peer mentoring was that mentors took on a supportive role offering general assistance and advice and referring mentees to appropriate university support services" while peer tutoring "was seen as more of a teaching role where mentors assist with very specific curriculum assistance" (p. 41). However, Townsend et al. state that "most common types of mentoring in a university setting include academic mentoring, peer tutoring, and peer mentoring" (p. 37). This can be interpreted as peer mentoring and peer tutoring both serving the purpose of peer learning and support, even though they state that "[T]here is a difference

between peer mentoring and peer tutoring/learning and these two types of programs need to be distinguished in any future integrated model" (p. 45). We are aware that there are certain differences among the terms of "peer mentoring," "peer tutoring," and "peer learning."

Vaidya (1994) states that peer mentoring can have positive effects on both the mentees and mentors, such as the development of interpersonal and communication skills as well as the expansion of qualities such as patience and compassion. Research also found benefits related to mentoring programs including maturation, time management, and greater responsibility (McLean, 2004). Many programs already require training for their peer tutors (e.g., Hammill, Best, & Anderson, 2015; Kohut, Burnap, & Yon, 2007); however, programs that do not train their mentors need to implement training before any effective mentoring can occur (Grant-Vallone & Ensher, 2000; Mee-Lee & Bush, 2003; Packard, 2003; Quinn, Muldoon, & Hollingworth, 2002; Yates, Cunningham, Moyle, & Wollin, 1997). Mentoring can be a valuable transition strategy (Chester, Xenos, & Burton, 2012), which is supported by studies conducted by Hardegree (2012), indicating that peer mentoring is a well-established method employed by higher education institutions to assist in the integration of students into university. It is argued that the value of peer mentoring in higher education is "not just reflective of the support given to new students in the first few days and weeks of university. Instead it is indicative of the longer-term reciprocal relationships made between peers in which both benefit and both succeed" (Andrews & Clark, 2011, p. 13).

RESEARCH QUESTIONS

The following research questions were used to guide this study:

1. What types of peer learning do undergraduate students experience on campus?
2. How do research participants perceive peer learning as it relates to their programs of study?
3. What recommendations do research participants make regarding their peer learning experiences?

METHODS

A mixed methods approach (Creswell, 2009; Hesse-Biber, 2010; Teddlie & Tashakkori, 2011) was employed and research data were collected through an online survey to gather participants' demographic information and their experience of peer learning, while focus groups were conducted to acquire an in-depth understanding of participants' knowledge and perspectives regarding peer learning.

All undergraduate students at the University of Windsor, a mid-sized university in Ontario, Canada, were invited to participate in the study. After the approval of the Research Ethics Board (REB) of the university, the link to the online survey was forwarded to all of the undergraduate students with the help of the university's Registrar. Students were invited to participate anonymously, and when the "Submit" button on the online survey was pressed, a new webpage would open to give thanks for participation, followed by an invitation asking those who would be interested in participating in a focus group to contact the researchers by e-mail or phone.

In addition to completing an online questionnaire, ten participants voluntarily participated in a face-to-face interview or focus group discussion led by both researchers. All participants were undergraduate students representing a variety of programs of study. The survey questionnaire was used to acquire general demographic information on the target population (e.g., gender, age) to determine what, if any, experiences they have had with peer learning, and to invite participants to be a part of a focus group. The primary purpose of the focus groups was to investigate in greater depth participants' understanding of peer learning. While the original intention was to have a series of focus groups involving a number of participants, availability of the participants resulted in some one-to-one interviews. The interviews and focus group discussions were recorded with digital voice recorders, and the audio data were transcribed before they were analyzed.

FINDINGS AND DISCUSSION

Survey data

At the time when the online survey was administered, there were 10,882 registered undergraduate students (The Office of Institutional Analysis, n.d.), and 654 responded, which represents about 6.60% of the eligible population for this study. We understand that the response rate to an online survey is normally lower than traditionally accepted response rates (Kraut et al., 2004), especially in the field of social sciences, but we nevertheless analysed the data collected. However, given the low response rate, the findings may not be representative of the target population. Still, we feel it is valid to report on these data because of the quality of the responses of the participants. Following are some interpretations of the survey data:

In terms of gender, as shown in Table 1, the majority (68.7%) of participants in this study were female students.

Table 1
Respondents' gender

Gender	# respondents	%
Female	449	68.7
Male	199	30.4
Other	6	0.9
Total	654	100

The six participants who chose the "Other" category selected "Prefer not to say," wrote "Two Spirit," or left it blank.

Table 2 shows that there is an almost equal distribution of participants in terms of their year of study.

Table 2
Year of study in their program

Year of study	# respondents	%
1st	167	25.5
2nd	141	21.6
3rd	160	24.5
4th	140	21.4
Other	43	6.6
Non-response	3	0.4
Total	654	100

As shown in Table 2, response percentages were similar for 1st- and 3rd- as well as 2nd- and 4th-year students. The "Other" category includes 5th-year, two degrees, and other similar circumstances.

As shown in Figure 1, half of the participants were between the ages of 19–21, and the other three categories resulted in a similar distribution.

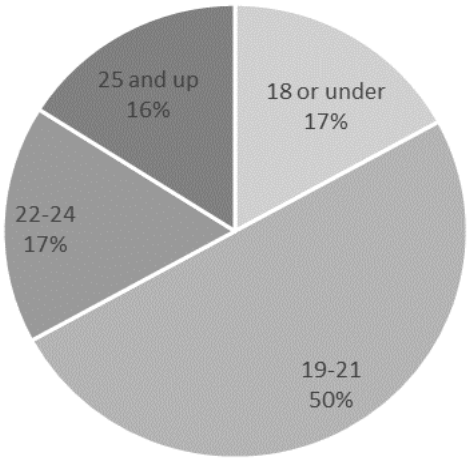

Figure 1. Participants' age.

Regarding degree being pursued or program of study enrolled in, the vast majority (97.4%) chose "bachelor's degree" and the rest either did not identify or chose other programs such as "graduate" or "non degree." In terms of program of study, 59 programs of study were represented. Engineering, biology, psychology, and nursing were the programs that had 50–60 participants, followed by social work, business, and criminology, which had approximately 30–40 participants. Programs such as human kinetics, English, medical, computer science, accounting, communication, political science, history, neuroscience, and international relations had 10–20 participants, and the rest had 1–9 participants.

As demonstrated in Figure 2, half of the participants indicated that they were not familiar with "peer learning/mentoring."

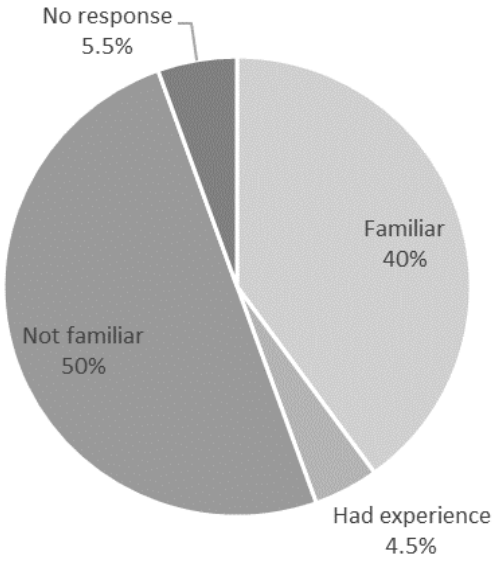

Figure 2. Participants' familiarity with the term "peer learning/mentoring."

Among those who responded to the question "Is there a 'peer learning' or 'peer mentoring' program associated with your program of study or degree?" approximately 60% said "Yes" and approximately 20% said "No"; the rest responded with "Not sure/Don't know." Among the participants who reported there is a "peer learning" or "peer mentoring" program associated with their program of study, approximately half said they had been involved or participated in such programs or activities, and the other half said "No."

Given that approximately half of the participants had been in the university for two years, it was somewhat surprising to find that among all the participants, half of them (Figure 2) had never heard of the terms "peer learning" or "peer mentoring." This is an indication that such programs need to be established, and equally important, awareness of the available programs should be raised among students of different disciplines and levels.

Focus group data

(a) Preamble

The interview and focus group schedule consisted of 12 questions. Answers were sought relating to participants' educational background and year of study (demographic), their understanding of and experience with peer learning, what they considered were the qualities of a good mentor, and what they thought their post-secondary institution could do to better promote peer learning or mentoring.

(b) Program of study

The participants were enrolled in a wide variety of disciplines representing both the humanities and sciences, similar to those who completed the online questionnaire. However, there were more participants from some disciplines than others, which means that our findings, especially regarding awareness

and availability of programs related to peer learning, could not be considered representative of the student body across campus. Still, the findings are important because the responses from participants reflect their general familiarity with peer learning and are seldom specific to a particular program.

(c) Understanding of "peer learning" or "peer mentoring"

We wanted to first examine participants' understanding of peer learning or mentoring. Some participants offered general statements as to their understanding of peer learning, stating that it involved "learning from others" which could mean "collective [group] work," possibly involving students in the same program of study or one-to-one learning.

Other participants indicated that implied in this term (peer learning) was the inevitable fact that one individual possessed superior knowledge or "more experience in the field" and was in the role to advance another's learning.

Participants provided subtle distinctions between "peer learning" and "peer mentoring." Implied in the distinction is the fact that peer mentoring involves a more formal setting than peer learning. While peer learning may take the form of "group study," peer mentoring "is more like a leadership role" and is often "more formalized." When speaking of peer learning, participants spoke of their classmates or friends, whereas peer mentoring involved receiving help from someone with supposedly superior insight or knowledge (e.g., a senior student or graduate student), someone they may or may not know on a personal level.

Participants suggested that peer learning often occurred informally as a result of "friends" getting together to help each other to better understand and remember ideas and concepts presented in class. Often this took the form of a quiz study session.

While participants did not offer a consistent operational definition of peer learning or peer mentoring, they subtly distinguished between the two, which was different from our understanding that "peer learning" was an "umbrella" term and "peer mentoring" or "peer tutoring" are forms of peer learning. There seemed to be a tendency for participants to think of "peer learning" as something more informal while "peer mentoring" was considered more formal, happening within programs set up by a student service unit, department, or professor of certain courses. It seems the research participants' vague definition of the terms in some way echoes what is found in relevant literature.

(d) Experiences with peer learning/mentoring

One participant described her experience with peer learning as follows:

> I see a lot of first-years coming and they are overwhelmed. So you just take them under your wing and let them know—this is what needs to be done and you'll get to where I am at. So just through previous experience, calm people down and show them some tips and tricks, I guess.

Some participants identified class group work (e.g., project or assignment-based) as a form of peer learning, while others suggested a more formal process.

> I've been a mentor for *Collecting4Success*. That's more formal. We actually reach to you as a senior student and the new students coming in and those that need a mentor. They're usually on a matching basis, your degree, similarity you have in your program.

Participants also stated that where students often congregate encourages peer learning.

> There's a computer science lounge. A lot of people in the program in any year would hang out there and work on things and socialize. If you ever need help, it's very easy to go to a group of people and ask them for help. I've done that a few times.

Informal group get-togethers were identified as a means of advancing individual learning within a common support system. "You and your group members can work together to learn something together….We are trying to figure out something our professor didn't really teach us, or kind of mention it but didn't go in depth."

Participants indicated that, because they had taken a particular course, less experienced undergraduate students had approached them for help. Proximity also played a role due to the fact that both groups of students had "shared the same computer lab."

Some suggested that the size of the academic unit contributes to more or less peer learning.

> Everyone just sort of jumps in and helps everyone else. And when I was in the biology program, you didn't see that as much. I think it may have been because the faculty is so large. You don't get to know your peers the way that you do in the small faculty.

Teaching assistants were identified as also being helpful, especially if they were in close proximity to where students had their classes. Students also suggested that in-class discussion groups were helpful.

Interviewees spoke of a "disconnect" between students and their professors with respect to academic knowledge and experience. While these traits were valued, it was also noted that it created a barrier between the two parties and could also influence pedagogy. "What comes easy to them [professors] does not necessarily translate to us….It's much easier to learn from a peer, because they're somewhere around the same level. And they break it down for you." However, it was also noted that while students might skip the professor's lecture, they would attend the tutorials with the TA because they receive marks for attending.

While one participant stated, "If you have a peer-learning group you're a lot more confident to ask questions, share information, going through things together….Peer learning, I think, is just a lot easier going." Others stated that

in some cases, a professor is the better choice, depending on the knowledge base and "approachability" of professors and peer mentors.

Participants who had experienced peer learning, especially those who served as mentors, were positive about the helpfulness. Like what was documented in relevant literature, they felt that students may in some way be better experts than professors as students know more about students' perspectives. The data also indicated that peer mentoring is available only in some programs of study, which may depend on the nature of disciplines or the different sizes of faculties and departments, but this could also be an indication that some academic units did not provide such a learning experience even if students needed it.

(e) Benefits of learning from peers

Participants stated that there were clear educational benefits to peer learning and learning from someone close to their own age group—someone who had gone through similar experiences (e.g., struggling) and could have "broadened their horizons." As one participant stated, "I think that different perspectives, perhaps even a collection of perspectives, shape your ideas." A possible side benefit of offering to help others with their learning is that "it helps you to get better, as well."

Participants spoke of peer learning representing a more level playing (learning) field compared to the more formal structure of professor-student interaction. This peer relationship suggests a more acceptable comfort zone, involving individuals with a number of similar characteristics. As one participant stated, "There is not someone above you….You can understand each other easier." In addition to "equal standing," participants identified "trust" as one of the necessary conditions for successful peer learning to take place.

One participant identified specific advantages when learning from one's peers.

> [It is] faster to learn through peers….Not everyone learns at the same pace. If you are learning from your peers or someone a little bit older than you, it's more personal and they can teach you based on how you learn best and what you already know.

In this context, there also exists peer pressure to keep face, which in turn may encourage students to investigate further if they do not know something. One participant suggested that working with a peer was more convenient and feedback was more readily accessible.

Besides "convenience" and "approachability," benefits of peer learning did not only lie in learning enhancement on subjects or courses but also in their academic and social growth, whether they learned from peers or provided peer tutoring or mentoring, as this experience could broaden horizons and help them get better.

(f) Challenges relating to peer learning/mentoring

We asked participants to share their thoughts with respect to the challenges (negatives) involved in the peer learning or mentoring process. Some spoke of

the possibility that students will become too (over) reliant on peer support, expect the peer "helper" to do much of the work, and even take advantage of the mentor's willingness to help. Participants indicated that some students use a peer to "get through the test, but it's more important to understand."

Participants suggested that peer pressure in group settings and individuals who are "just naturally shy" might be at a disadvantage when seeking academic help. Finally, interviewees stated that a lack of knowledge, providing incorrect or misleading information, or not focusing on the task at hand would have negative consequences. This resulted in one participant seeking out their professor who "retaught that portion of the course to us so that we could understand that question a little better."

Peer learning is meant for a learning experience that could benefit both the help seeker and help provider, so whether it is formal or informal, those who are involved in peer learning should be encouraged to focus on knowledge and skills development, not only for the purpose to "get through the test" as some perceive it. It is important to acknowledge that informal peer learning involves little obligation or responsibility. In addition to raising the awareness of such programs, it is sometimes necessary for program organizers to reach out to students, particularly new students, so that "naturally shy" students can also get involved and benefit from participation. Selecting and training mentors is also an important factor for the success of peer learning programs, which is addressed in the following section.

(g) Characteristics of a good peer mentor

Participants were very clear as to what they considered were good qualities of a peer mentor. They identified "patience, punctuality, good listening skills, sense of responsibility, and lots of knowledge" as being essential qualities in order to establish a successful peer learning or mentoring relationship. Some participants spoke of the need for a mentor to be "creative," implying that they could approach a topic from many angles in an attempt to "make you understand." Most acknowledged that not all individuals learn at the same speed and with the same degree of comprehension. Thus, it was important that mentors realize this and adjust their pedagogy accordingly.

Participants suggested that personal characteristics were also an important factor in building a successful relationship between mentor and mentee. They preferred an "outgoing" individual and someone who "has energy so we can bond together easily" compared to those "who are more introverted; they just focus on stuff." It was also noted that "approachability" and "confidence in the subject area" were additional qualities of a good mentor. As one participant stated, "I have to be able to ask you my question. You have to be able to tell me in a way that conveys the answer to me."

The mentor profile that interviewees created identified someone who could provide concrete evidence based on appropriate lived experience, academic knowledge, strong interpersonal skills, and flexibility with respect to pedagogy.

(h) Peer learning/mentoring and the university

Participants were asked, "Is there a place for peer learning or peer mentoring at this university?"

When asked about peer learning at their university, participants identified Graduate Assistants (GAs) and Teaching Assistants (TAs) as sources of academic assistance. Interviewees seem to put these student employees of the university in the same category as peers and mentors, possibly due to their closeness in age. They identified this type of academic instruction as formal. Participants also recognized that there were formal arrangements made by various departments (e.g., English department) to assist students in a specific course or subject area (e.g., calculus). Participants were aware of the Skills To Enhance Personal Success (STEPS) program, even if they had not accessed the available free workshops.[1] Other participants indicated that they had received information about Students Orienting Students (SOS) during orientation that was meant to help them succeed academically. Some interviewees indicated that they had initiated (via e-mail) their own "study groups" and posted resources on Blackboard, the learning management system for the university.

Some of the participants identified specific programs (e.g., STEPS) while others just heard of possible peer learning. There were others who were unaware of any such offerings at all. Some participants complained that they did not receive adequate instruction regarding writing and study habits when they were in high school, and it was the STEPS program that compensated for this deficiency. "They [high school teachers] just don't teach you how to study properly. And that's what I found the STEPS program really did."

(i) Suggestions for peer learning programs

Participants were asked if they had any final thoughts regarding peer learning or peer mentoring. Some thought that students "don't really pay attention to their surroundings," so the solution was to make good use of e-mail, social media, and speak directly to students before class time. Some thought that if students had a hard copy with pertinent information on it, they would be "more inclined to read it," while others suggested offering "some kind of reward" as an incentive to participate. Some participants suggested that the tutorial sessions needed to be more "fun" to attract students, and some others stated that more mentors were needed to respond to student needs.

Promotion and marketing were recurring themes during the focus groups and interviews. In order to provide students with a better learning experience, student service providing units and academic programs need to not only set up peer learning and peer mentoring programs, but they also need to promote them among students to benefit as many students as possible. Both digital and paper-based methods should be used for promotion because students might have a preference for one format over others. For better results in peer learning, various measures should be taken to make such learning experiences as enjoyable and meaningful as possible for students.

[1] Interviewees consistently stated that they believed that a fee was charged for STEPS workshops. This was contrary to the information found on their advertising flyer.

LIMITATIONS

The survey relied on self-reported data; thus, participants may not have answered honestly or accurately, and there is no method for verifying their answers.

Another limitation is that the survey was distributed on the Internet. Therefore, the participants who are more comfortable with technology are more likely to respond than those who are not. It is noted that there were considerably more female participants than male, which is not representative of the student population in terms of gender; at the time of data collection, the number of registered full-time undergraduate female students was only slightly higher (52.6%) than that of male students (The Office of Institutional Analysis, n.d.).

We would also like to note that while there was wide subject area representation, it could not be established whether one academic area offered a superior peer mentoring experience for its students.

CONCLUDING REMARKS

The purpose of this study was to investigate university students' understanding and experience of peer learning. By analysing data collected with an online survey and face-to-face focus groups and interviews, we found that despite the age and limited experience of the participants (undergraduate students), they expressed considerable insight related to peer learning. Their insights confirmed and reinforced perspectives found in the extant literature while clearly identifying the importance of peer learning within the academy. It seems necessary that awareness of opportunities for peer learning be raised so more students would be able to get involved. This could be done by professors who discuss such possibilities in class with their students, trying to build a community of learners where peer learning is not just encouraged but thriving.

University student service providing units, as well as academic programs, are responsible for an enriched and enhanced learning experience for students. Providing informal and formal opportunities for peer learning is deemed to be valuable. Selecting and training mentors for formal peer learning plays an important role in the success of such programs, so efforts should be made to not only offer peer learning programs to meet the needs of students of different disciplines and levels, but also to ensure the quality of such programs.

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