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Academic Help-seeking Preference of Students during Online Flexible Learning

May Marie P. TALANDRON-FELIPE[ab*], Gladys S. AYUNAR[c] & Kent Levi A. BONIFACIO[c]
[a]*Ateneo de Manila University, Quezon City, Philippines*
[b]*University of Science and Technology of Southern Philippines, Cagayan de Oro City, Philippines*
[c]*Central Mindanao University, Maramag, Philippines*
*maymarie.talandron-felipe@ustp.edu.ph

Abstract: In this paper, we present a study on academic help-seeking (AHS) behavior of freshmen students taking up Discrete Structures. We found that students perceive academic help-seeking as a beneficial and positive trait for them to see from other people's perspective, learn more, and have the chance to interact. From the students' ratings on the six attitudinal factors that motivate help-seeking behavior, x-means clustering with feature selection derived four significant features including perceived usefulness of classmates, trust on classmates, perception of instructors, and perception of the course. Students in one cluster recognized their peers as useful source of help but do not totally trust them which could be due to the fact that these freshmen students have not met their classmates face-to-face in person for the entire duration of the school year. In relation, the most preferred source of academic help are online resources such as Internet search results and video tutorials which could be explained by the Internet-driven flexible learning setup. However, the respondents are significantly more satisfied with the academic support that they have received from their instructor compared to other sources. This tells us that even in an online setup with vast resources on the Internet, the teachers play a significant role in encouraging students to seek help and in providing the academic support that the students need.

Keywords: Help-seeking, learning strategies, online flexible learning

1. Introduction

Due to the covid-19 pandemic, various policy initiatives have been launched by governments and educational institutions globally to continue the delivery of instruction and the conduct of teaching and learning activities. Large-scale efforts to utilize technology to support remote learning, distance education, and online learning have emerged quickly. However, several challenges such as the unstable online teaching-learning infrastructure, the lack of experience of the teachers in delivering online instruction, the information gap, the complex environment at home, and other factors remained a hindrance in achieving flawless migration to online learning (Murgatroyd, 2021). In this type of online setup, proactive academic help-seeking is a significant factor to the academic success of college students (Hao, Wright, Barnes, & Branch, 2016). Help-seeking behavior has been identified as an effective learning strategy and is associated with a capacity for self-regulated learning (Lee, 2007; Roll, Aleven, McLaren, & Koedinger, 2011). This is a cognitive skill involving a set of actions including realizing the need of assistance, identifying the problems, and formulating questions (Aleven, McLaren, Roll, & Koedinger, 2006; Newman, 2008). Hence, it is important for institutions to consider ways to help foster channels to scaffold students' help-seeking behavior as an indirect way to support their learning (Qayyum, 2018).

The goal of this study is three-fold: first, identify the factors that may or may not motivate students' academic help-seeking behavior; second, determine the sources of support that students prefer; and third, determine students' level of satisfaction of the support or assistance that they received. Given the abovementioned objectives, the paper aims to answer the following questions:

1. What factors may or may not encourage the students to seek academic help?
2. Where or from whom do students prefer to get academic help?
3. How do students perceive the academic help they receive from various sources?

2. Online Flexible Learning Implementation

In the period of campus closure due to Covid-19, online learning, either synchronous or asynchronous, has been adopted by universities (Huang et al., 2020). The implementation is considered flexible because it can take the form of pure online in which the curriculum and the teaching and learning activities are implemented online without face-to-face sessions between the teachers and the students, or a hybrid in which the teacher meets the students online and offline (face-to-face) in the campus following safety protocols, depending on the needs and requirement of the course. Institutions had to develop learning continuity programs and support initiatives for students who lack the resources to participate in the online flexible learning program such as those who do not have access to Internet connection and the appropriate devices (Talandron-Felipe, 2020).

This strategy has allowed the continuation of education delivery amidst the pandemic. However, it also came with challenges and difficulties. As such, teachers have to deliver lectures via the Internet which caused issues for some teachers who are not familiar with technology and the methods of integrating it into education. In fact, in some places, some schools are still adopting the old-fashioned model of delivering lectures for passive audiences, thus failing to harness the educational possibilities afforded by emerging technologies (Huang et al., 2020). Aside from the lack of technological capability, the conversion of the curriculum to fit an online setup had to be done.

Apart from these challenges that the teachers faced in the transition to online flexible learning, the students also had their own struggles. The youth have been considered digital natives (Prensky, 2001) but it is not safe to assume that they know everything about technology more so expect them to adapt right away to a technology-led learning setup. It has been reported that a significant percentage of students especially those from rural areas do not have access to computers and the Internet and as such rely on the technological resources available in the campus (Talandron-Felipe, 2019, 2020). In comparison to traditional face-to-face classes, when students have difficulty understanding the topics, they have the opportunity to interact immediately with the teachers and classmates to ask questions. On the other hand, with the asynchronous mode in flexible learning, the immediacy of help is not guaranteed.

Indeed, the integration of technology in education has changed pedagogical strategies of the teachers and the learning styles of students and the transitioning to online learning at scale has been a difficult and highly complex undertaking for most educational institutions and their stakeholders (Ali, 2020).

3. Academic Help-Seeking Behavior

Academic help-seeking (AHS) behavior encompasses looking for support from peers, teachers, and other forms of sources to help the students achieve good results in an academic context. This trait has been considered a form of social strategy that requires interaction with other individuals. AHS as a self-regulated learning strategy is regarded as a significant factor in learning because it can impact performance and achievement in a short period of time (Martín-Arbós, Castarlenas, & Dueñas, 2021; Won, Hensley, & Wolters, 2021). As opposed to being linked to dependency, seeking help when necessary is now considered an important self-regulated learning (SRL) strategy (Karabenick & Gonida, 2017). Self-efficacy for self-regulated learning was also found as a positive predictor of help-seeking strategies (Won et al., 2021).

The sources for academic help-seeking varies depending on the student's preference but the most common ones are learning peers or classmates, teachers, friends who might have the same experience or who can relate to the problem or topic, parents, tutors, and of course resources available on the Internet (Qayyum, 2018).

Prior work (Aleven, McLaughlin, Glenn, & Koedinger, 2016) stated that a student's academic help-seeking behavior could be affected by student-related factors and/or system-related factors. The student-related factors may include age, gender, the student's self-esteem, meta-cognitive skills, prior knowledge of the subject domain, and the learning environment (Qayyum, 2018). The system related factors are attributes of the help-seeking environment which may include the course goals, the composition and clarity of the feedback given to the students, and/or the level of interactivity in the

learning environment whether it is a traditional classroom or a computer-based course management system (Aleven et al., 2016).

Social aspect indeed contributes significantly to academic help-seeking behavior as it has been reported that sense of belongingness is considered a significant predictor of the use of adaptive help-seeking strategies, even when accounting for students' motivation. Results also supported the assumption that students' perceptions of their social contexts affect if and how they seek help with their learning (Won et al., 2021).

Moreover, (Qayyum, 2018) found six latent dimensions of students' attitudes that may encourage or discourage them from seeking help such as the usefulness of help from peers, their perception of how helpful teachers are, their trust relationship with peers, sense of independence, perception of the course or subject domain, and their perceived sense of threat. In an online flexible learning setting, interaction of the students with peers and teachers is limited to virtual meetings and chats and so their perceptions about them may be different as opposed to a traditional face-to-face classroom environment.

4. Data Collection

An online survey was conducted to ask the students the appropriate questions that address the set objectives and research questions (contextualized and adapted from Qayyum, 2018). The self-report questionnaire includes questions about their perception of the difficulty of the course Discrete Structures and of their performance; their satisfaction of the overall support that they received throughout the course; their perception about academic help-seeking behavior; whether they sought help, when, what are the triggers, and frequency; their preferred source of help; and agreement rating with various help-seeking behavior factors that include teachers and peers usefulness, perceived threat of asking for help; sense of belongingness, trust relationship with peers, and perceived self-reliance by finding answers from learning materials on their own.

The respondents of the survey were freshmen students of the Bachelor of Science in Information Technology program of a state university in the province of Bukidnon, Philippines. Their participation was on a voluntary basis and the students were informed that it shall not affect their academic standing. Informed consent forms and data privacy statements were provided for which they had agreed with before proceeding with the survey. All responses were anonymized during analysis and no personal information was included in this paper.

The survey was conducted using Google Forms and convenience sampling among the target group was considered as it was expected that not all students would have access to the Internet during the survey.

5. Results and Discussion

A total of ninety three (93) students responded to the survey and 99% believe that seeking academic help is a positive behavior for a student as they pointed out that it allows them to see a different perspective, learn more, and interact with others:

> *"Well, a person's growth not only relies on his/her own understanding and experiences, but also from other people's experiences and perspectives. The more we seek help and attain experience and knowledge from others, the further the development of our personal growth."*
>
> *"It would be a positive behavior to seek help, because this shows that the student wants to learn more about the subject. Meaning with this positive behavior this will give a good result to student's academic performance."*
>
> *"Seeking academic help is a positive behavior because for me, especially if I don't understand the topic, it is one of a way for me to understand, to also learn interaction with others, it also helps me grow as an individual who wants to learn things by asking and seeking help."*

To answer the first research question, we looked at the 6 attitudinal factors that motivate students to seek academic help (Qayyum, 2018): 1) perception of the usefulness of peers or classmates, 2) trust on peers, 3) perception of the instructors or teachers, 4) perception of the course, 5) sense of independence to search for the answers on his/her own, and 6) perceived threat against asking questions or seeking help.

In contextualizing the first factor for this study, the questionnaire had 7 items about the students' perception of their classmates and the students were asked to give their level of agreement (1 – strongly disagree to 5 – strongly agree) in terms of their classmates' usefulness to help them with the course, to respond quickly to questions, to help them understand the course content better, to help them save time studying, to keep them motivated, to provide useful feedback, and to help them feel that they belong. The average rating for each of these items are consistent to be above 3 (neutral) but less than 4 (agree) as shown in Table 1, which indicates that they somehow agree on the usefulness of peers or classmates academically.

Table 1. *Perception of the Usefulness of Peers or Classmates*

Items	**% responses per rating**					**Average Rating**
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
to help them with the course	3%	8%	40%	35%	14%	3.49
to respond quickly to questions	3%	15%	48%	31%	2%	3.14
to help them understand the course content better	1%	12%	37%	31%	19%	3.56
to help them save time studying	3%	11%	43%	31%	12%	3.38
to keep them motivated	4%	10%	38%	30%	18%	3.48
to provide useful feedback	3%	11%	38%	33%	15%	3.46
to help them feel that they belong	3%	10%	38%	39%	11%	3.44

Similarly, for the second factor, a total of 46 students (49%) agreed and strongly agreed that their classmates can be trusted while 33 (35%) were just neutral about it (M = 3.41). Based on these ratings, it can be inferred that the students have a positive attitude towards their classmates in terms of their usefulness for academic help and in being trustworthy.

For the third factor, students' perception of the instructors, results showed that a total of 77 (83%) rated 'agree' and 'strongly agree' in terms of their instructor's availability to answer questions about the course (M = 4.23); 84 students (90%) gave the same rating on how approachable they perceived the instructor (M = 4.45); and 54 (58%) agreed and strongly agreed that they will not hesitate to ask the instructor for help (M = 3.62). This also shows the positive perception of the students towards their teacher when it comes to academic help. As for their perception of the course, the fourth factor, they were asked to rate the level of difficulty on a five-point Likert scale (1 - very easy to 5 - very difficult). Thirty eight (38) of them (41%) considered the course manageable while thirty four (34) or 37% thought the course was difficult and very difficult (M=3.18).

The student's sense of independence is the fifth factor and as shown by prior work (Qayyum, 2018), students who were more independent were more likely to address their academic problems on their own rather than seek help. Although all of the respondents sought help at least once during the semester, some students did more than the others. With a scale of 1 (lowest) to 5 (highest), they rated their sense of independence. A total of 37 respondents (40%) rated 3 and below, and said they sought help after every topic discussion and every time there was an assessment or task. On the other hand, a total of 56 (60%) rated 4 and 5 for sense of independence and said they only sought help when they don't understand a certain topic or only when they get a low score in exams. The sixth factor refers to the sense of threat against seeking academic help (i.e. getting embarrassed). A total of 46 respondents (49%) 'agree' and 'strongly agree' that they fear to be regarded as unintelligent so they try to avoid seeking help as much as possible while 33 (35%) gave a neutral rating (M=3.40).

We also looked at the six attitudinal factors with consideration to the students' performance level. The students were grouped to three levels based on how they performed in the course: high

performing students, average students, and low performing students. As shown in Table 2, there is not much significant difference between the groups except for the third and fourth factors. For the third factor, high performing students trust their peers significantly more (M=3.55, SD=0.92) than their low performing students do (M=2.63, SD=0.70). For the fourth factor, high performing students gave significantly higher ratings (M=4.31, SD=0.54) in terms of the perceived helpfulness and availability of the teachers compared to the ratings of low performing students (M=3.54, SD=0.82).

Table 2. *Comparison of Attitudinal Factors among Different Levels of Performance*

Attitudinal Factors	Tukey HSD	High vs Average	High vs Low	Average vs Low
perception of the usefulness of peers or classmates	Q statistic	2.52	1.26	2.80
	p-value	0.18	0.64	0.12
trust on peers	Q statistic	0.78	3.46	3.10
	p-value	0.83	**0.04**	0.08
perception of the instructors or teachers	Q statistic	2.86	4.47	2.91
	p-value	0.11	**0.01**	0.11
perception of the course	Q statistic	0.89	2.22	1.75
	p-value	0.78	0.27	0.43
sense of independence to search for answers	Q statistic	1.15	1.32	2.04
	p-value	0.68	0.61	0.32
perceived threat against asking questions or seeking help	Q statistic	0.33	1.92	2.18
	p-value	0.90	0.37	0.28

We also compared the attitudinal factors between genders and found that there is no significant difference in any of the factors between students who identified themselves as female and male. This is somehow contrary to findings in the past decades where results indicated that male students are less likely to seek help compared to female students (Galdas, Cheater, & Marshall, 2005; Morgan & Robinson, 2003).

Further, we applied x-means clustering with feature selection to the data to see possible distinct groups among the students based on their academic help-seeking attitudinal factors. Result showed two clusters with four significant features: peer usefulness, perception of instructor, trust on peers, and perception of the course as shown in *Figure 1*.

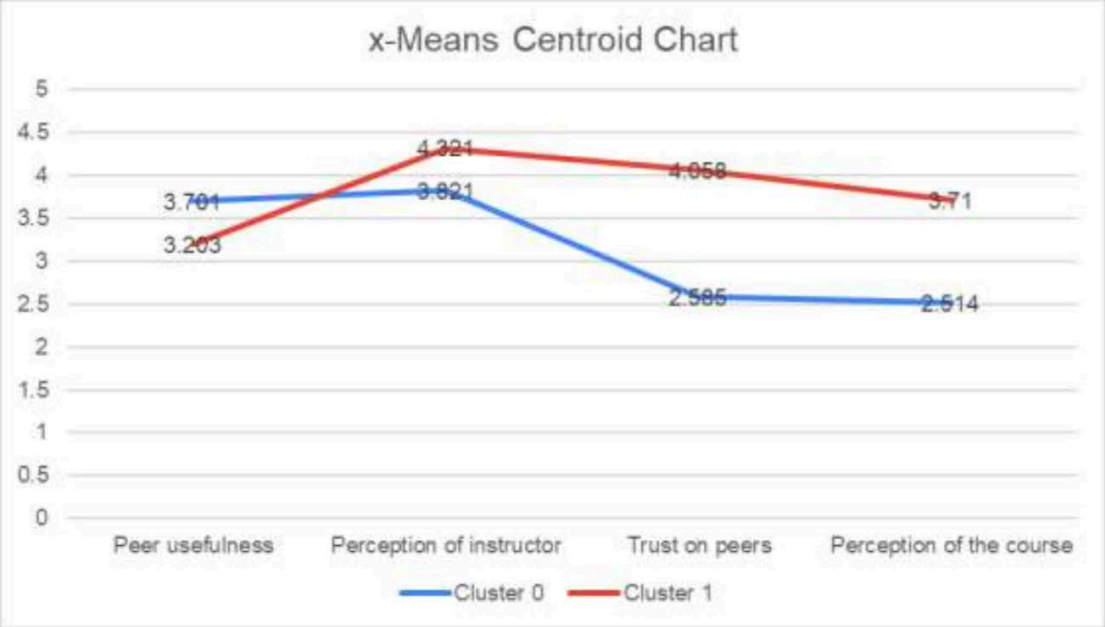
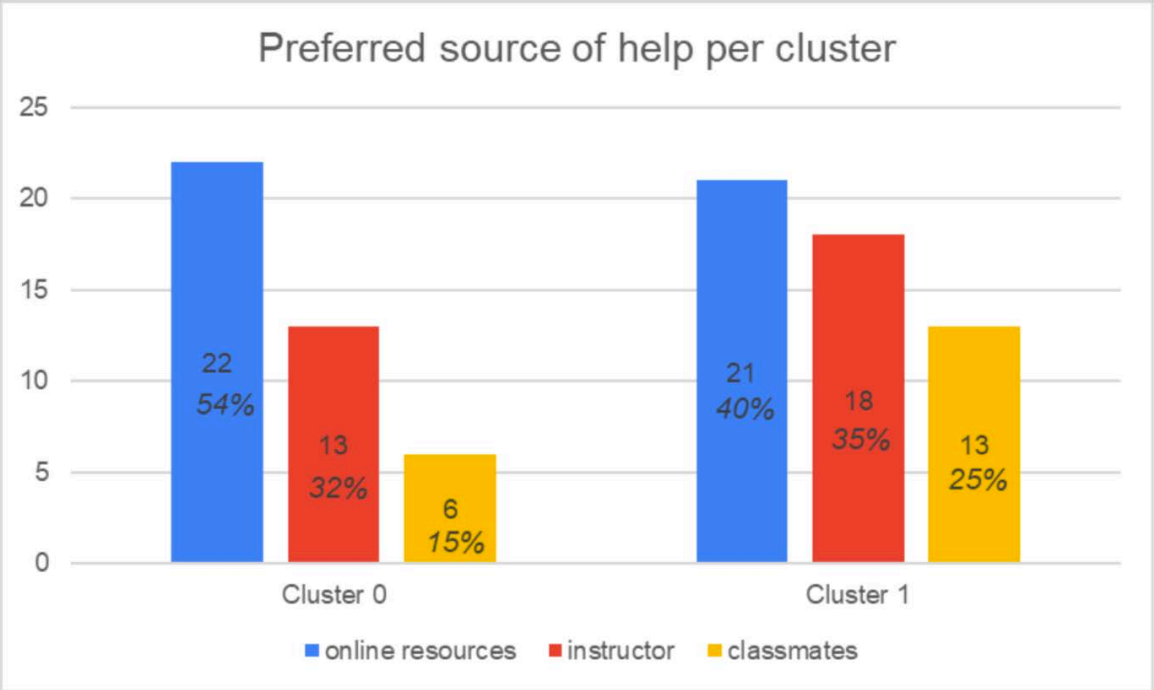


Figure 1. x-Means Centroid Chart

It is interesting to note that students in cluster 0 agree that peers can be useful in helping them academically but leaning towards disagree to neutral when it comes to trusting them. This could be a result of the limited interaction since they were freshmen students at the time and they have not met face-to-face in person for the entire duration of the school year. They also perceive the course to be easy and manageable compared to those in cluster 1 who perceive the course to be difficult.

To further understand this, we looked at the second research question which refers to the students' preference for their source of help. Forty-three (43) respondents (46.24%) said that they prefer to seek help from online resources (i.e. supplemental learning materials available in the learning management system, articles and other search results from the Internet, and video tutorials), 31 (33.33%) prefer to seek help from their instructor, and 19 (20.43%) chose their classmates as their preferred source of academic help. We cross-referenced the respondents' preference to the clusters and based on the proportion of each source to the cluster's population, we can infer that there is not much difference although more students in cluster 0 prefer to use online resources on their own compared to those in cluster 1 and more students in cluster 1 prefer to ask help from classmates than those in cluster 0 as students in cluster 1 have higher trust for their peers (see Figure 2).

The preference to online resources could also be explained by the online flexible learning setup. Interaction with classmates and the instructor is limited to virtual meetings and once the session ends, the students are mostly left on their own in front of their computers as opposed to a traditional classroom setting where students are physically with their classmates almost throughout the day which could promote more conversations about their course.



**Percentage was computed based on the cluster population*

Figure 2. Preferred source of help per cluster

Although the respondents have their preferred source of help, survey results showed that at least once during the semester, they were able to seek help from all sources. They were asked to rate their level of satisfaction from these sources in a five-point Likert scale (1-very unsatisfied to 5-very satisfied). Help from the instructor obtained a mean of 4.52 followed by online resources (M=4.29) then classmates (M=3.85). To compare the ratings for each type of source, we used analysis of variance with post-hoc Tukey HSD (Honestly Significant Difference) for multiple comparisons. The p-value corresponding to the F-statistic of one-way ANOVA is <0.001 suggesting that one or more treatments are significantly different. Tukey HSD results showed that there is a significant difference between all pairs as shown in Table 3.

Table 3. *Tukey HSD Results in the Comparison of Satisfaction Ratings among Academic Help Sources*

Treatments pair	Tukey HSD Q statistic	Tukey HSD p-value	Tukey HSD inference
Online resources vs Instructor	3.3565	0.048	$p<0.05$
Online resources vs Classmates	6.5485	0.002	$p<0.01$
Instructor vs Classmates	9.905	0.002	$p<0.01$

Based on this, we can infer that although majority of the students' preferred online resources, the instructor still plays a significant role in providing academic assistance because students believe that help from the instructor is more satisfying compared to other sources even in an online flexible learning setup even if their interaction with the teacher is limited to virtual meetings. In relation, Qayyum (2018) said that 'perceived threat' deters students from approaching instructors for help even via online methods. Although our clustering with feature selection did not include perceived threat as a significant factor in seeking help, this could be a reminder to teachers of how important their role is in providing academic help.

6. Conclusion, Recommendation, and Future Work

This study investigated the help-seeking behavior of freshmen students taking a course on Discrete Structures. Results showed that student perceive academic help-seeking as a beneficial and positive trait that allows them to see from other people's perspective, learn and understand more, and have the chance to interact with others. From the students' ratings on the six attitudinal factors adopted from Qayyum, (2018) that may or may not motivate help-seeking behavior among students, it was found that: 1) students somehow agree on the usefulness of peers or classmates academically; 2) students have a positive attitude towards their classmates in terms of their usefulness for academic help and in being trustworthy; 3) there is a positive perception of the students towards their teacher when it comes to academic help; 4) a third of the respondents considered the course to be manageable while another third thought it was difficult and very difficult; 5) majority said they only sought help when they don't understand a certain topic or only when they get a low score in exams; and 6) half of the respondents said they fear to be regarded as unintelligent so they try to avoid seeking help. In considering the performance level of students, a significant difference was found between high performing students and low performing students in terms of trust on peers and perceived helpfulness and availability of teachers.

Further, x.-means clustering with feature selection was used and derived four significant features including perceived usefulness of classmates, trust on peers, perception of instructors, and perception of the course. Students in cluster 0 recognized their peers as useful source of help but do not totally trust them. This could be a result of the online setup and the fact that these freshmen students have not met their classmates face-to-face in person for the entire duration of the school year. In relation, the most preferred source of academic help are online resources such as Internet search results and video tutorials which could be explained by the Internet-driven flexible learning setup. However, the respondents are significantly more satisfied with the academic support that they get from their instructor compared to other sources. This tells us that even in an online setup with vast resources on the Internet, the teachers still play a significant role in guiding and providing academic help to the students when needed. Based on these findings, it can be recommended that academic policies for flexible learning should emphasize on establishing communication channels between the students and the teachers. It would also be helpful to provide options within the LMS from where the students could seek academic help based on their preference.

To enrich the study, communication opportunities and transactional distance between the students and their peers and teachers could be investigated and how these factors could impact help-seeking behavior and student's academic performance.

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