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ASSIGNMENT TITLE: A Quantitative Analysis of the Relationship Between Self-Efficacy and Help-Seeking, and the Effect of the Level of Study on Help-Seeking

A Quantitative Analysis of the Relationship Between Self-Efficacy and Help-Seeking, and the Effect of the Level of Study on Help-Seeking

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Abstract

Help-seeking behavior and self-efficacy play significant roles in educational settings. To date, seldom research has investigated the help-seeking behavior between undergraduate and postgraduate students. Additionally, Zimmerman (1989) addressed a bidirectional model between help-seeking and self-efficacy. Therefore, this report aimed to examine the help-seeking behavior between undergraduate and postgraduate students and the relationship between help-seeking behavior and self-efficacy. This report used Motivated Strategies for Learning Questionnaire (MSLQ) to assess help-seeking and self-efficacy score. The Welch two samples t-test and Spearman correlation were used in the analysis. The results reported significance difference in the help-seeking score between undergraduates and postgraduates and that no significant correlation between help-seeking

behavior and self-efficacy was found. The findings suggested that postgraduate have more help-seeking behaviors than undergraduate students, and this finding has no significant correlation with self-efficacy.

1. Introduction

1.1 Literature review and research question

Our environment change rapidly, learning is one of the ways to help humans adapt to new situation. Through ever-improving technology, humans need efficient strategies of learning to deal with the explosion of knowledge and information. In other words, helping students to develop self-regulate abilities has been one of the main purposes of our education.

Zimmerman (2000) claimed that self-regulation is the self-directed process through which learners transform their mental abilities into academic skills; He defined self-regulation as the ability to control one's own thoughts, feelings, and behaviours in order to achieve one's objectives. One of the domains of self-regulation is Self-Regulate Learning (SRL), which decribes how learners try to regulate and control their cognition, motivation, and behavior to achieve their goals of learning. (Pintrich, 2000) Zimmerman and Campillo (2003)

showed that the SRL model is a cyclical model composed by three phases, namely forethought, performance and self-reflection. The forethought phase includes task analysis (e.g., goal setting) and self-motivation beliefs (e.g., self-efficacy); the performance phase includes self-control (e.g., help-seeking) and self-observation. (e.g., meta-cognitive monitoring); the self-reflection phase includes self-judgement (e.g., self-evaluation) and self-reaction (e.g., self-satisfaction). Furthermore, many studies have supported that self-efficacy of self-motivation belief and help-seeking behaviors of self-control abilities were closely related to academic performance. (Bandura, 1977; Karabenick & Sharma, 1994)

Help-seeking behavior and self-efficacy are discussed in different fields, e.g., mental health and education; This report focuses on help-seeking and self-efficacy in academic context. Karabenick and Berger (2013) defined academic help-seeking as the behavior that students seek help from peers and instructors when facing difficulties in learning to achieve good results. When facing ambiguity or difficulty in their academic work, students can learn more effectively by seeking help from peers, teachers, and others. (Karabenick & Sharma, 1994; Newman 1994; Gall, 1985) Academic self-efficacy refers to one’s belief in their own capabilities to organize different action to attain the

educational goal. (Schunk, 1991; Bandura, 1997) There are reciprocal relationships between academic self-efficacy and student's learning and engagement in three aspects: behavioral engagement, cognitive engagement, and motivational engagement. (Linnenbrink & Pintrich, 2003) In conclusion, students with help-seeking abilities and self-efficacy have positive effects on learning and engagement, directly affecting academic performance.

Several studies have discussed the influences of academic help-seeking and self-efficacy on academic performance. Karabenick (1998) indicated that academic help-seeking behavior are positively associated to academic outcomes. Additionally, the same results have been reproduced in different context, including nursing students and student pharmacists. (Lee, 2007; Payakachat et al., 2013) Bandura (1997) claimed that students can enhance their academic performance by growing their self-efficacy. Many studies have reported that academic self-efficacy is positive related to academic outcomes. (Robbins et al., 2004; Richardson et al., 2012; Honicke and Broadbent, 2016) Since both academic help-seeking and self-efficacy were linked to academic performance, the relationship between academic help-seeking and self-efficacy is worth discussed.

The relationship between academic help-seeking and self-efficacy have been discussed in several studies. Zimmerman (1989) highlighted that there was a bidirectional relationship between self-regulate learning (a broad concept of help-seeking) and self- efficacy. Students who have higher self-efficacy are more willing to use self-regulatory strategies (Zimmerman, 1995; Zimmerman & Martinez-Pons, 1992), whereas students who have learned self-regulatory skills may have a higher reported academic self-efficacy. (Schunk, 1994) Ryan and Hicks (1997) claimed that students avoid seeking help since they regard help-seeking behaviour as a threat to their self-worth. Karabenick and Knapp (1991) addressed that students, especially those who are not confident with their abilities, treat help-seeking as a symbol of admission failure; students resist seeking help because they considered that help-seeking brings bad impression. Previous studies have shown that students with low academic self-efficacy were more unlikely to seek help since they did not want to be seen as “stupid”. (Ryan et al., 1998; Ryan & Pintrich, 1997) On the other hand, students who have higher academic self-efficacy and better academic performances are more likely to seek help when they meet difficulties in learning. (Karabenick & Knapp, 1991; Ryan & Pintrich, 1997) This report aims at exploring the relationship between academic help-seeking and self-efficacy.

Academic help-seeking behaviour have been discussed in many studies, including focus on different context or compared different groups. Most of studies focus on the context in adolescents. (Kiefer & Shim, 2016; Schenke et al., 2015; Parker et al., 2019; Smalley & Hopkins, 2020) Furthermore, academic help-seeking in online context have been discussed. (Cheng et al., 2013; Lee et al., 2014) On the other hand, the differences of academic help-seeking between groups have been investigated in several categories, e.g., gender, English as an Additional Language students. (Roussel et al., 2011; Butler & Shibaz, 2014; Lee, 2018) However, there was a gap on tertiary context and there was not enough research discussing academic help-seeking between postgraduate students and undergraduate students. According to previous findings, students who are less confident and have low academic performance are more unlikely to seek help. (Karabenick & Knapp, 1991; Ryan et al., 1998; Ryan & Pintrich, 1997) Moreover, positive relationship between help-seeking and self-efficacy was shown in previous studies. (Karabenick & Knapp, 1991; Ryan & Pintrich, 1997) This report compares undergraduates with postgraduate students, who mostly are more confident with their academic works and have better academic performances than undergraduate students, and examines the

relationship between academic help-seeking and self-efficacy. These leads to the following research questions:

RQ1: Are postgraduate students more likely to engage in help-seeking behaviour than undergraduate students?

RQ2: How is help-seeking behavior related to self-efficacy?

1.2 The hypotheses of present study

Specifically, the report tests the two hypotheses:

First, help-seeking scores may have differences between postgraduate and undergraduate students (*Hypothesis 1*). This hypothesis is listed as the following:

$$H0: \mu_{postgraguate} = \mu_{undergraduate}$$

$$H1: \mu_{postgrduate} \neq \mu_{undergraduate}$$

$\mu_{postgrduate}$: The mean of help seeking score of postgraduate students

$\mu_{undergraduate}$: The mean of help seeking score of undergraduate students

Second, no direct hypothesis was formulated for how help-seeking behavior may relate to self-efficacy (*Hypothesis 2*).

2. Methods

2.1. Participants

A sample of 2,391 students from University of Glasgow majoring in about 153 different programs were recruited for this study. 27% of the participants were from psychology major, which account for the biggest part. Based on the demographics data, gender was split into three categories, namely male, female, and non-binary. About 67% of students were female, 30% were male, and 3% were non-binary. The ages of participants ranged from 15 to 89 (M = 21.48; SD = 6.43). The data used for present study used opportunity sampling of an online survey platform, Experimentum (DeBruine et al., 2020). 86% of the participants were undergraduates and 15% were postgraduates. Since only

self-efficacy and help-seeking were being tested for the purpose of this study, the irrelevant variables in MSLQ will be excluded. After omitting 185 cases due to incomplete answers of the parts “help-seeking” and “self-efficacy” in MSLQ and missing information of the study level question in demographic, this report has final analytic samples of 2,206 university students, where 1,894 participants were undergraduate students, and 312 participants were postgraduate students.

2.2. Materials

This questionnaire is divided into two parts, namely Demographic questionnaire and Motivated Strategies for Learning Questionnaire (MSLQ). The details of these two parts are listed below:

2.2.1 Demographic questionnaire

Participants were asked to answer questions of seven categories, namely “age”, “gender”, “native or non-native speaker”, “paid or no employment whilst studying”, “living at home or in halls”, “level of study”, “mature or traditional student.”

2.2.2 Help-seeking and Self-efficacy (MSLQ; Pintrich et. al., 1991)

Help-seeking and Self-efficacy score were measured using the MSLQ. Participants responded to 80 items on 7-point Likert scale ranging from *"Not at all true of me"* to *"Very true of me."* Help seeking scale consists of 4 items and self-efficacy scale consists of 8 items. The highest possible scores for both self-efficacy and help seeking are graded as a "7" whilst the lowest possible is a "1." Examples of items of help seeking scale and self-efficacy scale are "Even if I have trouble learning the material in this class, I try to do the work on my own, without help from anyone." and "I believe I will receive an excellent grade in this class.", respectively.

2.3 Procedure

Data collection took place in 2021 at University of Glasgow. Participants complete the survey on the online platform, Experimentum (DeBruine et al., 2020). The first information completed by participants was the demographics, and then participants completed Motivated Strategies for Learning Questionnaire (MSLQ). The sequences of the questions are randomised.

2.4 Design and data analysis

In this report, non-directional hypothesis was used. For *Hypothesis 1*, we had two group variables, namely undergraduates and postgraduates. This report compared undergraduates and postgraduates in relation to the dependent variable help-seeking.

For *Hypothesis 2*, the correlation between help seeking behaviour and self-efficacy was examined. Since this report compared the results between two groups and assumed that all of the participants completed the survey independently, between-subjects design was used. To explore data, this report conducted two sample t-test and Spearman's rho. In the following analysis, this report used the average score of 4 items of help-seeking and the average score of 8 items of self-efficacy. In this way, the ordinal score would be turned into continuous data. For the first hypothesis, this report conducted a between-subjects design to test the relationship between help seeking behaviours and the level of study of participants (i.e., undergraduates versus postgraduates.). The independent-samples t-test is used since all of

the data of corresponds to unique participants. To be more specific, Welch's two sample t-test was used. Although this report used F test of equality of variances and found that there were no significant differences in variances between the groups, this report still used Welch's two sample t-test since the variances are not equal and the False Positive Error rate is more stable in Welch's than it is in the Student's t-test. (Delacre et al., 2017) For the second hypothesis, the relationship between help seeking and self-efficacy across all participants was examined. Although the difference between each point of the answer is not equal between different people, the ordinal data was still treated as interval. Later, qq-plots was used to test for normality and a scatterplot was used to test for linearity and homoscedasticity. If the data meets these assumptions, Pearson's r would be suitable, while Spearman's rho would be suitable otherwise. In this study, Spearman's rho was adopted.

3. Results

In pre-registration, there were no significant differences in Welch to sample t-test of first hypothesis. However, in this study, significant result was found.

3.1. Assumption test

This report assumed that the data is normality. After using qq-plots test (see Appendix B.) to test the normality, it can be found that the distribution didn't meet the assumption. However, this report will continue to use the Welch t-test since the sample size is large. In addition to testing normality, scatterplot (see Appendix C) was used to test for linearity and homoscedasticity. Also, Spearman's rho was used, since the data didn't meet the assumption of linearity and homoscedasticity. Both results of assumptions were in line with pre-registration (see Appendix A.)

3.2. Descriptive statistic

Descriptive statistics for all variables are reported in Table 1.

Table 1.

Descriptive statistics for the help-seeking score of undergraduates and postgraduates

Variable	Mean	Median	SD	Min	Max	Skew
Undergraduates	3.91	4.00	1.29	1	7	-.23
Postgraduates	4.10	4.25	1.36	1	7	-.18

3.3. Inferential statistic

3.3.1. T-test

A Welch t-test found that postgraduate participants (M= 4.10, SD = 1.36) had significantly higher help-seeking scores than undergraduate participants (M = 3.91, SD = 1.29, t (423.87) = 2.29, p = .02, d = .14, see Table 1 and Figure 1). As shown in the violin-boxplots of the help-seeking score in the undergraduates and postgraduates (Fig. 1.), the mean of postgraduates was higher than undergraduates, meaning postgraduate students have more help-seeking behavior. Additionally, the data presented to be negatively skew, since both means of postgraduates and undergraduates were slightly lower than the medians in their groups. The range of help-seeking score of postgraduates was wider than undergraduates and there was more central tendency in undergraduates than postgraduates. These suggested that postgraduates

have more diversity in help-seeking behavior and undergraduates have more similar help-seeking score.

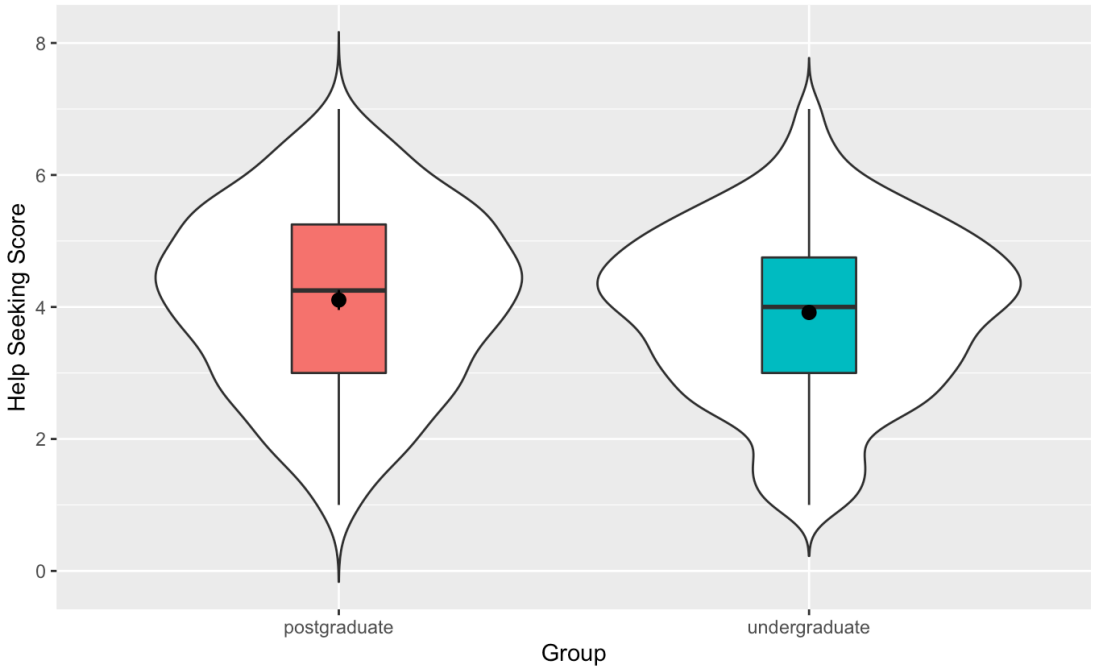

Fig. 1. Violin-boxplots of help-seeking score in postgraduates and undergraduates.

3.3.2. Correlation

It is found that no significant correlation between help-seeking and self-efficacy. (*rho* (2204) = .15, *p* = 9.90e-13, see Figure 2). From the scatterplot (Fig. 2.), there is no specific pattern between help-seeking and self-efficacy either.

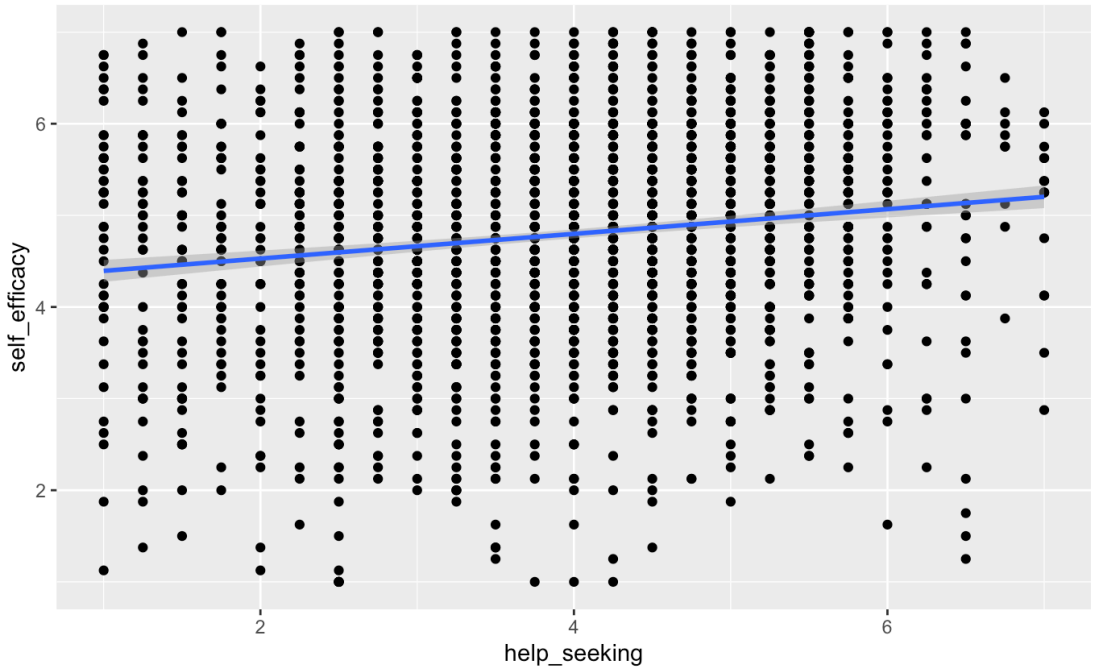

Fig. 2. The scatter plot of the correlation between help-seeking and self-efficacy

3.4 Statements of the results of hypothesis

The hypothesis of this report is listed below:

$H0: \mu_{postgraguate} = \mu_{undergraduate}$

$H1: \mu_{postgrduate} \neq \mu_{undergraduate}$

$\mu_{postgrduate}$: The mean of help seeking score of postgraduates

$\mu_{undergraduate}$: The mean of help seeking score of undergraduates

This report rejected H0. There were significant differences between group “undergraduates” and “postgraduates.” There was no significant relation between help seeking behaviour and self-efficacy.

4. Discussion

4.1 General Discussion

In this report, we tested the differences of academic help-seeking behaviour between undergraduate and postgraduate students. Specifically, we examined the relationship between academic help-seeking behaviour and self-efficacy. In line with *Hypothesis 1*, there were a significant difference between postgraduate and undergraduate group, while the *Hypothesis 2* were not met. The postgraduate students had significant higher academic help-seeking score than undergraduate students, and the help-seeking behaviour did not affect self-efficacy. These results indicated that postgraduate students had more help seeking behaviours than undergraduate students, while the help seeking behaviour were not related to self-efficacy.

Previous studies have investigated the academic help-seeking behaviour in different types of learners, and the results showed that the levels of

confidence and achievement were related to academic help-seeking behaviour. (Karabenick & Knapp, 1991; Ryan et al., 1998; Ryan & Pintrich, 1997) This report stated that undergraduate and postgraduate students have different levels of confidence and achievement in academic context, and there were differences in academic help-seeking behaviours between undergraduates and postgraduates. In this report, the result of *Hypothesis 1* is consistent with previous studies. This report suggests that there are two reasons that might explained why postgraduate students have higher help-seeking score. Firstly, the academic works in postgraduate level are higher than that in undergraduate, which required better academic abilities. Secondly, most postgraduate students might be more confident when they study their postgraduate degree since they may have more life experience, be more mature mentally, or have had a good academic performance in their bachelor degree.

On the other hand, previous studies showed that the academic self-efficacy was positively related to academic help-seeking. (Karabenick & Knapp, 1991; Ryan & Pintrich, 1997) However, the result of *Hypothesis 2* is inconsistent with previous research and what we expected. In other words, there was no relationship between academic help-seeking and self-efficacy. This result conflicts with previous theory of Zimmerman (1989). Zimmerman (1989) stated

that there was a bidirectional relationship between self-regulate abilities and self-efficacy, while this report shows that there is no relationship between help-seeking and self-efficacy. This result might relate to the wide usage of the Internet. The context of Zimmerman (1989) is almost thirty years ago. Seeking help from peers and instructors is the main way to face academic difficulties. However, students nowadays have different learning tools because of the Internet, and they do not have the same needs for academic help-seeking as before. When encountering academic difficulties, most of the students in present context will do self-learning and research by themselves on the Internet first instead of seeking help from tutor and peers. Learners with high self-efficacy can search the answer on the Internet without seeking help from others nowadays. Since the 4 items of help-seeking in MSLQ questionnaire focus on seeking help from people, e.g., peers and tutors, help-seeking through the Internet were not considered in the questionnaire.

4.2 Limitation and future study

This report has limitations in two aspects: 1) sample characteristic and 2) questionnaire. Firstly, there were 655 psychology students in 2,391 participants from the UK. To better generalize the findings in this report, the future study

can include participants from different culture context and majors. Secondly, since the question of course in demographic questionnaires can be answered freely, there is the possibility that students didn't answer correctly may lead to incorrect analysis. Additionally, there were only four items in the specific scale of MSLQ for testing academic help-seeking. In future studies, the questionnaire which contains more items and only focuses on testing help-seeking behaviour can be considered. Furthermore, MSLQ questionnaire used 7-point Likert scale, in which the differences between each point are not actually same, while in this report it is treated as interval scale. Moreover, since we used the average of items of help-seeking and self-efficacy, the correlation between each item of self-efficacy and help-seeking can be examined to gain more understanding.

4.3 Conclusion

This report examined academic help-seeking behaviour between undergraduate and postgraduate students, and the relationship between academic help-seeking and self-efficacy in tertiary context.

With these limitations in mind, this report has two key findings. First, postgraduate compared to undergraduate students are more likely to engage

in academic help-seeking behavior. Second, there was no correlation between academic help-seeking behaviors and self-efficacy.

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"All data wrangling, visualisation and analysis was conducted using the R programming environment (Version 4.0.2, R Core Team, 2020) using the tidyverse library (Version 1.3.0) and attached packages (Wickham et al., 2019)."

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Appendix A. Pre-registration

1. What are the main hypotheses being tested in this study? Provide a concise rationale.

Is there a difference in help-seeking scores between undergraduate and postgraduate students? Is there a relationship between self-efficacy and help-seeking scores across all participants? Academic self efficacy refers to our individual sense or belief in our abilities to achieve our educational goals (Schunk, 1991; Elias & Macdonald, 2007). Academic help seeking relates to how students may attempt to effectively overcome any challenges faced within their studies (Gall, 1985). The literature suggests that our variables combine to form an integrated productive tool employed by more successful learners in order to function proactively within the learning process, and are therefore related positively (Karabenick & Sharma, 1994; Newman, 1990, 1994, 2002; Ryan et al., 2001). Oppositely however, proficient use of help seeking strategies have also been inversely linked with higher levels of student self efficacy (Williams & Takaku, 2011) thus offering discrepancy within the research. Since the literature is conflicting, we aim to take an

exploratory stance, but predict that self efficacy and help seeking behaviours will be positively correlated, whilst postgraduate students will score higher on help seeking behaviours than undergraduates.

2. Describe the key variables specifying how they will be measured, how many levels they have and how participants will be assigned (if relevant).

Pintrich et al. (1991) created the Motivated Strategies for Learning Questionnaire (MSLQ) in order to assess the motivations and learning strategies of college students using a self-report method. Self-efficacy is tested within the motivation scales whilst help-seeking behaviours are grouped within the 'learning strategy scales'. Within the questionnaire, students will grade themselves on a 7-point Likert scale in accordance with how much they agree with different statements ranging from "not at all true of me" to "very true of me." There will be eight questions to measure self-efficacy and four for help seeking. In order to calculate a complete score for self-efficacy, a mean will be taken from the eight statements participants grade themselves upon, whilst the same method will be applied to the four statements graded for help-seeking. The highest possible scores for both self-efficacy and help seeking are graded as a "7" whilst the lowest possible is a "1". When considering the demographic of participants, questions relating to study level of the participant will be asked. Study level question 1 will have 6 options available for participants to identify themselves as being in "1st year" up until "5th year" or "postgraduate", participants which have selected years 1-5 will define the "undergraduate" group and those who have selected the "postgraduate" option will define the postgraduate group.

3. Describe your precise rule(s) for excluding observations and/or participants.

In order to clearly define the 'postgraduate' and 'undergraduate' demographics, we must be sure that the data entered by participants is correct, thus cross-checking between study level questions 1 and 2 will increase internal validity by removing data whereby answers are incoherent with each other. In the case a participant has answered the study level

question with “prefer not to answer”, their data will also be removed due to the fact this is vital knowledge in testing the hypothesis. We will additionally remove all the data related to other variables, since only self-efficacy and help-seeking are being tested for the purpose of this study.

4. Describe exactly which inferential analyses you will conduct to examine the main hypotheses, including details of any assumption tests.

Our first hypothesis tests the relationship between help seeking behaviours and the level of study of participants (i.e., undergraduates versus postgraduates.) For this, we will use an independent-samples t-test. More specifically, we will use the Welch t-test to account for unequal variances between the groups. To be able to perform parametric tests, we will treat the ordinal data from the Likert scale as interval, as we expect a large sample size (Sullivan et al., 2013, Norman, 2010.) As our data corresponds to unique participants in a between-subjects design, we assume the data to be independent. To test the assumption of normality, we use QQ plots. Our distribution does not meet the assumption of normality. However, we will continue to use the Welch t-test as it is robust against skew. We will use a two-tailed t-test (with alpha as 0.05) as sufficient literature on the direction of the relationship between level of study and help seeking scores does not exist. The t-test result will either support or reject our null hypothesis that there is no significant difference between help seeking behaviours of undergraduates and postgraduates. Our second hypothesis looks at the relationship between help seeking and self-efficacy across all participants. We will still treat the ordinal data as interval, use QQ plots to test for normality and a scatterplot to test for linearity and homoscedasticity. We will use Pearson’s r if our data meets these assumptions, and Spearman’s rho otherwise. Since we found existing literature on both a negative (Williams et al., 2011) and positive (Xiaodong et al., 1999) correlation between self-efficacy and help seeking, we will use the two-tailed test, with alpha=0.05. If the p-value falls below alpha, we will reject the null hypothesis that there is no significant correlation between self-efficacy and help seeking behaviours.

5. How many observations will be collected or what will determine sample size/statistical power?

We will use the Welch t-test to attain our t statistic and p-value, which we will compare with alpha to test for significance. Our p-value came out to be 0.4356, which is greater than alpha = 0.05. This implies that there is no significant relationship between the level of study and help seeking scores for the sample size we used. We will need a larger sample size. The existing effect size came out to be 0.22. Then, we used power analysis to estimate the required sample size for a significant result with power at least 0.8 and alpha 0.05. The estimated sample size thus calculated was 326. Since it is a between-subjects design, we will need 326 participants in each group. Hence, the total minimum sample size is 652. We used Spearman's rho for the correlation between self-efficacy and help seeking, and estimated a correlation coefficient of rho = 0.167, which indicates a positive relationship. However, the p-value was 0.1055, which is greater than alpha=0.05. Hence, the correlation is not significant. Again, for a significant relationship, we will need to increase the sample size. Using power analysis, with power=0.8 and alpha = 0.05, we get a required sample size of at least 279. From the two conclusions above, we know that we need a minimum of 652 participants to attain significant relationships with sufficient statistical power across our hypotheses.

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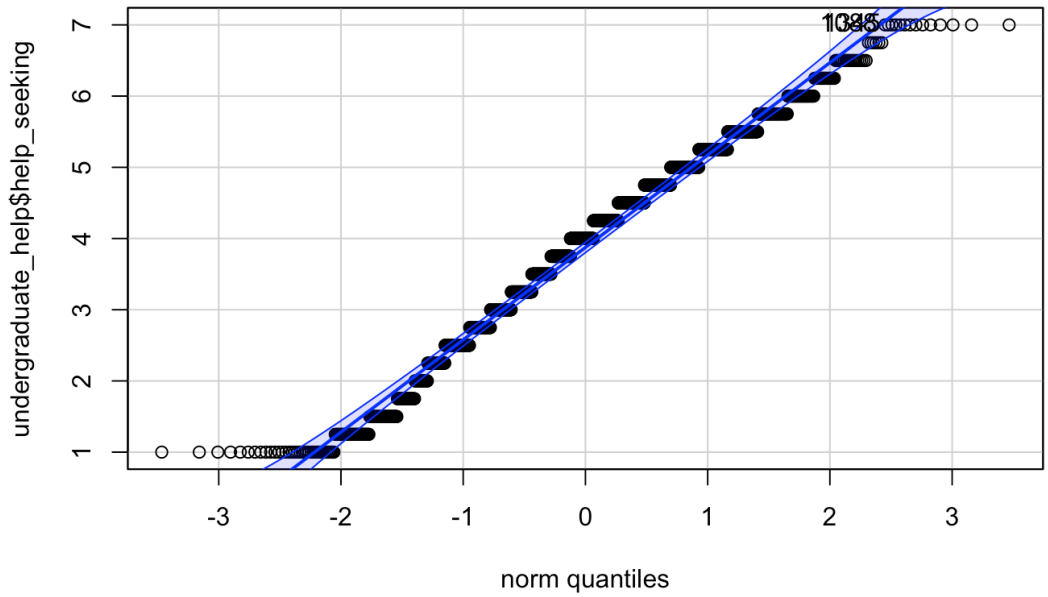
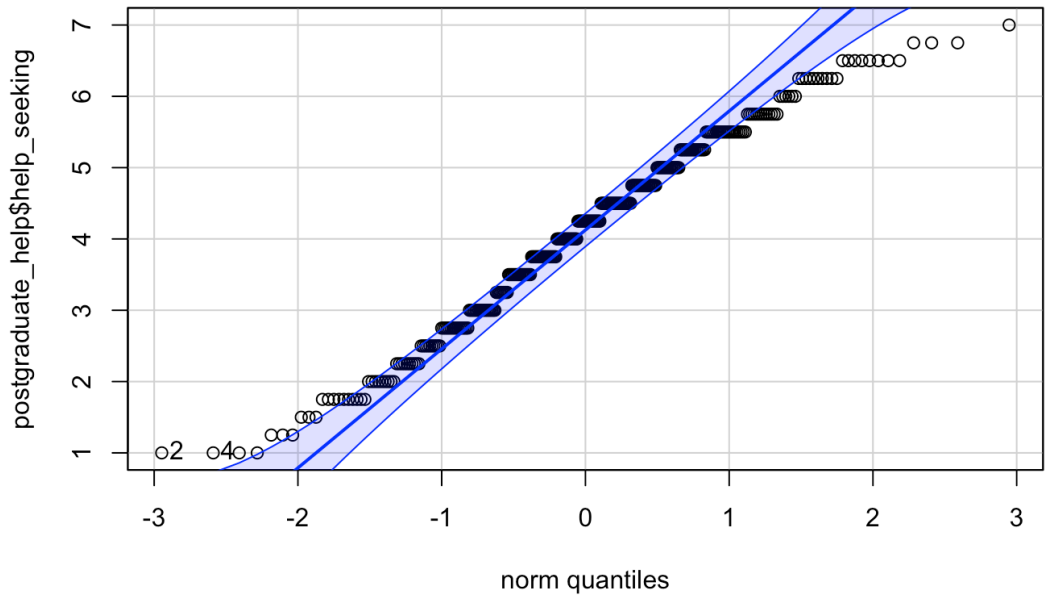
Appendix B. Assumption test of normality

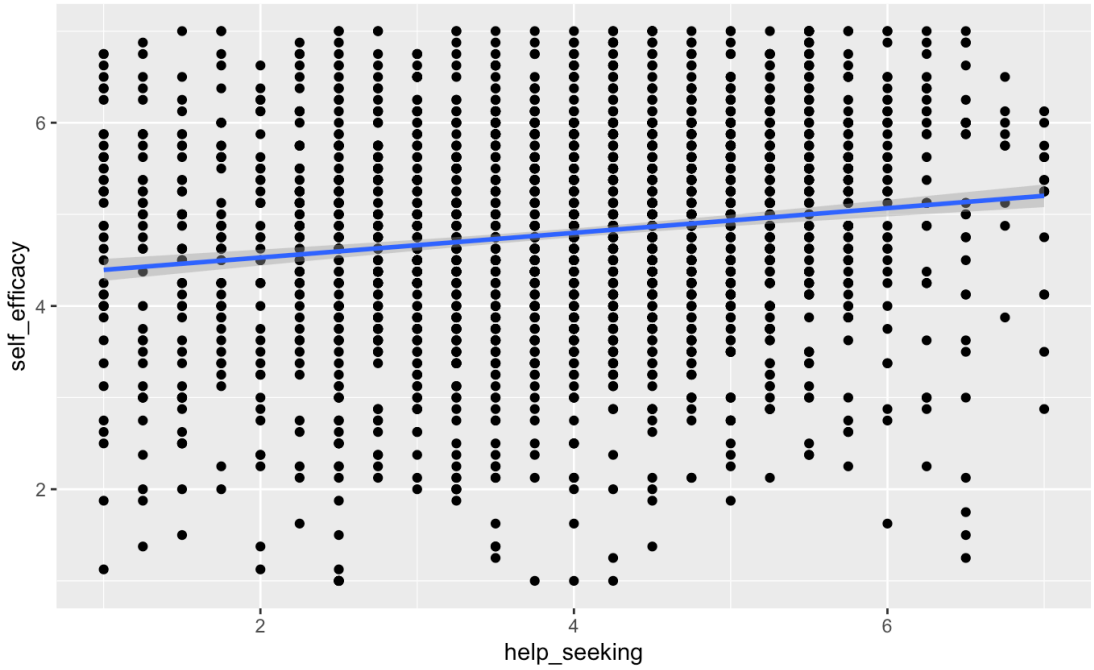
B.1 Assumption test of normality for group variable “undergraduate students”



B.2 Assumption test of normality for group variable “postgraduate students”



Appendix C. Assumption test of linearity and homoscedasticity



Appendix D. Motivated Strategies for Learning Questionnaire (MSLQ) items

Item No.	Question	Reversed	Sub-scale	Item Name
3	When I take a test I think about how poorly I am doing compared with other students.		anxiety	anxiety_1
8	When I take a test I think about items on other parts of the test I can't answer.		anxiety	anxiety_2
14	When I take tests, I think of the consequences of failing.		anxiety	anxiety_3
19	I have an uneasy, upset feeling when I take an exam.		anxiety	anxiety_4
28	I feel my heart beating fast when I take an exam.		anxiety	anxiety_5
2	If I study in appropriate ways, then I will be able to learn the material in this course.		control	control_1
9	It is my own fault if I don't learn the material in this course.		control	control_2
18	If I try hard enough, then I will understand the course material.		control	control_3
25	If I don't understand the course material, it is because I didn't try hard enough.		control	control_4
38	I often find myself questioning things I hear or read in this course to decide if I find them convincing.		critical	critical_1
47	When a theory, interpretation, or conclusion is presented in class or in the readings, I try to		critical	critical_2

	decide if there is good supporting evidence.			
51	I treat the course material as a starting point and try to develop my own ideas about it.		critical	critical_3
66	I try to play around with ideas of my own related to what I am learning in this course.		critical	critical_4
71	Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives.		critical	critical_5
37	I often feel so lazy or bored when I study for this class that I quit before I finish what I planned to do.	R	effort	effort_1
48	I work hard to do well in this class even if I don't like what we are doing.		effort	effort_2
60	When course work is difficult, I either give up or only study the easy parts.	R	effort	effort_3
74	Even when course materials are dull and uninteresting, I manage to keep working until I finish.		effort	effort_4
53	When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions.		elaboration	elaboration_1
62	I try to relate ideas in this subject to those in other courses whenever possible.		elaboration	elaboration_2
64	When reading for this class, I try to relate the material to what I already know.		elaboration	elaboration_3

67	When I study for this course, I write brief summaries of the main ideas from the readings and my class notes.		elaboration	elaboration_4
69	I try to understand the material in this class by making connections between the readings and the concepts from the lectures.		elaboration	elaboration_5
81	I try to apply ideas from course readings in other class activities such as lecture and discussion.		elaboration	elaboration_6
35	I usually study in a place where I can concentrate on my course work		environment	enviroment_1
43	I make good use of my study time for this course.		environment	enviroment_2
52	I find it hard to stick to a study schedule.	R	environment	enviroment_3
65	I have a regular place set aside for studying.		environment	enviroment_4
70	I make sure that I keep up with the weekly readings and assignments for this course.		environment	enviroment_5
73	I attend this class regularly.		environment	enviroment_6
77	I often find that I don’t spend very much time on this course because of other activities.	R	environment	enviroment_7
80	I rarely find time to review my notes or readings before an exam.	R	environment	enviroment_8
7	Getting a good grade in this class is the most satisfying thing for me right now.		extrinsic	extrinsic_1

11	The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade.		extrinsic	extrinsic_2
13	If I can, I want to get better grades in this class than most of the other students.		extrinsic	extrinsic_3
30	I want to do well in this class because it is important to show my ability to my family, friends, employer, or others.		extrinsic	extrinsic_4
40	Even if I have trouble learning the material in this class, I try to do the work on my own, without help from anyone.	R	help	help_1
58	I ask the instructor to clarify concepts I don't understand well.		help	help_2
68	When I can't understand the material in this course, I ask another student in this class for help.		help	help_3
75	I try to identify students in this class whom I can ask for help if necessary.		help	help_4
1	In a class like this, I prefer course material that really challenges me so I can learn new things.		intrinsic	intrinsic_1
16	In a class like this, I prefer course material that arouses my curiosity, even if it is difficult to learn.		intrinsic	intrinsic_2
22	The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible.		intrinsic	intrinsic_3

24	When I have the opportunity in this class, I choose course assignments that I can learn from even if they don't guarantee a good grade.		intrinsic	intrinsic_4
33	During class time I often miss important points because I'm thinking of other things	R	meta	meta_1
36	When reading for this course, I make up questions to help focus my reading.		meta	meta_2
41	When I become confused about something I'm reading for this class, I go back and try to figure it out		meta	meta_3
44	If course readings are difficult to understand, I change the way I read the material.		meta	meta_4
54	Before I study new course material thoroughly, I often skim it to see how it is organized.		meta	meta_5
55	I ask myself questions to make sure I understand the material I have been studying in this class.		meta	meta_6
56	I try to change the way I study in order to fit the course requirements and the instructor’s teaching style.		meta	meta_7
57	I often find that I have been reading for this class but don’t know what it was all about.	R	meta	meta_8
61	I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying for this course.		meta	meta_9

76	When studying for this course I try to determine which concepts I don't understand well.		meta	meta_10
78	When I study for this class, I set goals for myself in order to direct my activities in each study period.		meta	meta_11
79	If I get confused taking notes in class, I make sure I sort it out afterwards.		meta	meta_12
32	When I study the readings for this course, I outline the material to help me organize my thoughts.		organisation	organisation_1
42	When I study for this course, I go through the readings and my class notes and try to find the most important ideas.		organisation	organisation_2
49	I make simple charts, diagrams, or tables to help me organize course material.		organisation	organisation_3
63	When I study for this course, I go over my class notes and make an outline of important concepts.		organisation	organisation_4
34	When studying for this course, I often try to explain the material to a class mate or friend.		peer	peer_1
45	I try to work with other students from this class to complete the course assignments.		peer	peer_2
50	When studying for this course, I often set aside time to discuss course material with a group of students from the class.		peer	peer_3

39	When I study for this class, I practice saying the material to myself over and over.		rehearsal	rehearsal_1
46	When studying for this course, I read my class notes and the course readings over and over again.		rehearsal	rehearsal_2
59	I memorize key words to remind me of important concepts in this class.		rehearsal	rehearsal_3
72	I make lists of important items for this course and memorize the lists.		rehearsal	rehearsal_4
5	I believe I will receive an excellent grade in this class.		self_efficacy	self_efficacy_1
6	I'm certain I can understand the most difficult material presented in the readings for this course.		self_efficacy	self_efficacy_2
12	I'm confident I can understand the basic concepts taught in this course.		self_efficacy	self_efficacy_3
15	I'm confident I can understand the most complex material presented by the instructor in this course.		self_efficacy	self_efficacy_4
20	I'm confident I can do an excellent job on the assignments and tests in this course.		self_efficacy	self_efficacy_5
21	I expect to do well in this class.		self_efficacy	self_efficacy_6
29	I'm certain I can master the skills being taught in this class.		self_efficacy	self_efficacy_7
31	Considering the difficulty of this course, the teachers, and my skills, I think I will do well in this class.		self_efficacy	self_efficacy_8

4	I think I will be able to use what I learn in this course in other courses.		task_value	task_value_1
10	It is important for me to learn the course material in this class.		task_value	task_value_2
17	I am very interested in the content area of this course.		task_value	task_value_3
23	I think the course material is useful for me to learn.		task_value	task_value_4
26	I like the subject matter of this course.		task_value	task_value_5
27	Understanding the subject matter of this course is very important to me.		task_value	task_value_6