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TIME AND ITS RELATIONSHIP TO HELP-SEEKING BEHAVIOR TOWARD LEARNING STRATEGY RESOURCES WITH ENTERING MEDICAL SCHOOL STUDENTS

BY

JOANNE LEE BUCKLAND

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@JOANNE BUCKLAND

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Approval of Thesis

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Submitted by

Joanne Buckland

In partial fulfillment of the requirements for the degree of

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The thesis examination committee certifies that the thesis
and the oral examination is approved

Supervisor:
Dr. Terry Anderson
Athabasca University

Committee Members:
Dr. Sabine Graf
Athabasca University

Dr. Debbi Johnson
St. George's University

External Examiner:
Dr. Jane Brindley
University of British Columbia

August 11, 2017

1 University Drive, Athabasca, AB, T9S 3A3 Canada
P: 780.675-6821 | Toll-free (CAN/U.S.) 1.800.788.9041 (6821)
fgs@athabascau.ca | fgs.athabascau.ca | athabascau.ca

Abstract

In medical school, the rigorous pace of instruction and large volume of content can create difficulties for some students and medical institutions are exploring ways to incorporate pedagogical communication and online innovations in order to help students be successful. This study monitored entering Year 1 students' intent to use help from face-to-face and online learning strategy resources at St. George's University. The purpose of the study was to explore if entering medical students' perceived they had enough discretionary time available to seek help for an academic problem using the learning strategy resources at SGU.

This study used an action research case study methodology using mixed methods data collection and analysis that was guided through a pragmatic worldview. The relationship between entering medical students intent to seek help when faced with learning challenges and their actual help sought, where these students were most likely to seek academic help, and gender bias was investigated through pre- and post-questionnaires. How discretionary time was perceived to be a factor in seeking help, given that discretionary time allocation is so limited in medical school, was explored through semi-structured interviews.

The results demonstrated that the majority of entering Year 1 medical students reported intention to seek help during orientation and actual help sought during the term had the highest matches with the Internet and learning strategist. Just under half of the interviewees indicated that they had explored the online learning strategy resources at least once. Results also showed that there was some gender bias in help-seeking behavior but the sample size was too small to make more than generalities. The findings indicated

that students' perception of discretionary time was not a major factor in deciding to seek or not seek help from learning strategies resources. Other factors indicated to be important to students' decisions to seek help could be summarized by the category title "unambiguous communication."

Although this study focused on specific learning strategy resources in a particular context, the results and findings may provide benefit to other professional studies schools with similar time pressures on their students.

Dedication

I want to dedicate this dissertation to the St. George's University entering SOM Term 1 students that participated in all of many the components of this study. And to Romero Benjamin, my initial website designer and friend.

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Chapter 1: Introduction for the Study

Success in medical school necessitates a quick adjustment to the specific requirements and challenges of the medical environment by entering students. Although incoming students are well educated, many are underprepared for the pace of the content delivery and the volume of the material to be covered (Barker & Olson, 1997; Dyrbye, Thomas, & Shanafelt, 2005; Pelley & Dalley, 2008; Russell, Hendricson, & Herbert, 1984). Medical schools are aware of the learning challenges some students face and most provide various forms of academic support including learning strategy resources (Saks & Karl, 2004). Common academic support program goals outlined by Collins and Sims (2006) include motivating students to seek help when needed, providing available resource information including where to go to get help, and promoting the development of self-regulated learning strategies. One key self-regulated strategy is being able to make effective choices regarding the expenditure of discretionary time. The efficacious use of time is crucial to success in medical school because of the accelerated pace of learning along with the volume of content to be learned (Covic, Adamson, Lincoln, & Kench, 2003; West & Sadoski, 2011) and the costs of failure are extremely high, in both human and financial terms (Sayer, Chaput De Saintonge, Evans, & Wood, 2002). Medical institutions need to be cognizant of the limited time students have outside of class to access and utilize any help supports supplied by the school and provide clear direction on how to access these supports in a timely manner if needed.

Student support as noted by Brindley, Walti, and Zawacki-Richter (2004) “encompasses all of those interactive activities and services in education intended to support and facilitate the learning process” (p. 11). This support can vary greatly from

institution to institution (Collins & Sims, 2006; Davidson, 2003; Nuss, 2003), from medical school to medical school (Saks & Karl, 2004), and between face-to-face and online learning environments (Floyd & Casey-Powell, 2004; Mills, 2004). In the context of planning student support, Tait (2000) states "there is no blueprint which can simply be transferred from one institution or country to another" (p. 288).

However, when the need for academic assistance arises, students must make a decision to use the academic resources provided and then access the best choice. Academic help-seeking occurs when students attempt to obtain assistance from others with more knowledge or expertise for academic issues (Newman, 1998b, 1994). This ability to find and make use of help from other sources is an important strategy students can employ to be successful in the learning environments they encounter (Järvelä, 2011). In fact, academic help seeking is a self-regulated learning strategy and has been identified in the literature as contributing to student success (Aleven, Stahl, Schworm, Fischer, & Wallace, 2003; Bartholomé, Stahl, Pieschl, & Bromme, 2006; Karabenick & Dembo, 2011; Ryan, Gheen, & Midgley, 1998; Ryan, Hicks, & Midgley, 1997; Ryan, Pintrich, & Midgley, 2001; Schworm & Gruber, 2012). Help seeking is a critical behavior that can assist students with complex learning concepts they do not understand (Kitsantas & Chow, 2007) and with learning new or more effective ways to learn.

Of interest in this study was if the contextual factor, time, was a factor in help seeking for entering medical students. Crucial to medical students' success is effective management of time because of the accelerated pace of learning. Staying current in their progress through courses is imperative for medical students. Thus their time is a highly valued and usually scarce resource. However, seeking help takes time, so students must

make difficult choices about how and when to access help resources. What was of special concern to this researcher were the students who were not meeting academic standards and who were also not seeking academic help (Cheng & Tsai, 2011; Schworm & Gruber, 2012) at the institution under study.

The study took place at St. George's University (SGU), a privately owned international university located on the island of Grenada in the West Indies. SGU has three main schools: the School of Medicine (SOM), the School of Veterinary Medicine (SVM), and the School of Arts and Sciences (SAS). Of specific interest is the SOM with a current enrolment of 3,106 as of February 2017 (http://www.sgu.edu/academic-programs/school-of-medicine/md/). SGU also has a partnership medical program with Northumbria University (NU) in the United Kingdom (UK) called the Keith B. Taylor Global Scholars Program (KBTGSP). Medical students can choose to do both their first and second years of medical school in Grenada or their first year in the UK and their second year in Grenada.

The researcher has worked at the institution under study for the past seven years as a learning strategist, primarily with medical students, and is presently the Coordinator of the Learning Strategies Program (LSP). Previous experience includes practicing as a learning strategist at an Ontario college for two years with a specific focus on helping students in Health Sciences including the nursing, paramedic, and massage therapy programs. At SGU, the main goal of the LSP, and a significant part of the researcher's role, is to provide academic assistance to all students, and to entering SOM students in particular. Based on the researcher's experience and current research interest, entering SOM students were chosen as the population of interest. The purpose of the study was to

explore if entering medical students' perceived they had enough discretionary time available to seek help for an academic problem using the learning strategy resources at SGU.

This chapter introduces the study, gives an overview and describes the background pertinent to the study, and then presents a rationale for the project. The research questions are then delineated and followed by the significance and the nature of the study. This chapter concludes with some of the pertinent terminology and an outline of the entire thesis.

Overview and Background to the Study

Current medical students are expected to successfully cope with a demanding, fast-paced, high-volume curriculum, and graduate as self-directed, lifelong learners. Entering medical students must quickly adapt to the new rigors of their learning environment and find ways to expeditiously overcome any learning deficits that arise. This requires the timely implementation of self-regulated learning strategies.

Medical schools provide various levels of student learner support that include both face-to-face and online learning strategy resource options. However, in order to be effective medical students must decide to seek help from these resources. One factor that can complicate this decision is the limited amount of discretionary time available to medical students. Discretionary time in this context is the time not mandated for students to be in academic activities by the school.

This study was situated within a medical school environment at SGU on the True Blue campus in Grenada. In the following section, the background elements of the study are described. These elements include student support, learning strategy resources, self-

regulated learning, the researcher and the context of the university under study, and the process leading up to the creation of the online Learning Strategies Research Website (LSRW).

Overview of the Study

Medical education is a continuously evolving learning environment necessitating medical students to be effective, self-directed, lifelong learners (Murdoch-Eaton & Whittle, 2012; Pinto & Zeitz, 1997; Stagnaro-Green, 2004). A medical school curriculum must incorporate learning experiences that develop self-directed and lifelong learning skills so that medical students graduate prepared for a professional life that demands continued self-regulation and self-education (Liaison Committee on Medical Education, 2014; White, 2007). However, the academic rigor of medical school presents serious challenges to many students, especially during the initial transition into the first term (Ball & Bax, 2002; Dyrbye et al., 2005; Parkerson, Broadhead, & Tse, 1990). Although entrance requirements into medical school are quite demanding, many students are unprepared for the fast pace and sheer volume of material they are confronted with and are not yet equipped with key strategies to deal with these issues; they often lack the awareness to be able to adapt and change their learning strategies without help (Pelley & Dalley, 1997; Rosenthal, 2012). This is despite the fact that nearly all students enter medical school with previous success in highly competitive learning environments (Hays, Lawson, & Gray, 2011; Rohe, Barrier, Clark, & Cook, 2006).

To overcome academic learning deficits, students need to seek appropriate help in a timely manner. Help seeking has been identified as an important self-regulatory strategy found to contribute to student learning (Zimmerman & Martinez-Pons, 1988).

Medical students who encounter difficulty with learning content need to quickly engage in help-seeking behavior to find and then implement the learning strategy resources necessary to be successful in medical school. The content information that medical students are required to learn is delivered at an unrelenting pace so students cannot afford to fall behind and must manage their time effectively over the entire term. In a review of the literature on time management, Hellsten (2012), concluded

> Seven time management skills or behaviors can be considered essential to effective time management due to their repetitive prominence in the literature: (a) time analysis, (b) planning, (c) goal setting, (d) prioritizing, (e) scheduling, (f) organizing, and (g) establishing new and improved time habits. (p. 5)

However for entering medical students, finding help with deficits in learning strategies takes time. This means that entering students need to be self-regulated learners effectively incorporating key behaviors that include metacognition, reflection, motivation, and learning strategies (de Boer, Donker-Bergstra, & Kostons, 2012).

Most medical universities recognize the challenges incoming students face as they transition into a more rigorous academic environment, and many provide learning strategy resources through their student support systems (Saks & Karl, 2004). Factors such as high dropout rates, poor learning, and excessive stress reflect negatively on the institution as well as the students. Because educating medical students is a long and expensive process, medical schools are investigating ways to improve their student services and increase student retention (Sayer et al., 2002). One expanding area of interest is providing student services through a variety of face-to-face and online resources. Also, recent developments in the Internet, technology, and pedagogy have given rise to increased interest in Course Management Systems (CMS) used to deliver online course material to students. Whatever delivery methods are chosen, in order for

both face-to-face and online learning strategy resources to have the potential of positively impacting students, the students who need them must be able and willing to access them in a timely manner.

Seeking help when faced with academic challenges is a crucial skill that entering medical students require to be successful. The historical literature on help-seeking consistently indicates that the people who need help do not always seek it out in either face-to-face environments (Cheng & Tsai, 2011; Cleland, Arnold, & Chesser, 2005; Newman, 1998b; Whipp & Lorentz, 2009; Winne, 1997) or online environments (Roll, Aleven, McLaren, & Koedinger, 2011; Schworm & Gruber, 2012; Taplin, Yum, Jegede, Fan, & Chan, 2001) while successful students engage in self-regulated learning behavior including seeking help (Järvelä, 2011; Mäkitalo-Siegl & Fischer, 2011; Newman, 1998b; Schworm & Gruber, 2012; Winne, 1997). Students not seeking help when they need it take unnecessary risks with their academic progress and ultimate success (Ryan et al., 2001). This fact makes it even more imperative for medical students to seek timely help because of the significant demands innate to their learning environment (Pelley & Dalley, 2008; Russell et al., 1984).

Studies with college students by Karabenick and Knapp (1991) on the relationship of academic help seeking and students use of learning strategies, led them to recommend further research into this relationship. Since help seeking is a complex construct, Ryan et al. (2001) suggested the contextual factors that are related to students' competence with help seeking be explored. While these authors investigated help seeking in the classroom context, a possible context to be explored is discretionary time. Merriam-Webster defines context as "the interrelated conditions in which something exists or occurs: environment,

setting" (Context, n.d., para. 2). Time, especially discretionary time, is a contextual factor in the medical school setting as many students feel there is never enough of it to get everything done. The medical school environment reinforces the critical importance of making timely and wise decisions in expending discretionary time.

"Students' time is a limited resource" (Britton & Tesser, 1991, p. 405). Students' perception about how they expend their discretionary time is an important consideration for this study from a number of perspectives. First, it is a multifaceted learning strategy (Covic et al., 2003). Second, time is the students' currency in medical school (Pelley & Dalley, 2008). Third, it takes time to manage time, both from a student perspective and an institutional student support perspective. Finally, the potential to help students deal with time as a help-seeking issue is within the purview of the current learning strategies faculty and resources at SGU.

As SGU moves to spend time and energy on the creation and development of online learning strategy resources designed to give students access to timely term-, and school-specific strategies, many questions arise about the return on investment. Much of this is beyond the scope of an education dissertation and so the problem that this study seeks to address is one small piece of the larger issue: how is time a factor in seeking or not seeking learning strategy help for entering medical students? The purpose of the study was to explore if entering medical students' perceived they had enough discretionary time available to seek help for an academic problem using the learning strategy resources at SGU.

Background to the Study

Student support. The Department of Educational Services (DES) is devoted to student support and the promotion of academic excellence through the development of the skills necessary for self-regulation and lifelong learning. There are three unique student support components offered within the DES at the True Blue campus in Grenada under the Office of Student academic that include the Learning Strategies Program (LSP). LSP, with offices on the Grenadian True Blue campus and the Northumbria University (NU) campus, is the focus of this study because of its role in providing academic student support.

The LSP provides topic specific learning strategy student support through workshops, one-to-one student appointments, and class sessions. Historically, SGU has been a traditional face-to-face campus, especially for entering medical students. However, there has been a recent shift to develop and use online support that includes posting resources to the university website and holding one-to-one student appointments via real-time, network-based teleconferencing. The student support literature promotes the development of online learner support systems that are designed specifically for that learning environment and built on solid learning theory (Garrison & Baynton, 1987; Johnson & Barrett, 2003; Phillips, 2003). Recently, the DES online learning strategy resources have been, and are being planned, developed, and created with this perspective.

Learning strategies. Learning strategists are professional educators with concentrated education and training in teaching, counselling, coaching, facilitating, communication, and problem solving (Learning Specialists Association of Canada, 2015). The role of a learning strategist is to “provide comprehensive learning

development support through a variety of assessments, methods, strategies, and programs that are developed using scholarship, empirical data, practical experience, and sound pedagogy" (Learning Specialists Association of Canada, 2015, para. 2).

The learning strategists in the DES would agree with McLoughlin (2002) that learners need support and structured learning experiences in order to be successful in both online and face-to-face learning environments. Kendall (2007) makes the point that developing strong, quality online and on-campus student services support is an evolutionary process. This evolution has been ongoing over the past sixteen years in the DES to the point where an experienced learning strategies team of ten is in place with a predominantly face-to-face focus between students and learning strategists. This emphasis on face-to-face relationships has resulted because the medical school at SGU is a traditional on-campus program. The DES has realized that further evolution of the learning strategies program needs to include the online learning environment and opportunities in this realm need to be comprehensively explored.

The current Learning Strategies Program at SGU offers academic support to students through one-to-one appointments, group appointments, and workshops led by qualified faculty. Learning strategy topics covered include, but are not limited to, time and task management, note taking and making, test taking and test anxiety, self-testing, memorizing, integration, reading, life balance, and problem solving. The goal of any DES learning strategies session is to help students determine why their learning is not as effective or efficient as they desire or need it to be. This support is offered freely to all students and attendance at any learning strategy session is not mandatory; however, it may be highly recommended by administrators or faculty. Students also have direct

access to one-page tip sheets covering a wide variety of learning strategy topics that they can pick up in person from the DES office or download from the SGU student website. These learning strategy tip sheets are also sometimes used during appointments with learning strategists.

There are many ways to categorize learning strategies. The history and development of learning strategies have developed along two major research pathways: one by the educational psychologists and the other by the second language learning researchers (L2). This history is not without controversy. The main disagreement has been that "we cannot offer a watertight definition of 'learning strategies'" (Dörnyei, 2005, p. 166). Other problematic issues that significantly impacted the direction of second language learning research included the categorization of learning strategies, the data collection instruments, and questionable results (Rose, 2012). As a result, educational psychologists and some L2 researchers have moved from using "learning strategies" in general to "self-regulated learning strategies" (Dörnyei, 2005; Rose, 2012).

In response to Dörnyei, Gu (2011) proposed a "prototypical perspective" on learning strategies as a way to address the debate that exists in the literature over what defines a learning strategy. According to Gu, prototypes stand for the ideal forms against which particular instances of strategies are evaluated. "The definition of learning strategies, according to prototype theory, would mean the delimitation of attributes that anchor the central core of a strategy, while at the same time spelling out possible dimensions of variance" (Gu, 2011, p. 336). The prototypical core Gu (2011) describes is a dynamic process involving, at a minimum, attending, executing, monitoring, modifying, evaluating, and coordinating strategic behavior. However, the focus of this study is not on

the content, classification of, or approach to learning strategies but rather on one particular learning strategy, help seeking. Help seeking will be explained in greater detail in the literature review in Chapter 2.

Self-regulated learning and associated learning strategies are an important part of this study discussion because as Schraw (2010) indicates, "even good learners experience trouble regulating learning in unfamiliar domains or challenging circumstances" (p. 258). Medical school, especially during transition, certainly qualifies as both an unfamiliar domain and a challenging circumstance. Thus, the use of self-regulated learning and self-directed learning in education is discussed in the following section.

Self-regulated learning. The Association of American Medical Colleges report (AAMC, 1992), which assessed changes needed in medical education made the point that "the amount of information compressed into the four years of medical school cannot be memorized and later applied to the care of a human being" (p. 36), leading to the recommendation that skills be fostered by medical schools to graduate self-directed physicians possessing a lifelong learning philosophy. This focus on curriculum outcomes for medical students was reiterated again by the Liaison Committee on Medical Education (2014) setting standards for July 2015 which included the requirement that "The faculty of a medical school ensure that the medical curriculum includes self-directed learning experiences and time for independent study to allow medical students to develop the skills of lifelong learning" (p. 12). Medical education researchers Brydges and Butler (2012) added that medical schools are increasingly being asked to "support self-regulation as a central learning outcome" (p. 71). Of significance to the discussion is the conflation of the terms self-directed learning (SDL) and self-regulated learning (SRL)

in the literature. However, there are important distinctions between the two and therefore it is necessary to delineate how these terms will be used in the context of this study.

Self-directed learning is seen as a broader concept than self-regulated learning because "SDL includes an additional premise of giving students a broader role in the selection of what will be learned and critical evaluation of the learning materials that were selected" (Loyens, Magda, & Rikers, 2008, p. 418). While both SDL and SRL focus on learner control, in SDL the learner is solely in control of defining the learning tasks and in SRL both the teacher and the learner can generate learning tasks (Loyens et al., 2008). This difference means that "SDL can encompass SRL, but the opposite does not hold" (Loyens et al., 2008, p. 418). In medical school both the learner and the teachers generate learning tasks indicating that SRL is the appropriate term and so the narrower construct SRL as defined by Schraw (2010) will be used in this study. "Self-regulated learning (SRL) refers to monitoring and controlling one's own cognitive performance before, during, and after a learning episode" (p. 258).

Context. As student enrolment has increased at SGU and as the passing scores on the United States Medical Licensing Examination (USMLE) Step 1 required for residency placement have increased (Doctors in Training, 2015), the need to have viable, scalable, learning strategy resource options for SGU's medical students has also increased. A decision was made by DES faculty and the SGU administration to determine not only how to most effectively move learning strategy resources online but also how to ensure that the students who need them are accessing them. This study has been part of the exploration process to determine how to create and effectively deliver more of the services offered by DES online.

The strategic online learning resources were designed to accomplish several things. First, placing learning strategy resources online provides increased access to resources. The DES office is open Monday through Friday with fixed daytime hours, which limits student access to both learning strategists and resources. In contrast, online resources are available at any time.

Second, these online resources create an opportunity to target a different segment of the student population currently not using the face-to-face resources. Students who prefer online access to face-to-face access now have the opportunity to choose between these two resource types. The meta-analysis summarizing the empirical literature on student preference for a traditional educational format over a distance education format by Allen, Bourhis, Burrell, and Mabry (2002) concluded "to the degree that student satisfaction plays a major role in the assessment or evaluation of instructional effectiveness, distance learning represents a format that students evaluate comparably to other potential formats for a course" (p. 93).

Third, the online resources have the potential of positively changing the face-to-face appointment dynamic. Students can be instructed to review specific online resources before face-to-face appointments and so have a better idea of what they wish to talk about during the sessions thus potentially improving the efficiency of the appointment. The online resources also provide the student with the opportunity to review the strategies talked about during the session.

Fourth, the learner is provided with more control over the pace and the sequencing of the learning (Wagner, 1994). The online resources are available without

limits of time, place, and pace - allowing the learner to choose when, where, and how to use the learning strategy offerings.

Fifth, these online strategy resources are also available to faculty advising students. The faculty has the opportunity to refer students to the strategic, SGU-specific learning resources that complement their sessions on content when meeting with students.

Finally, this online resource provides the same anywhere/any time access to the SGU students on the NU campus in terms 1 and 2 and offers the potential to expand the content to support students that leave the Grenada campus and enter their clinical studies.

Strategic online learning resources have much to offer entering medical students. However, despite the positive effects that could result from face-to-face and online learning strategy resources use or how excellent the resources are, if students wait to access them or do not use them at all because they perceive there is not enough time, then their effectiveness will be limited (Pillai, 2010).

The literature is clear that learning is improved when the self-regulatory learning strategy of help seeking is implemented (Newman, 2002; Zimmerman & Martinez-Pons, 1988). What is also clear from similar help-seeking literature is that often students avoid seeking help (Cheng & Tsai, 2011; Cleland et al., 2005; Newman, 1994; Schworm & Gruber, 2012; Whipp & Lorentz, 2009; Winne, 1997). This same literature on help seeking identifies many factors that can influence help-seeking behavior, often using similar terms that are not as clearly distinct. These include environmental (Lee, 2007), learner-related (Bartholomé et al., 2006), motivational (Collins & Sims, 2006; Newman, 1998b; Ryan & Pintrich, 1997; Ryan et al., 2001), cognitive (Aleven et al., 2003), psychological (Kitsantas & Chow, 2007), individual (Lee, 2007), contextual (Ryan et al.,

2001), and external (Taplin et al., 2001). However, there is no evident research on how time specifically influences students' help-seeking behavior in general and specifically on medical students.

The real and specific problem for the learning strategies program is ensuring that the students that need academic help receive it. The LSP in DES has ten full-time learning strategists, including myself, working within individual portfolios to ensure adequate strategy coverage for specific terms and schools of learners attending SGU. As the coordinator I have many responsibilities, and the academic support of Term One medical students is in my portfolio. The LSP strategists have worked collaboratively to create the workshops and support program elements necessary to meet the learning support needs for the School of Medicine (SOM), the School of Veterinary Medicine (SVM), and the School of Arts and Science (SAS). The researcher's interest in this dissertation topic was to explore how to more effectively reach the entering SOM Term 1 students using both face-to-face and online resources when faced with the time constraints in first term.

Creation of the Research Learning Strategies Resource Website. One of the reasons action research (AR) was chosen for this project was so that the researcher, a learning strategist and the Coordinator of the LSP, could explore how to create learning strategy resources specific to the online environment rather than just migrate existing content to the online platform.

In collaboration with the learning strategists team, a learning strategies resource website (LSRW) with a focus on six learning strategy nodes (see Table 1) was designed

during the fall of 2014 and launched in January of the spring term of 2015 for SOM Term 1 students.

Table 1.

Learning Strategy Nodes for School of Medicine Term 1 Students

Node	Time Management	Memorization	Notes	Small Groups	Self-Testing	Stress & Anxiety
Sub Nodes	• Task Management • Scheduling & Planning	• Rote Memorization • Memorization & Understanding	• Note Taking • Note Making	• Formal • Informal	• Whiteboarding • Practice Questions • Creating Questions	• Stress • General Anxiety • Test Anxiety

The goal of the Learning Strategies Resources Website (LSRW) was to provide medical students with more than just a static, linear menu of links to online resources. The site was designed with a decision tree format with two distinct process pathways for the students – information or guidance. The information pathway provided basic information in the form of tip sheets and video clips under six learning strategy headings shown in Table 1. In contrast, the guidance pathway was created with a non-linear decision tree format and designed to engender interaction between the student and the resources. Students were asked yes or no questions that helped them determine which learning strategy node most closely matched their academic issue or question. Once they determined a starting strategy node, further questions lead to specific subtopics.

For example, a yes answer to the question “Are you behind?” would direct them to the Time Management node. On the Time Management page, answering no to the question “do you stop what you are working on when the time you set to accomplish the task is up” would direct them to the subtopic of Task Management. Once they reached

the final level of a subtopic there would be specific strategy information on that topic and also included the specific tip sheet and video information in context.

The information versus guidance choice was inspired by the importance of the guiding role of learning strategists in the face-to-face learning model. Recognizing that the student perspective could be vastly different than the learning strategists' perspective regarding the importance of online learning strategy resources, a prototype study was designed to investigate what the students thought about the LSRW. The prototype study was a mixed methods case study utilizing both quantitative and qualitative data collection to find out how SOM Term 1 students experienced the online LSWR. The prototype study report including the introduction, methods, results, and conclusions is located in Appendix B.

Two of five conclusions are shown below as they had a direct impact on the development of the next stage of the LSRW for the study.

1. Time matters as much when using face-to-face as when using online resources.
2. The learning strategy content resources need to be more specific where possible.

The focus for this study was not on the face-to-face and online learning strategy resources themselves but to explore if entering medical students' perceived that they had enough discretionary time available to seek help for an academic problem using the learning strategy resources at SGU.

Statement of the Problem

The annual Term 1 SOM enrolment at SGU has continued to steadily increase over the past several years. The number of students who entered the four-year MD program in the 2010 academic year was just under 650 for Fall 2010 and near 600 for Spring 2011. In the 2015 academic year that had increased to 867 in Fall 2015 and 545 in Spring 2016. The enrolment numbers in the 2015 academic year were 3% higher than those of the previous year (Office of University Communications and Publications, 2016). This increase in numbers has placed greater pressure on the academic student support resources in DES, particularly the learning strategists. At the same time, the cumulative weighted mean grade average (WMPG) for a student to successfully be promoted from one term to the next at SGU was raised from 73% percent to 75%. These two statistics have increased students' use of student services, and in particular, one-to-one student contact appointments. The current learning strategies program model is to provide opportunities for students to meet with learning strategists face-to-face with wait times of less than one week. As the number of students increases and as students are challenged to perform better academically, there is a need for viable options to add to the current resources within a tight budget to make sure that students have access to the learning strategy resources without unacceptable wait times.

The learning strategies unit in DES aspires to create online learning strategy resources that are easy to use, timely, accessible, and specific to student population needs at SGU. The learning strategist team also wants to do more than just put a menu of learning strategy information choices onto the existing SGU student website because they believe that the relationship they develop with students in their face-to-face appointments

is a key element to the success of the DES. However, even as these resources are in development, there is a need to explore how students help-seeking behavior, in this case their use of both face-to-face and online resources, is impacted by their perception that they have enough discretionary time available to seek help for an academic problem. If the students need the resources but are not using them and cannot be identified as such, then there is a significant problem that needs to be addressed by DES before further development of learning strategy resources continues.

Rationale for the Study

This practical study was needed to explore solutions to a local problem at SGU, an international and private Caribbean medical university. The narrow version of the problem was that many entering Term 1 medical students who experience academic challenges do not seek help from the current learning strategy resources. The larger problem has been how to effectively design and deliver quality face-to-face and online learning strategy resources for a diverse population of students. A more focused version of the problem was how to do this for the entering students in the SOM at SGU.

What was proposed in this study was to monitor entering SOM Term 1 students' use of face-to-face and online learning strategy resources and then explore how their perception of the availability of discretionary time influenced their help-seeking behavior toward these resources over the course of the term. The data gathered will provide insight into how the DES Learning Strategies Program (LSP) can better address help-seeking issues for entering medical school students. Potential solutions for the design and delivery of quality face-to-face and online learning strategy resources that are used by

students who need them are important to both the student population and the SGU administrators and faculty because student success is a core institutional value.

There were two reasons why time was chosen as the variable to explore. First, during the prototype study, time was mentioned as an important consideration in deciding to use the website. Even though students had anytime, anywhere access to online learning strategy resources, how long it would take to access these resources was a deciding factor. Second, "not having enough time" was the most common excuse given by students when they were asked why they had not sought face-to-face learning strategies help or not sought help sooner. While help-seeking researchers have mentioned other reasons why students avoid seeking help, such as embarrassment (Karabenick & Dembo, 2011; Ryan et al., 2001), threat to self (Ryan et al., 1997), negative judgments of others (Karabenick & Knapp, 1991; Nelson-Le Gall, 1985; Newman, 1994), negative judgments of feasibility to get help (Ryan et al., 2001), and admitting lack of competence (Nelson-Le Gall, 1985), these were not what learning strategists heard from students. In order to explore how accurately these anecdotal student comments were, I chose to ask entering medical students if they perceived they had enough discretionary time available to seek help for an academic problem using the learning strategy resources.

Nature of the Study

An exploratory action research (AR) case study design frame (Simons, 2009) with a mixed methods research design from a pragmatic paradigm was carried out. The underlying philosophy for most forms of AR, according to Baskerville and Myers (2004), is pragmatism. From a philosophical perspective, pragmatism defines reality in practical terms and locates truth in solutions to problems (Shaw, Connelly, & Zecevic, 2010).

Building on this, Morgan (2014) proposed “a broad definition of pragmatism as a philosophy in which the meaning of actions and beliefs is found in their consequences” (p. 26).

The diversity of AR according to Hammersley (2004) crosses several dimensions including methods, methodologies, and theoretical stances but “the core feature of action research seems to be that there should be an intimate relationship between research and some form of practical or political activity” (p. 165). This diversity of AR including the dimensions of epistemological and philosophical assumptions, and theoretical models will be explored further in a review of the literature featured in Chapter 2.

A definition of case study offered by Simons (2009) is based on commonalities across disciplines: “Case study is an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in a “real life” context” (p. 21). AR is a good fit for this study as “the aim in making the choice is to achieve action and research outcomes in such a way that each enriches the other” (Dick, 1993, p. 15). There is a collaborative learning strategist team already in place ready to continue to work toward a solution to solve the educational problem described in this study. Lodico, Spaulding, and Voegtle (2006) substantiated this fit as they described AR as “research conducted by practitioners in their own school settings to identify and take actions to remedy problems that occur in their practice” (p. 282). This point is further emphasized by Bradbury-Huang (2010) who stated “Action research *with* practitioners *always includes* practitioners as partners in the work of knowledge creation” (p. 95).

The learning strategist team started to expend energy creating online resources while already working at near capacity in the face-to-face environment. This meant that each of the individuals involved had a vested interest that their efforts produced online resources that were effective. Action researchers are “doers”, a role SGU encourages all faculty to take on as they use innovation and inquiry to develop their practice (Zuber-Skerritt & Fletcher, 2007, p. 414). AR allows for a pragmatic paradigm for the researcher, the learning strategist team, and the institution to combine action with research and make dynamic, explicit changes for the betterment of the Term 1 SOM students initially, and hopefully the rest of the student body in the future.

As the goal of the study was to explore the complexity of the learning strategies resource project at the particular institution, SGU, in a “real life” context, a case study design frame was an appropriate choice (Simons, 2009). Both quantitative and qualitative data collection methods were used in the study. As described in the next section on the research questions, the preliminary quantitative method preceded the core qualitative method. The preliminary quantitative data was enabled the researcher to discern which Term 1 students have used the learning strategy resources and which have not. This distinction was used to allow selection for the qualitative core method to begin a more in-depth exploration of students’ perceptions of time and help seeking with regard to learning strategy resources. Using both qualitative and quantitative research methods in this study allowed for the achievement of meaningful results that will be applicable to the specific population being studied (Shaw et al., 2010).

Action research methodology, a case study design frame, and qualitative and quantitative methods all have particular strengths and weakness. The relevant research

literature on these topics is described to greater depth in the chapter on methodology.

Research Questions

Within a pragmatic paradigm, different research methods have different strengths and weaknesses (Morgan, 2014). The goal is to choose a research design that is linked to the study purposes and procedures (Morgan, 2014). Two fundamental principles that drive the choice of research design for mixed methods, according to Morgan (2014) are prioritizing and sequencing. Prioritizing is determining which of the qualitative or quantitative methods has the key strengths to be the core method, and which one contributes supportive strength as the supplementary method. Sequencing is determining whether the supplementary method should be carried out before or after the core method (Morgan, 2014).The core method for the study was qualitative and the sequence of methods was a preliminary quantitative method followed by a qualitative method. This information is presented here so that the research questions listed below will be clear. More detail is given in Chapter Three, which outlines the methodology of the study.

The research questions are listed below. An AR study often begins with questions and methodology that are described by Dick (1993, 2002) as “fuzzy”. Each iteration of the study adds clarity and refinement to both questions and method until precision is reached and simultaneously adds to both rigor and responsiveness. “The question arises from the study” (Dick, 1993, p. 17).

The following research question guided this study: How do entering SOM Term 1 medical students’ perceptions of available time influence their help-seeking behavior regarding learning strategy resources at a Caribbean medical school? The purpose of the study was to explore if entering medical students’ perceived that they had enough

discretionary time available to seek help for an academic problem using the learning strategy resources at SGU.

Quantitative Research Questions

1. If entering SOM Term 1 students are experiencing an academic problem, how likely is it that they will seek help and from what source?
2. How does the intent to seek academic help by SOM Term 1 students match their actual help-seeking behavior using face-to-face, online, or both learning strategy types of resources?
3. Is there a difference in help-seeking behavior between SOM Term 1 male students and female students?

Qualitative Research Questions

1. How does SOM Term1 students' perception of available time influence their decisions to seek or not seek learning strategies help?
2. How do SOM Term 1 students make the decision to spend time seeking learning strategies resources help?

Significance of the Study

A search of the relevant research literature has indicated that there are no prior studies that have examined the relationship between entering medical students' perceptions of discretionary time and their help-seeking behavior in terms of using learning strategy resources within a medical school setting. Further exploration of the literature in higher education in general, and in professional school programs such as engineering, veterinary, and architecture where there is an expectation of a fast-paced learning environment with a high volume of content, also found no findings that reported

on similar relationships with discretionary time and help seeking as in this study. There is evidence in the literature of studies researching medical students, learning strategies, and SRL, but they focus on issues other than those in this study. For example, a longitudinal study of first-year medical students carried out by Fabry and Giesler (2012) investigating learning strategy use found that individuals arrived at medical school with different patterns of strategy use and that the patterns changed over the academic year. These authors did not look at whether students' perception of discretionary time was a factor.

Studies focusing on medical students use of time include a study by Covic et al. (2003) on undergraduate health sciences students immediately prior to graduation looking at their time-management strengths and weaknesses. These authors found time management to be a construct with multiple dimensions and suggested that intervention with a learning programme to address time management skill deficiencies might be useful. In this case the authors focused on time management, which is not the focus of this study.

One study of note by Salamonson, Everett, Koch, Wilson, and Davidson (2009) used a research instrument measuring motivation and learning strategies with first-year nursing and medical students and found higher levels of the self-regulated learning strategies of time management and help seeking in medical students. These authors focused on medical students and the self-regulated learning strategies help seeking and time but from a different perspective than students' perception of discretionary time.

This study informs learning strategies practice in both the face-to-face and online student support environments specifically for entering medical students and particularly in terms of increasing help-seeking behavior. Insights gained from this study have

already been used in real time to develop similar online learning strategy resources for the School of Veterinary Medicine (SVM) and also have the potential to inform the development of resources for other terms in the School of Medicine (SOM) as well as for students in the School of Arts and Sciences (SAS) at SGU. This research study may prove valuable to other medical university student support services. The research website was designed to address and solve a specific, local problem yet can potentially be applied to more programs at SGU as well as in online learning environments at other medical education facilities and in other learning contexts.

Terminology

This terminology section will introduce brief working definitions of the main constructs investigated in this study along with characteristics or variables of importance in the research questions. As many of these terms have developed over time from various schools of thought, further discussion will be included as part of the literature review in Chapter 2.

Academic Enhancement Program (AEP)

"The Academic Enhancement Program (AEP) is a year-long proactive retention initiative in SOM and SVM that comprises participation in small group review sessions and personal monitoring and advising. Participation is mandated by Admissions" (personal communication, March 15, 2017).

Course Management System

A course management system (CMS) is an educational collection of software tools that enable the instructor to create course content and post it on the Internet without having to use programming languages. A CMS includes options for administration such

as a class roster and a grade book. Teaching options that can be modified include quizzes, learning objects, and assignments while communications options include email tools, real-time chat tools, threaded discussion boards, and asynchronous bulletin boards. Other school databases can be integrated with the CMS (Janssen, 2015) .

Discretionary Time

The time not scheduled by St. George's University for mandatory academic activities that include classes, labs, small groups, and meetings for entering SOM Term 1 students.

Help Seeking

Help seeking is a meta-cognitive skill defined as "the ability to solicit help when needed, from a teacher, peer, textbook, manual, on-line help system, or the Internet" (Aleven, McLaren, Roll, & Koedinger, 2004, p. 102).

Learning

While there is no universal definition of learning, (Schunk, 2012) proposed a general definition that he felt was consistent with professional educators criteria. "Learning is an enduring change in behavior, or in the capacity to behave in a given fashion, which results from practice or other forms of experience" (p. 3).

Learning Strategies

In broad form, learning strategies are "a plan for accomplishing a learning goal that takes into account various internal and external conditions" (Snowman, McCowan, & Biehler, 2012, p. 297). There are many ways of categorizing learning strategies, which are dealt with in more detail in the literature review.

Lifelong Learning

Lifelong learning relates to formal, non-formal, and informal learning processes over the entire lifespan of the learner (Illeris, 2004).

Medical Students

The first two years of medical school are called the preclinical phase and focus on basic science courses that include gross anatomy, histology, biochemistry, physiology, behavioral science, and neuroscience, which are then followed by the abnormalities of human structure and function with courses in pathology, immunology, microbiology, and pharmacology. The clinical significance of the basic sciences is also stressed during these years with courses on physical examination and interviewing using standardized patients (Medicine Net, 2012).

Online Learning

Online learning is the "use of the Internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience" (Ally, 2004, p. 5). Online learning is commonly referred to by a number of terms that include "e-learning, Internet learning, distributed learning, networked learning, tele-learning, virtual learning, computer-assisted learning, web-based learning, and distance learning" (Ally, 2004, p. 4). Online learning will be the term used in this document.

Self-Directed Learning

According to Brockett and Hiemstra (1991) "self-direction in learning refers to both the external characteristics of an instructional process and the internal characteristics

of the learner, where the individual assumes primary responsibility for a learning experience" (p. 24).

Self-Regulated Learning

"Self-regulated learning (SRL) refers to an active and constructive process in which an individual is cognitively, motivationally, and behaviorally engaged in his/her own learning" (Cheng, Liang, & Tsai, 2013, p. 71).

Term 1

Term 1 of the preclinical phase at St. George's University (SGU) is one course made up of anatomy, biochemistry, physiology, nutrition, genetics, and histology totaling17 credit hours. For the purposes of this study, Term 1 students include students at the SGU campus who are new students to the SOM, but not students returning from a leave of absence (LOA), students who are repeating some coursework, nor students who have been reinstated after an appeal.

Usability

Usability focuses on three main areas:

1. Effectiveness - can users complete tasks, achieve goals with the product, i.e. do what they want to do?
2. Efficiency - how much effort do users require doing this? (Often measured in time)
3. Satisfaction – what do users think about the products ease of use? (UsabilityNet, 2006)

These terms will be used throughout this document as defined here. The organization of the paper and the conclusion to Chapter 1 follow.

Organization of the Remainder of the Paper

This dissertation consists of five chapters that begin with this introduction to the study. Chapter 2 consists of two parts, the theoretical framework for the study and a review of the relevant literature related to the problem outlined in Chapter 1. Chapter 3 describes the research methodology chosen to answer the research questions. Chapter 4 presents the mixed methods data analysis and reports the quantitative results and the qualitative findings; and finally, a summary and discussion of the quantitative and qualitative results, a discussion of the results in relation to the literature, limitations, implications for practice and recommendations for future practice and research, and the conclusion are given in Chapter 5. Several appendices include documents and images relevant to the study.

Summary

This chapter introduced the AR case study describing the background including the setting and context of the study. The goal of the study was to explore how entering Term 1 students perceived the contextual factor of time, especially discretionary time, and its relationship to help seeking regarding learning strategy resources at SGU in the medical school setting. The relationship of the statement of the problem, the rationale for and the nature of the study were explained. The research questions were defined and related to the significance of the study and relevant terminology was defined. The following chapter will describe the literature review for topics related to the study.

Chapter 2: Literature Review

This review begins by describing the contexts of medical education, online learning, student support services, learning strategies, and self-regulated learning strategies in order to provide the relevant scholarly background and theoretical basis for the problem and the research questions. In AR, the literature review is not a one-time event but is considered to be part of the cyclical and evolving nature of the research study. The potential of new data being generated increases the possibility that there will be new lines of inquiry to be explored. In this study, the literature review was revisited as a result of findings throughout the data collection and analysis process.

Using a flexible, responsive AR approach means that the researcher will not know precisely the direction the data will lead or what literature will become relevant during the course of the study (Dick, 2002). McMillan and Schumacher (2001) proposed a solution to this problem by suggesting the researcher carry out a broad, preliminary literature review structured within an initial research framework. Once initiated, the framework allows the focus to be on the relevant concepts developing in the data throughout collection and analysis. This preliminary literature review matures into an ongoing literature review as “the exact research focus and questions evolve as the research progresses” (McMillan & Schumacher, 2001, p. 134). The purpose of the study was to explore if entering medical students’ perceived they had enough discretionary time available to seek help for an academic problem using the learning strategy resources at SGU.

The literature review presented themes relevant to the study including lines of investigation of previous studies, historical developments, and descriptions and analyses

of studies that provide support or elucidation. The section on medical education describes the demanding academic rigor of medical school and the concurrent requirements for medical students to graduate with the skills to be self-regulated lifelong learners. In this vein, support for medical learner development is being encouraged through the introduction of new technologies and online innovations and research in medical education is an area of growth. Online learning related to medical students is described in the next section because of the development of the online learning strategy resources being undertaken by SGU.

The rest of the major themes move from a wider to a narrower focus – from student support services, to learning strategies, to self-regulated learning strategies, to self-regulated learning strategies, time and help seeking.

Medical Education

The location for the study is an international Caribbean medical school and the sample population comprises entering medical students. Medical education is therefore the natural place to begin the literature review establishing the background and nature of this topic in relation to the study and the research questions.

The start of first term in medical school, according to Pelley and Dalley (2008) requires a prompt adjustment to the immense volume of content material presented. Even as early as 1984, Russell et al. were pointing out that the volume of material from lectures and textbooks in medical school exceeded the ability of students to learn and integrate it. This has not changed as according to Dyrbye et al. (2005), one significant stressor for first-year medical students is the adaption to the substantially increased academic workload in a new and demanding learning environment.

A typical medical school approach to learning is to rely on didactic lectures as the mainstay of the curriculum and augment student experiences for learning with supervised practice, virtual and live labs, small groups, and supervised practice (Dyrbye et al., 2005). At the time of reporting in 2004, Stagnaro-Green found a preponderance of lecture format dominated curriculum delivery in undergraduate medical schools.

However, as Pelley and Dalley (2008) report many entering medical students struggle at the start of their medical education having difficulties adjusting to this different learning situation where their previous study strategies may not be effective. Medical students can experience serious studying difficulties (Coles, 1990) since the medical school environment is extremely distressful (Dyrbye et al., 2005; Firth, 1986; Stecker, 2004).

The Council on Graduate Medical Education (COGME) was tasked in the late 1990s to assess the U.S. physician workforce and report to the Department of Health and Human Services (DHHS) and Congress on various issues. The resulting 1999 COGME report focused on the clarification, development, and evaluation of new approaches to physician education. This report pointed out that medical practice in the previous decade had been confronted with rapid growth in technological and scientific knowledge and detailed the subsequent transformation of practice required in response to these medical advances (Council on Graduate Medical Education, 1999; Stagnaro-Green, 2004). Other reports agreed with this summary (D'eon & Crawford, 2005; Kim, 2006; WFME Executive Council, 2003) and pointed to a predicted continuation of the rapid pace of transformation related to these trends in the medical field. The area of concern for this study is the fast paced and continued evolution of medical education curricula.

The authors of the Council on Graduate Medical Education (1999) report assert that “innovative and creative programs are required to ensure that the preparation of physicians for the realities of future practice is based upon knowledge, skills, attitudes, and behaviors that reflect the highest professional standards and traditions” (p. 2). There has been a movement away from the more traditional approaches to teaching and learning and toward less established approaches using technology and the Internet. “Distance learning technology, standardized patients, clinical skills testing techniques and other educational advances are changing the way in which students and residents are educated and evaluated” (Council on Graduate Medical Education, 1999, p. 16).

Of the five main categories of changes identified by Stagnaro-Green (2004) in medical education in the 10 years prior to 2004, pertinent categories were the pedagogical changes relating to how medicine is taught and an increased awareness of how powerful the informal curriculum can be. These authors defined the informal curriculum as “what the student learns outside the formal classroom setting” (p. 80). One of the recommendations from this Thirteenth Report was that “medical schools and residency training programs should accelerate the incorporation of advanced educational concepts and techniques such as distance learning, standardized patients, and psychometrics in order to enhance the quality and consistency of educational programs” (Stagnaro-Green, 2004, p. xii).

Published in 2010, Anderson and Kanter's report on medical education in the United States and Canada included “an overview of the educational programs, infrastructure to support them, and the assessment strategies” (p. 52). The results from 128 participating Liaison Committee on Medical Education (LCME) accredited medical

schools presented snapshots that illustrated the significant and constantly evolving picture of medical student education since a previous report in 2000. Of note in the 2010 report were advances in pedagogy that included a noted decrease in lecture time, an increase in active learning with growth in team- and problem-based learning, and an increase in the use of technology. As new technological developments are being deployed in medical learning situations, Kim (2006) asks, “What specific contributions can technology make towards improving the quality of medical education?” (p. 2). Technology in medical education will be discussed in a later section in this chapter.

As introduced in Chapter 1, U.S. medical associations clearly state that self-directed, lifelong learning is a required curriculum outcome in graduates from medical schools (Stagnaro-Green, 2004). A similar and often conflated term, self-regulation, is used in the context of medical school curricula by Brydges and Butler (2012) who argued that self-regulation is “a central learning outcome” (p. 71). To complete the circle, Edelbring (2012) connects lifelong learning and self-regulation in the context of medical education. The conclusion is that graduates of medical school need to have the self-directed and self-regulated learning strategies and behaviors to be lifelong learners as physicians. Self-directed learning and self-regulated learning will be covered in greater detail later in this chapter.

Research in Medical Education

Despite a strong mission to train physicians, Stagnaro-Green (2004) reported that research and clinical care take priority over medical education. Nevertheless, there are some researchers focusing their efforts specifically on research in medical education. Of note, D’eon and Crawford (2005) undertook a study to look at identifying relevant

medical curriculum content because of the “explosion of knowledge in medicine” (p. 699) and the accompanying tough choices medical educators are faced with when determining how to cope with more to teach but less time to teach it in.

Students entering medical education face a challenging adjustment to the volume of content material and the pace of the content delivery. Medical associations and educators want students to graduate with the necessary skills to be self-regulated lifelong learners capable of practicing as successful physicians. This means that one area of growth for approaches to medical education includes the incorporation of online and technological experiences as a way to better support student academic success.

Online Learning

One of the ways online teaching and learning is expanding is “at traditional campus universities, where new media are used to enrich face-to-face teaching [and] increase flexibility” (Zawacki-Richter, 2004, p. 51). This is true for the medical school where this study was carried out. The learning strategies team at SGU looked at the opportunities new media, specifically online learning strategy resources, can provide to complement and enrich the current face-to-face resources, and increase the flexibility of options offered to medical students. Exploring effective ways to create and develop online learning strategy resources fosters self-directed learning and increases the flexibility of DES to meet the diverse learning needs of SGU students.

Distance education, with a history spanning well over one hundred years, basically references learning from a distance (Moore, Dickson-Deane, & Galyen, 2011). Early distance education was carried out in writing through the postal service and has drastically changed over time to embrace a wide variety of formats and tools that include

computers and the Internet. Online learning is one form of distance learning and has its own 45-year history beginning with the development of e-mail in 1971 and continuing with the expansion of computer networking in the mid-1970s (Harasim, 2000). Although online education shared the attributes of any place, any time with distance education, Harasim (2000) maintained that online education's distinction from distance education generally was its group communication affordances. Other major developments that allowed the expansion of online learning were the launch of the Internet in 1989 and the invention of the World Wide Web in 1992 (Harasim, 2000).

Another form of distance learning, e-learning, according to Moore et al. (2011) does not have a clear history in the literature but these authors did suggest e-learning originated in the 1980s along with online learning. While electronic learning, or e-learning, was defined by Rajapakse, Fernando, Rubasinghe, and Gurusinghe (2009) as "the use of computing and the Internet in education" (p. 452) issues arose because the four terms, distance education, e-learning, web-based learning, and online learning, were often used interchangeably in the literature (Moore et al., 2011; Tsai & Machado, 2002). Without clear definitions for these various terms, it was difficult for researchers to make comparisons between studies or build on previous studies (Moore et al., 2011).

This discussion is pertinent to this study in order to accurately describe which term is the most relevant and to define terms according to the way they are used in the literature. In this instance, online learning appears the best fit. As outlined by Moore et al. (2011), "online learning is described by most authors as access to learning experiences via the use of some technology" (p. 130). However, while Ally (2004) agreed there are several different terminologies used to describe online learning, he argued that a

definition of online learning needs to include both the learner and the learning process as well as the materials being delivered by the Web. His definition of online learning is the one used in this study:

> The use of the Internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience. (p. 5)

Other terms that have been used inconsistently and interchangeably to describe the online learning environment include a Learning Management System (LMS), a Course Management System (CMS), a Virtual Learning Environment (VLE), a Knowledge Management System (KMS), and an Online Learning Environment (OLE) (Moore et al., 2011). Rajapakse et al. (2009) argued that a VLE was "a computer-based software system designed to support teaching and learning in an educational setting" (p. 452). They further added that at "the core of a VLE is a Learning Management System (LMS), which is a collective term used to describe a set of well configured, regularly monitored and centrally managed software tools designed to handle user learning interventions" (p. 452). While the term used at the university involved in this study is CMS, the description of the LMS above more accurately depicts the current CMS.

Student Support Services

"Student support services" is a broad term that covers a wide range of activities in both the face-to-face and the online environment. An attempt to describe student support services by Dhillon, McGowan, and Wang (2006) included "personal and financial counselling, career guidance and support for students with disabilities" and with increased student diversity additional services added included study skills and subject

specific support (p. 1). Without regard to the learning context Brindley, Walti, and Zawacki-Richter (2008) defined learner support as

> all activities and elements in education that respond to a known learner or group of learners, and which are designed to assist in the cognitive, affective, and systemic realms of the learning process. The main institutional systems involved in learner support are teaching and tutoring, advising and counselling, and information and administrative. (p. 13)

Research carried out by Dhillon et al. (2006) concluded that the most important support services to university students were those that were directed toward meeting academic, emotional, and self-development needs. According to Abbott (2014) the term academic support

> may refer to a wide variety of instructional methods, educational services, or school resources provided to students in the effort to help them accelerate their learning progress, catch up with their peers, meet learning standards, or generally succeed in school (para. 1).

In a study by Hill, Lomas, and MacGregor (2003) to determine students' perceptions of the quality of their higher education experience, the most influential factors were student support systems and lecturer expertise. Further findings listed a student support unit as the top area of support "necessary for a quality educational experience" (p. 18).

As distance education courses and programs have been added to traditional campus based institutions with established student support services, the need for equally rigorous and effective online student support services has been identified (Kendall, 2007). Institutions have also recognized that they must serve several types of online students:

- traditional campus-based students taking online courses from their dorms and apartments along with their on-campus courses;
- nontraditional learners returning to school, taking online courses at a distance

from campus, often toward a degree; and
- professional students seeking upgrading or certification, taking both credit and non-credit courses at a distance. (Kendall, 2007, pp. 251-252)

In a review of U.S. and Canadian medical school academic support services, Saks and Karl (2004) found that over 95% of the schools surveyed reported "providing academic support to students in both the first and second years" (p. 2). These authors also found that 67.5% of medical schools in their study employed "designated individuals to provide academic support" but "only 21.8% of all the providers [were] trained in adult learning principles" (Saks & Karl, 2004, p. 2).

The Liaison Committee on Medical Education (2013) report included a section on Medical Student Services that mandated a medical education program have "an effective system of academic advising for medical students that integrates the efforts of faculty members, course directors, and student affairs officers with its counseling and tutorial services" (p. 19). Yet, the actual type and range of academic support services in medical institutions varies widely depending on the institution (Saks & Karl, 2004).

As Anderson (2004) delineated, the unlimited potential for new types of student services was the direct result of the opportunities created by a networked global learning environment. Information sources specific to online learners included human communication possibilities across multiple modes, and the added ability for "computational and inferential capacity to both human and non-human interaction" (p. 4). These new online contexts and opportunities have translated into new challenges for the learner support practitioners to adapt and develop in a timely way (Brindley et al., 2004).

A study of U.S. undergraduates in an online public health course by Lee, Srinivasan, Trail, Lewis, and Lopez (2011) found that "student perception of support

does affect overall course satisfaction" (p. 161). Their quantitative data was collected using a 5-point Likert scale Web-based survey and qualitative data was one open-ended survey item. Both were used to measure students' perceptions of and satisfaction with course support. These authors reported that the key elements identified by the students as necessary for satisfaction were a choice of types of support, adequate access to support, specific and constructive feedback, and immediate communication with the faculty (Lee et al., 2011).

Since "support for student learning is a key element in optimizing student learning experiences in any learning environment" (Lee et al., 2011), it has become increasingly imperative at SGU to provide effective online learning strategy resources for the wide diversity of students at SGU but most particularly for entering SOM Term 1 students.

Learning Strategies

"Learning strategies are immensely ambiguous phenomena and nothing is clear-cut about them" (Dörnyei, 2005, p. 162). Part of this confusion comes from inconsistent definitions of learning itself. Research by Alexander, Schallert, and Reynolds (2009) attempted to define the "complex but elusive" (p. 180) construct of learning. Their resulting definition was as follows:

> Learning is a multidimensional process that results in a relatively enduring change in a person or persons, and consequently how that person or persons will perceive the world and reciprocally respond to its affordances physically, psychologically, and socially. The process of learning has as its foundation the systemic, dynamic, and interactive relation between the nature of the learner and the object of the learning as ecologically situated in a given time and place as well as over time. (p. 186)

Learning strategies would then in broad terms be "the behaviors and thoughts that facilitate learning" (Weinstein, Ridley, Dahl, & Weber, 1988, p. 17). Examples described

by Weinstein et al. (1988) "range from simple study skills, such as underlining a main idea, to complex thought processes, such as using analogies to relate prior knowledge to new information (p. 17). However, as the history and development of learning strategies is described below, there has been continued controversy over definitions and characteristics. As argued by Gu (2011) issues pertaining to learning strategies revolve around the following:

> Practical questions from research and training continue to haunt theorists. e.g., Can knowledge be strategy? Are activities strategies? Are observable motor activities, as opposed to covert mental activities, strategies? Are strategies always under conscious control? What happens to the automated strategies? These questions, among others, have either been deliberately avoided or taken for granted in previous literature…the questions above are difficult to answer, because there are no defining boundaries to the learning strategy concept. (p. 335)

Both the terms "learning" and "strategies" carry ambiguity and complexity that are magnified when the terms are combined. The history and development of the term "learning strategies" within the relevant literature is discussed in the next section.

The History/Development of Learning Strategies

The history and development of learning strategies are nonlinear and multifaceted processes. Frank, Grossi, and Stanfield (2006) argued that F. P. Robinson published the first learning strategy in his 1946 book *Effective Study* detailing the SQ3R (Survey, Question, Read, Recite, and Review) method of note taking. Other types of practical strategies which applied to "note taking systems, study guides, and instructional frameworks" appeared in the late 1960s and early 1970s (Frank et al., 2006, p. 2). However, apart from these early strategies, two separate and distinct development paths began to take hold in the late 1970s. These were based upon cognitive psychology and second language learning (L2; Dörnyei, 2005; Frank et al., 2006).

In the 1970s, cognitive psychology's main thrust in learning research was exploring the relationship between prior knowledge and comprehension (Frank et al., 2006). By the 1980s educational psychologists, according to Zimmerman (2008) "such as Ann Brown, Joel Levin, Donald Meichenbaum, Michael Pressley, Dale Schunk, and others, focused on the impact of individual self-regulatory processes, such as strategy use, goal setting, imagery, or self-instruction" (p. 167).

Over a similar time frame, Dörnyei (2005) wrote that language learning strategies were introduced in the late 1970s but it was not until the 1980s that second language acquisition research in learning strategies began to develop independently of the psychology research in the areas of reading comprehension and problem solving (O'Malley & Chamot, 1995). Yet, despite major differences and little overlap, the commonality of the L2 research and educational psychology research fields according to O'Malley and Chamot (1995) was "an interest in the mental processes of experts compared with novices, and an undeniable paucity of theory to describe what strategies were or how they influenced learning" (p. 2).

In 1990, two separate taxonomies of language learning strategies (LLS) were published, one by Oxford, and a second by O'Malley and Chamot, but both had theoretical inconsistencies and validity issues (Dörnyei, 2005). Consequently, as reported by Rose (2012), a decline in language learning strategy research occurred in the mid-1990s because disagreement about how learning strategies were categorized and questionable research results.

As a result of the controversy, Rose pointed out that some LLS research "has been conducted under the umbrella of terms such as strategic learning and self-regulation,

which aim to distance themselves from the past problems of LLS research" (p. 137). During this time of uncertainty for the LLS researchers, the educational psychologists according to Dörnyei (2005) marginalized the term "learning strategy" and then essentially abandoned it in favor of the concept of self-regulation. However, some proponents of second language learning like Gu (2011), opposed the suggestion made by Dörnyei (2005) to throw away 40-years of learning strategy research and replace it with self-regulation. Gu (2011) asserted "that learning strategy is a prototypical rather than a categorical concept, and finding a prototypical core and mapping out dimensions of variation would be a practical solution" (p. 331) to the categorization problem.

Self-regulated learning research had a defining moment in 1986 when an inclusive definition of self-regulated learning (SRL) was the outcome of a symposium at the annual meeting of the American Educational Research Association (Zimmerman, 2008). SRL was defined "as the degree to which students are metacognitively, motivationally, and behaviorally active participants in their own learning process" (Zimmerman, 2008, p. 167). The development of SLR according to Boekaerts, Pintrich, and Zeidner (2005) has since become fragmented because of large bodies of domain-area specificity with a diversity of terms, labels, definitions, models, and journals. These authors wrote a handbook on SLR in 2005 to "contribute to the cross-area conversations that are necessary to foster the much needed clarification of the term self-regulation and related constructs" (p. 4). By 2011, Wolters, Benzon, and Arroyo-Giner wrote, "there is no single universal model used to understand SRL" (p. 311).

In the 1980s and early 1990s several SRL assessment instruments were developed including the Self-Regulated Learning Interview Scale (SRLIS) in 1986, the Learning

and Study Strategies Inventory (LASSI) in 1987, and the Motivated Strategies for Learning Questionnaire (MSLQ) in 1991 (Pintrich, 2004; Zimmerman, 2008). These instruments were designed to measure self-regulated learning strategies. The LASSI is "an 80-item self-report inventory of students' strategies for enhancing their study practices", the MSLQ is an 81-item self-report questionnaire measuring both learning strategies and motivation with several subsections, and the SRLIS presents six open-ended questions where written answers are coded into 14 self-regulatory categories based on motivation, metacognition, and behavior (Zimmerman, 2008).

In a seminal paper by Winne (1995) on SRL, self-regulated learners were portrayed as students "calling on a library of information and applying a suite of varied skills during studying activities in which achievements are forged" (p. 173). Further, Winne gave a description of what happens as these learners begin to study.

> They set goals for extending knowledge and sustaining motivation. They are aware of what they know, what they believe, and what the differences between these kinds of information imply for approaching tasks. They have a grasp of their motivation, are aware of their affect, and plan how to manage the interplay between these as they engage with a task. They also deliberate about small-grain tactics and overall strategies, selecting some instead of others based on predictions about how each is able to support progress toward chosen goals. (p. 173)

Winne's description of self-regulated learners' study behaviors is an ideal and as Nemati (2013) pointed out "strategies have to be learnt initially before they can be used to enhance learning" (p. 8). Not all students have managed to learn strategies about procedural knowledge and need direction in this area (Nemati, 2013), an area which includes learning strategy resources.

Self-Regulated Learning Strategies

Although there is no agreed upon definition of learning strategies, it is important to have some idea of what is meant by the term in order to continue the discussion. Weinstein, Husman, and Dierking (2005) maintain, “learning strategies include any thoughts, behaviors, beliefs, or emotions that facilitate the acquisition, understanding, or later transfer of new knowledge and skills” (p. 727). The teaching of learning strategies is not just about instructing students on how to be “good strategy users” but also to be proficient with “three kinds of knowledge about strategies: declarative, procedural, and conditional” (Weinstein et al., 2005, p. 727). Knowing about strategies is declarative knowledge, knowing how to use strategies is procedural knowledge, and knowing when or when not to use strategies is conditional knowledge (Weinstein et al., 2005).

Learners can regulate their motivation and affect using volitional control strategies including goal orientation and self-efficacy as well as coping strategies for negative affect issues like fear or anxiety (Pintrich, 2004). Behavior regulation “involves individuals’ attempts to control their own overt behavior” (Pintrich, 2004). Time management is an example of a behavior control activity in the domain of academic learning. Self-regulated learners and high achievers as reported by Zimmerman and Risemberg (1997) engage behavior regulation in a variety of activities associated with time management. Another behavioral regulatory learning strategy is help seeking. Researchers Newman (1998b), Zimmerman and Martinez-Pons (1986), and Ryan and Pintrich (1997) all found a relationship between help-seeking behaviors and high performing students. However, it must be noted that help seeking fits into two categories:

on an individual level it is a behavioral strategy but because help is obtained from others, help seeking is also a contextual control and regulatory process (Paul R. Pintrich, 2004).

The focus of this research study is the self-regulated learning strategy help seeking. A short history of research on information searching and help seeking is provided below.

Information Searching and Help Seeking

The terms help seeking, information seeking, and information searching have varied and sometimes overlapping definitions or characteristics in the research literature. In describing self-regulated learning strategies, Zimmerman and Martinez-Pons (1986) distinguished "seeking social assistance" from "seeking information". These authors described a dichotomy where help seeking was from social sources and information searching was from nonsocial sources. However, with the advent of electronic information systems, an issue raised by Keefer and Karabenick in 1998 was "whether increasingly sophisticated artificial assistance may force us to reconsider the definition of help seeking as necessarily including social agency (i.e., human intervention)" (p. 219). By 2009, Puustinen and Rouet maintained that information searching had drastically changed and the boundary as described by Zimmerman and Martinez-Pons (1986) had become blurred.

A later paper written by Puustinen and Rouet (2009) proposed "a more integrative theoretical framework that strives to account for a wide range of learning-related help-seeking and information-searching behaviors involving both human and non-human partners" (p. 1015). According to Puustinen and Rouet (2009) significant changes

developed in the technologies research domain concerning the type of help and the location of the helper. There were three main types of situations:

1. “the helper is human (e.g., a teacher) and is present when the students are using technology-enhanced learning environments”;
2. “the helper is a human expert communicating with the learner via learning technologies (e.g., a university lecture given by means of video conferencing, or a teacher providing answers to students' questions via email or a mobile phone);” and
3. “the human helper may be replaced by a built-in support tool or help system.” (p. 1016)

Of note, according to Puustinen and Rouet (2009), the three types were not mutually exclusive and two or more could be in operation in the same learning event. For this study, “the integrative theoretical framework” of help seeking as proposed by Puustinen and Rouet will be the focus of the discussion to follow: “Considering information searching as a subclass of help seeking” and creating a “continuum along which different help-seeking behaviors can be placed, depending on the helper’s capacity to adapt to student’s needs” (p. 1018).

Help Seeking

“Successful students regulate their learning” (Järvelä, 2011, p. 297). Help seeking, a self-regulated learning strategy (SRL) has been found to be an important regulatory behavior for students in order to successfully meet academic challenges. The literature on help seeking is robust and extensive and includes a developed theory supporting the facilitation of learning with SRL help-seeking strategy use (Järvelä, 2011). Lee (1997) described how clinical psychologists and educational psychologists have researched help-seeking behavior and indicated that both bodies of literature indicate proactively seeking help is crucial to problem solving and learning. When students encounter an academic challenge, the constructs involved to solve the problem include

metacognition (becoming aware of the need), motivation (deciding to seek help), and behavior (implementing, Nelson-Le Gall, 1981; Newman, 1994; Ryan & Pintrich, 1997).

There are many reasons for students to engage in help seeking: to improve academic performance (Järvelä, 2011), to gain information, skills, and expertise (Lee, 1997), to "develop interpersonal alliances" (Lee, 1997, p. 339), to maintain engagement (Newman, 2002), and "to cope with ambiguity and difficulty in the learning process" (Ryan et al., 1998, p. 532). Zimmerman and Schunk (2011) described the significant role help seeking takes in learning and emphasized the high level of self-regulation required. However, there are also costs involved in seeking help. One of these costs as described by Lee (1997) is the expenditure of time and effort to figure out the problem, to figure out the best source of help, and then to locate the appropriate help. Social costs also include acknowledging incompetence and dependence on someone else (Lee, 1997).

The development of help seeking in the literature. Early help-seeking research as described by Nelson-Le Gall (1985) characterized help seeking as a negative behavior to be avoided because of the risks and threats related to asking for help; it was viewed as a deficiency in development and as an indicator of dependence. Two influential models describing help seeking were the social-normative and self-esteem models that focused on "personal and sociocultural characteristics that are believed to moderate the perception of the costs of seeking help" (Nelson-Le Gall, 1985, p. 56). The social-normative perspective used sociocultural and demographic variables like age, gender, race, and social class to predict and explain help-seeking behavior within the prevailing social group (Nelson-Le Gall, 1985). Individuals were predicted to seek help based on how they internalized societal and cultural values and roles. However, Nelson-Le Gall (1985)

concluded help-seeking studies carried out to this point using social-normative variables had limited value because they were not carried out in cross-cultural environments and little was known about the "social norms related to help-seeking in educational settings" (p. 59).

The self-esteem model of help seeking focused on an individual's conceptions of the self with a request for help indicating an inability to cope and a resulting lowering of self-esteem (Nelson-Le Gall, 1985). The majority of the self-esteem research in relationship to help-seeking behavior investigated personal beliefs about "the self as an individual" and the decision to seek or not seek help (Nelson-Le Gall, 1985, p. 60). Limitations to this model included unproven assumptions about the relationships between achievement and self-esteem, research settings that did not match the students in educational systems, and methodological issues limiting generalizability (Nelson-Le Gall, 1985).

Much of the social-normative and self-esteem model research was carried out with adult subjects in non-educational setting with a focus on the relationship between internalized personal values and beliefs and the perception of the costs of seeking help (Nelson-Le Gall, 1985). Examples included the threat to self-esteem and embarrassment (Shapiro, 1978), self-image (Lee, 1997), acknowledging a lack of competence (Karabenick & Knapp, 1988), and appearing powerless (Lee, 1997). Most studies focused on costs, primarily threat to self-esteem and social embarrassment (Karabenick, 2003).

A reconceptualization of help-seeking proposed by Nelson-Le Gall (1981) was to shift away from a view of help-seeking as a stigmatizing negative behavior to "an active social-cognitive skill that is essential to learning and achievement" (p. 240). This shift

viewed help seeking as an adaptive alternative allowing a focus on “the cognitive-developmental and social-cognitive factors that influence help-seeking in learning contexts” (Nelson-Le Gall, 1981, p. 64). A key learning skill then for help-seekers is the ability to ask for, obtain, and then use the help provided as a problem-solving resource that is external to them (Nelson-Le Gall, 1985).

The distinction in adaptive help seeking investigated by Nelson-Le Gall (1981, 1985) was between instrumental or mastery-oriented help seeking and executive or dependency-oriented help seeking. Students using executive help seeking are looking for someone else to solve the problem for them while students implementing instrumental help-seeking are only looking for enough help to solve the problem on their own (Nelson-Le Gall, 1985). “In order for help-seeking to be both effective and instrumental, the individual must know enough to know what is not known, to know what could be known, and to have some reasonable ideas about where and how such knowledge might be gained” (Nelson-Le Gall, 1985, p. 70). Effective instrumental help-seeking skills enable learners to distinguish when they need help and allow for self-regulation in academic problem solving (Nelson-Le Gall, 1985).

The research of Nelson-Le Gall (1981, 1985) according to Newman (1998a) led the way for the further development of self-regulated adaptive help seeking in the classroom. Adaptive help seeking is considered to have cognitive and metacognitive components because of the self-reflection a self-regulated learner engages in when seeking (Newman, 1998a): it is “asking for the help needed in order to learn independently, not simply to obtain the correct answer” (Newman, 2002, p. 132). Newman’s earlier research (1991, 1994) focused on the first of two adaptive help seeking

components, a cognitive strategy, and later in 1998 on the second, a social-interactional process. Help seeking was viewed as help involving another person, and the research focused on the affective and motivational factors required for students in a classroom setting to engage in help seeking behavior (Newman, 1998a).

More recent changes in the help seeking literature include the evolution in definition that no longer requires help to be from a human source. According to Aleven et al. (2004) help seeking is "the ability to solicit help when needed from a teacher, peer, textbook, manual, on-line help system, or the Internet" (p. 227). This definition became important in the development of the prototype study of the current research (Appendix B) because learning strategy resources available to students seeking help in the face-to-face environment were predominantly human while the online resources were totally non-human and thus accessed only by information seeking. The goal of the researcher leading up to the prototype project was to develop online resources that were more than just information. The Learning Strategies Resource Website (LSRW) was created to offer online help and information to SOM Term 1 students and the prototype study looked at student satisfaction with the site after it was created. Other researchers have developed online resources such as intelligent tutoring systems (ITSs), computer-assisted instruction (CAI), and educational hypermedia systems (EHS) with the ability to provide non-human help in roles normally filled by humans in the traditional environment (Cheng & Tsai, 2011; Puustinen & Rouet, 2009) which was also the objective in the development of the LSRW, although in a simplified format. The human role being filled was that of the learning strategist, with a significant focus on the process of using learning strategies, not just information about learning strategies.

Other changes, as Järvelä noted in 2011, were that contextual influences within self-regulation research were beginning to be an area of consideration. New help-seeking methods, frameworks, and contexts indicated the influential role context was taking, particularly broadening from formal classroom settings to informal learning environments. New avenues according to Järvelä are showing potential for innovative areas of research in both SRL and help-seeking research that include help-seeking support in the form of intelligent tutoring, help-seeking hints, and motivational scaffolding.

Karabenick and Knapp (1991) recommended further research on the relationship between help seeking, need, and other learning strategies at the conclusion of their study. Building on that, this study investigated the relationship between help seeking and use of time where the learning strategy resources were delivered in a context that is less formal than a classroom environment but one that is not entirely informal.

Literature on not seeking help. Help seeking is a unique learning strategy according to Karabenick and Knapp (1991) because "its use is contingent on perceptions of inadequacy" (p. 225). In other words, the more a student uses other learning strategies effectively, the less likely that student will need to seek help. Karabenick and Knapp (1991) found that students using a variety of learning strategies were more likely to seek help if they determined it was necessary while those using fewer strategies sought help less even though they reported a greater need for academic assistance.

A study by Karabenick and Knapp (1988) with U.S. undergraduate students provided evidence for an inverted-U, curvilinear relationship between academic need and help seeking and also confirmed previous observations that indicated that students "who

need help the most are often the least likely to seek it" (p. 408). Ryan and Pintrich (1997) drew this same conclusion in a study on U.S. early adolescents looking at the relationship between math achievement and avoidance of help seeking. More specifically, Newman (1998a) stated "students who are thought to need help the most (i.e., students with low achievement who also have low self-perceptions of ability and low self-esteem) are the most reluctant to seek help" (p. 31).

Avoidance of help seeking researched by Ryan et al. (2001) was defined as "instances when students know that they need help but do not seek it" (p. 94) and was specific to adolescents and to the classroom setting. In this context, these authors proposed to add to the research that the need for help was perceived as a lack of competence by asking the question "what personal and contextual factors are related to competence concerns about help seeking and to avoidant help seeking behavior?" (p. 96). Their summary of the accumulated research on avoidance behavior associated with help seeking indicated that students were more likely to avoid seeking help if they felt academically or socially insecure about their abilities or if they focused on their social or academic reputation.

As Järvelä (2011) pointed out "if students need help but don't seek it, their performance will suffer because they miss an opportunity for an important social interaction with their teacher and peers in order to support their learning and achievement" (p. 298). There is a body of literature that indicates there is incongruence for some students between their need for help and their help seeking behavior.

Computer based studies. Interactive learning environments (ILEs) researchers (Aleven et al., 2004; Aleven, McLaren, Roll, & Koedinger, 2006; Aleven et al., 2003)

have studied students' use of on-demand help. Despite evidence that indicates that students' have better learning outcomes in ILEs when they engage in effective help seeking strategies, many learners do not make use of the help facilities ILEs offer (Aleven et al., 2003). The goal of the research by Aleven et al. (2003) was to design effective ILEs that resulted in students becoming better help-seekers by promoting self-regulated learning behaviors. After carrying out a selective review of literature on learning in ILEs and help seeking, these authors cautioned not to assume that empirical findings on help seeking in classroom or social contexts carry over into ILEs. They found scant research on how learners' prior knowledge of the technological system and the help functions offered influenced their help-seeking behavior. The researchers recommended exploring the potential of mental models for students in new learning environments that incorporate the help system with possible help strategies (Aleven et al., 2003).

A preliminary help-seeking model by Aleven et al. (2004) for a Help-Seeking Tutor Agent was designed and tested as an addition to the current intelligent tutor system, the Geometry Cognitive Tutor. The Geometry Cognitive Tutor was designed to provide on demand help as feedback to students (Aleven et al., 2004). Results indicated the researchers were on the right track with their algorithm design and a negative correlation was found between help-seeking errors and learning. Findings also confirmed earlier research that indicated students have poor help seeking behavior (Aleven et al., 2004). Building on this study, Aleven et al. (2006) refined the preliminary Help Tutor model and then conducted a pilot study involving four students. Preliminary results indicated that student meta-cognitive error rates decreased significantly using the Help Tutor by giving feedback on students' help-seeking behavior (Aleven et al., 2006). Despite the short time

for the pilot study and the small number of participants, the authors felt that there were positive results and impetus for further development of the help-seeking tool (Aleven et al., 2006).

Other research by Bartholomé et al. (2006) on ILEs looked at the effectiveness of help and the impact of learner-related factors confirming, “little is known about the interaction of help functions in ILEs and learning processes. To date most research on help-seeking is restricted to classroom learning settings” (p. 3). These authors completed a study with 74 German biology and pharmacology students about their epistemological beliefs, help seeking, and task performance (Bartholomé et al., 2006). The results indicated students increased their help seeking and had better performances when knowledge beliefs were unstructured and constructed (Bartholomé et al., 2006).

As reported by Cheng and Tsai (2011) there was scant research on help-seeking behavior outside of the classroom environment. Using university students, these researchers developed a self-report questionnaire focused on “help seeking through the Internet when [students] encounter academic problems (e.g., homework problem) in formal or informal learning situations (e.g., at school or home)” (p. 151). Cheng and Tsai considered online academic help seeking (OAHS) as “the spontaneous behavior of requesting assistance from others through the Internet” (p. 151) defining the parameters of help seeking to include searching for information or asking human experts for help. The Taiwanese study of 300 university students responded to the OAHS questionnaire designed to measure three help-seeking behaviors: information searching, and formal and informal queries. These authors reported little specific data on students’ perceptions

about OAHS and recommended further study to gain more insight using interviews or open-ended questionnaires (Cheng & Tsai, 2011).

In a further study, Schworm and Gruber (2012) investigated the use of instructional prompts by university students in a blended educational science course. These instructional prompts were written paragraphs giving information about effective help-seeking behavior and placed on the experimental groups virtual workspace (Schworm & Gruber, 2012). Results found that while the prompts enhanced learning and help seeking, they did not reduce the perceived help-seeking threat as intended (Schworm & Gruber, 2012).

Taplin et al. (2001) noted that the context in which distance education students seek help is differenc from that of the brick and mortar context. They investigated the nature of help seeking for distance education students in Hong Kong with students identified as either high achievers or low achievers (Taplin et al., 2001). Data was collected using questionnaires and telephone interviews with questions ranging from financial, to domestic, to course-related, to facilities, to interpersonal crises, to managing resources. They found no significant differences between help seeking by low and high achievers in the distance education context.

In a study comparing face-to-face undergraduate and graduate students with distance course students, Kitsantas and Chow (2007) reported more frequent help seeking in the students learning at a distance than those in the traditional environments. Kitsantas and Chow investigated 479 U.S. undergraduate and graduate students' preference for help seeking while enrolled in three different learning environments: traditional, web-enhanced, and distance learning. Data was collected via a personal data questionnaire, a

help-seeking preference survey, an academic self-efficacy scale, a students' perceptions of threat scale, and an assessment of achievement related and help-seeking tendencies scale (Kitsantas & Chow, 2007). Study results indicated that the students "preferred and perceived seeking help from electronic means as more effective than in person or by telephone" (Kitsantas & Chow, 2007, p. 394). Students also reported feeling less threatened when seeking help electronically.

Medical students and help seeking. Help seeking as defined by Nelson-Le Gall (1985) "is seen as a social behavior grounded in the prevailing values and role structures of a given social group or culture" (p. 58). Medical school has its own strong, prevailing culture (Mann, 2011). At the time of writing in 1985, Nelson-Le Gall pointed out how little was known about "the social norms related to help-seeking in educational settings" (p. 59). Since then, the literature shows scant research available that is related to help seeking in medical educational settings. What is available in the medical education literature in relationship to help seeking is described below.

In a qualitative study with fifth-year medical students in Scotland, Cleland et al. (2005) reported on students who failed their final clinical examinations and found that many did not seek help. One conclusion of note was that students did not connect their current poor performance with earlier difficulties in prior terms but saw them as isolated events (Cleland et al., 2005). The recommendations made by Cleland et al. (2005) were the provision of support to students on how to develop self-reflection skills that lead to lifelong learning and early, specific feedback on learning deficits.

In a study of second- and third-year medical students at the University of Dundee Medical School, Malik (2000) found that 50% of the students in the study who failed also

failed to seek help from any source. Failing students from the other half of the group sought help from their peers or friends two to one over lecturers and tutors (Malik, 2000).

A group of researchers at a U.S. medical school ran a pilot study with 13 first-year medical students because they noticed a number of entering students struggling to adjust to the high demands of the curriculum (DeVoe et al., 2007). These authors developed a preemptive intervention after recognizing the entering students had poor assessments of their academic abilities and were afraid to seek help. DeVoe et al. (2007) found no significant difference between the intervention group and the non-intervention group with exam scores but did conclude that future emphasis on study groups needed to be on how-to-learn strategies and not just content.

The study by Stegers-Jager, Cohen-Schotanus, Splinter, and Themmen (2011) assessed the relationship over the first two years of medical school between the implementation of an academic dismissal policy and improvement of student progress. These researchers described an academic dismissal policy designed to encourage students to be more efficient with their study time and to make use of academic interventions if identified as experiencing academic difficulty (Stegers-Jager et al., 2011). The results indicated a modest impact of the academic dismissal policy on student dropout rates and on optimum performance. However, there were positive results "for the help-seeking behavior of struggling students: the possibility of AD [academic dismissal policy] increased participation in the study support offered from 40% to almost 70%, and participants more often completed their Year 1 programme on time" (Stegers-Jager et al., 2011, p. 922).

Ball and Bax (2002) researched first-year medical students' emotional and academic adjustments in sleep, alcohol, and exercise and found that despite self-reported difficulties adjusting, many students chose not to seek services that offered help. The focus of their study was on medical students long-term and acute stressors. The researchers found two acute stressors that are related to this study: the rapid changes first-year students faced and the learning strategies they arrived with from their undergraduate programs not being rigorous enough for demanding courses in first-year medical school (Ball & Bax, 2002). Also, one of the contributing factors to the disruption of students' health habits was the stressful structure of the medical education they were enrolled in (Ball & Bax, 2002).

Gender and help seeking. Most studies on help seeking that measured gender as a variable found a gender bias: women were more likely to seek help than men (Cohen, 1999; Lee, 1997). A study by Ryan et al. (1997) indicated there were gender differences in self-reported help-seeking avoidance with females reporting lower levels than males. However, these findings did not agree with Ryan and Pintrich (1997) who found no gender differences in help-seeking. Consequently, the relationship between help seeking and gender may not be as simple as first thought. A literature review by Aleven et al. (2003) noted limited research on gender differences in help seeking in technology-based learning environments but the authors suggest that there are gender differences that are domain specific and so it may be interest dependent. They also suggest researching gender as a moderating rather than an independent variable between factors such as interest, self-confidence, and attitudes and help-seeking behavior (Aleven et al., 2003).

Help-seeking instruments. Several different instruments designed specifically to measure some component of help-seeking behavior will be described below. An instrument created by Cohen (1999) was designed to measure the willingness of an individual to seek help. This Likert-formatted questionnaire was

> based on the theoretical perspective of Alan Keith-Lucas, who perceived the willingness of a person to seek help as contingent on three conditions: recognition of the need for outside assistance, readiness for self-disclosure, and willingness to relinquish some degree of control to a helper. (Cohen, 1999)

Cohen's initial study tested the willingness-to-seek-help instrument on 71 undergraduate seniors at an Israeli university and found statistically significant results only with the variable of gender (1999). The author also noted that cultural differences between the participants in the U.S., where the theory developed and those in the Israeli setting, along with the small sample size, may have impacted the study results. This instrument was considered but not chosen for the current study because none of the items on the questionnaire related to academics.

In the educational environment, one of the instruments designed to measure self-regulated learning behavior is the with a specific help-seeking behavior subscale (Pintrich, 2004; Zimmerman, 2008). However, one major limitation of the MSLQ is that it was designed to assess motivational and learning strategies in the context of a specific course, which is not the situation in this study.

The General Help-Seeking Questionnaire (GHSQ). The General Help-Seeking Questionnaire (GHSQ) was developed in Australia to measure help-seeking intentions. Deane and Wilson (2007) indicated that help-seeking intentions can vary by context and the two types of context in particular are problem-type and help-sources; as the context

changes, there will be variation in problem-types and help-sources (Deane & Wilson, 2007). The advantage according to Deane and Wilson (2007) is that

> you make your measure more relevant to the particular context and the research questions you are exploring. The disadvantage is that you get some variation between studies in the types of problems and help sources, which limits comparisons across studies. (p. 2)

The GHSQ was used with187 Israeli parents of adolescents to understand their behavior in seeking help from potential sources for a variety of hypothetical problems related to parenting (Raviv, Maddy-Weitzman, & Raviv, 1992). Results of the study found intention to seek help was “a function of both the particular problem type and the potential source of help” (Raviv et al., 1992, p. 115). The questionnaire construct measured nine sources of help and eight hypothetical child-rearing scenarios (Raviv et al., 1992).

The GHSQ was also one of the instruments used by Deane, Skogstad, and Williams (1999) to measure intentions of New Zealand male prisoners to seek professional psychological help. A 9-point Likert scale was used for one question about seeking help for “personal-emotional problem” and one for “suicidal thoughts” (Deane et al., 1999). Despite a small sample size, Deane et al. (1999) indicated that more favorable attitudes toward professional psychological help-seeking were associated with an increase in intention to seek help.

Although no studies on intentions to seek help were found in the educational literature that used the GHSQ, Deane and Wilson (2007) maintain, “the GHSQ uses a matrix format that can be modified according to purpose and need. Within this format, help sources and problem-types can be modified to meet sample characteristics and study

requirements" (p. 18). The GHSQ was used to measure help-seeking intentions of entering medical students in the study. The modified help sources and problem-types are listed in Appendix A.

Time

Time is a complex and multidimensional construct (Macan, Shahani, Dipboye, & Phillips, 1990), always a limited resource (Britton & Tesser, 1991), and "the perception of the passage of that time is a subjective process" (Chinchanachokchai, Duff, & Sar, 2015, p. 187). As early as 1970, Piaget complained that while there was the formal theory of geometry for the study of space, there was not a similar one for the study of time (Riegle, 1977). While there is no one formal theory of time, there are a variety of theories about different aspects of time including time management, the perception of time, time allocation, and learning time.

Time management is a significant construct in academics because time is limited and was described by Claessens, van Eerde, Rutte, and Roe, (2007) as "behaviours that aim at achieving an effective use of time while performing certain goal-directed activities" (p. 262). Further, time management has been described as a self-regulated learning strategy that includes scheduling and planning (Chen, 2002; Terry & Doolittle, 2006). Notwithstanding some research offshoots about time, much of the literature on time management is about the development, use, or critique of self-report instruments and scales to measure aspects of time management (Azar & Zafar, 2013).

A second area of research on time is time perception, which "refers to a person's subjective experience of the passage of time, or the perceived duration of events, which

can differ significantly between different individuals and/or in different circumstances" (Alvele, 2017, para. 1).

Time allocation refers to a "student's time allocation over study related activities for the acquisition of generic and discipline-specific competencies" (Meng & Heijke, 2005). The allocation of time by a student can be an indicator of self-directed learning (Gruppen, White, Fitzgerald, Grum, & Woolliscroft, 2000) and has a high degree of individual variation.

A key environmental variable from a behaviorist perspective on learning is learning time (Schunk, 2012). Time in this instance means "academically engaged time, or time spent paying attention to trying to learn" (p. 105). Learning time is composed of two elements: time allowed or available for learning and time the learner actually spends on learning (Schunk, 2012). From a medical students' point of view, time available for learning outside the classroom would be considered part of discretionary time as would the time they actually spend on learning. Both are in short supply and have to be managed judiciously.

Medical students need to be able to make the best use of their time in order to be successful in medical school (Covic et al., 2003), particularly the discretionary time they have direct control over. Although there may be some similarities within the concepts of time management, time perception, time allocation, and learning time, the focus of the study was on the students' perceptions and beliefs about discretionary time in relation to seeking help for academic problems.

Time Summary

In summary, there is little research on students' perceptions of discretionary time, particularly of entering medical students. Likewise, there is scant literature discussing how students' perception of availability of discretionary time influences their help-seeking behavior.

Summary

This literature review focused on providing an overview of the relevant theoretical and empirical studies that informed, focused, and inspired this study. Research on medical school education, online learning, and student support services reveal a body of evidence supporting connections between these elements. The literature on learning strategies reveals a long but controversial history that culminates in the current self-regulated learning strategy research, which is focused specifically on help-seeking self-regulated learning strategies. However, there were no studies on the relationship between help seeking and discretionary time with medical students. This appears to be an area that the study could expand upon.

The methodology of the action research case study using a mixed methods data collection will be described in the following chapter. The design of the study procedures will be presented illustrating how they were used to answer the research questions that guided the study. The assumptions and limitations of the study will be explained and the research timeline will be presented.

Chapter 3: Methodology

This methodology chapter describes the design of the case study drawing on a mixed methods approach to data collection for the practitioner action research case study. This is followed by an explanation of how the study procedures were designed to answer the quantitative and qualitative research questions that guide this study. A summary of the prototype study describes how early findings relate to this study. Finally, the limits of and constraints to this research design are highlighted. This action research case study within a pragmatic paradigm sought to explore if entering medical students' perceived they had enough discretionary time available to seek help for an academic problem using the learning strategy resources. This chapter describes the theoretical framework, the methodology and the methods projected to solve the problem being studied, and to answer the research questions.

Theoretical Framework

"I want to emphasize that your conceptual context is a theory, what is sometimes called the theoretical framework for the study" (Maxwell, 2013, p. 25). The theoretical framework of the study begins with a discussion of the term "paradigm" that leads into a description of the fitness of pragmatism for the study.

Paradigm and Pragmatism

Worldview in a research context comprises what the person carrying out the research believes about the nature of research (Morgan, 2007). These beliefs can be codified within a research paradigm; however, the term paradigm can have multiple and ambiguous meanings. Contrasting statements by Guba and Lincoln (1994) in the same chapter of the *Handbook on Qualitative Research* indicate how difficult the match is

between the abstract philosophical assumptions underlying paradigms and the practical, in-the-field decisions by researchers. In a footnote, Guba and Lincoln comment,

> It is unlikely that a practitioner of any paradigm would agree that our summaries closely describe what he or she thinks or does. Workaday scientists rarely have either the time or the inclination to assess what they do in philosophical terms. (p. 117)

The final sentence of the same chapter says, "paradigm issues are crucial; no inquirer, we maintain, ought to go about the business of inquiry without being clear about just what paradigm informs and guides his or her approach" (p. 116).

This juxtaposition aptly describes my current situation, as a full-time learning strategist where in the day-to-day there is no time to think in philosophical terms or about paradigms; the day is filled with the practical application of relating to students as a strategist. However, stepping into the role of a researcher after work, the time has to be taken to research, reflect, and articulate the worldview that guides and directs the approach to this study.

Thomas Kuhn is credited with popularizing the construct of paradigm in the 1960s "as a way to summarize researchers' beliefs about their efforts to create knowledge" (Morgan, 2007, p. 50). Morgan (2007) categorized the four most common social sciences versions of paradigm into increasing levels of specificity as 1) worldviews, 2) epistemological stances, 3) shared beliefs among members of a specialty area, and 4) model examples of research. I chose Morgan's first level of specificity, paradigm as a worldview for this study. According to Knight (2002) "a pragmatic position holds that realism is a fair description of some aspects of the world and say the rest is observer relative" (p. 26).

As a philosophy, pragmatism was a development in the late nineteenth century in the United States with the first detailed summary published by psychologist William James in 1907 (Morgan, 2014). Morgan (2014) described John Dewey (education and philosophy), George Herbert Mead (symbolic interactionism), and Charles S. Peirce (philosophy) as significant leaders in the development of pragmatism. However, as Maxcy (2003) pointed out "American pragmatism did not emerge from nothing" (p. 54). European and British philosophical influences included "post-Kantian thought, British empiricism, utilitarianism, biological evolutionary theory, the new realism, Descartes's ideas, and the philosophies of Kant and Hegel" (p. 54). These early pragmatists "dealt with the problem of inquiry and the need to establish a posture toward knowing which path to take in a problematic situation" (Maxcy, 2003, p. 56).

Pragmatism as defined by Morgan (2014) is "a philosophy in which the meaning of actions and beliefs is found in their consequences" (p. 26) and pragmatism's four shared elements are as follows:

1. Actions cannot "be separated from past experiences and the beliefs that have arisen from those experiences";
2. Actions cannot "be separated from the situations and contexts in which they occur";
3. Actions "are linked to consequences in ways that are open to change"; and
4. Actions "depend on worldviews that are socially shared sets of beliefs". (pp. 26-27)

The leaders Dewey, Pierce, and Mead did not prescribe research methods, however the four characteristics above each resonate with methods that focus on socially shared knowledge, that operate in the real world where consequences of action are observed. This unique philosophical worldview emphasizes the nature of experience and the outcomes of action by examining shared beliefs and Morgan (2014) argued, "pragmatism

provides a paradigm for studying social science research in general and mixed methods research in particular" (p. 37).

The pragmatic approach to research developed by Morgan (2014) was built on John Dewey's concept of inquiry, which linked actions and beliefs through reflection. Morgan modified Dewey's general model of inquiry into a research model of inquiry by adding a set of feedback loops that allowed for a more complex decision-making process (see Figure 1). Dewey's "doubly reflective" Five-Stage Inquiry Model is shown in Figure 1 along with Morgan's version of Dewey's model displaying what he referred to as "a kind of if-then formulation" (Morgan, 2014, p. 29) or abduction, moving from identifying a problem, to a suggested solution, and then to the action in a research study context. This cycle is very similar to the cycle for action research discussed later in this chapter.

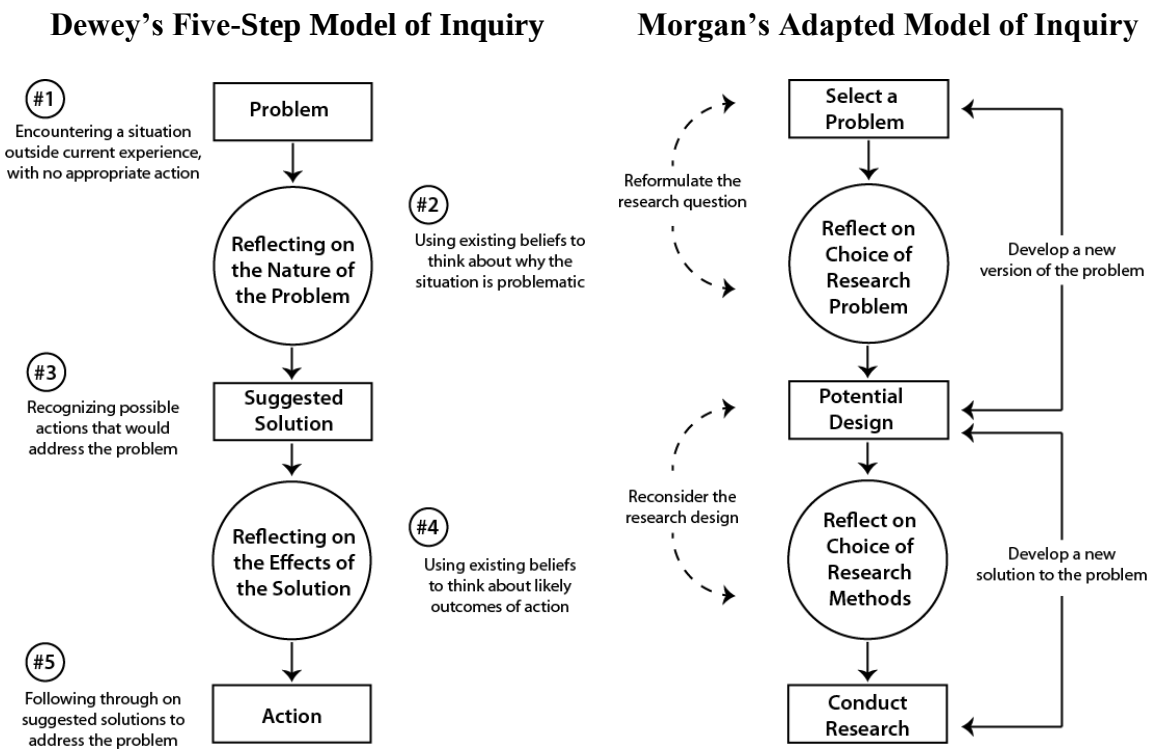


Figure 1. Dewey's Five-Step Model of Inquiry and Morgan's Adapted Model of Inquiry. Adapted from "*Integrating Qualitative & Quantitative Methods: A Pragmatic Approach*," by D. L. Morgan, 2014, Thousand Oaks, CA: SAGE, p. 30 & 33.

Within the educational technology research literature, Luo's (2011) stated ontological assumptions for pragmatism were that “truth and reality is contemporary, ever-changing and a matter of degree, determined by its real effects and practical consequences” and his epistemological assumptions were that “knowledge is essentially a plan of action, and proposes practical ends to be attained. Pragmatism emphasizes the genetic and instrumental character of knowledge” (p. 5). Pragmatists believe in the changing nature of truth, “a thing which is true to an individual at a specific time, place and situation, need not be true to others or to anyone else at some other place or time” (Shrivastava, 2003, p. 168). Luo (2011) agreed, stating pragmatism “views truth as contemporary, ever-changing and a matter of degree” (p. 4).

In the context of information systems, Baskerville and Myers (2004) maintained that pragmatism was the underlying philosophy for action research (AR) in most of its forms.

Table 2.

Four Key Action Research Premises Arising from Pragmatist Philosophy

Researcher	Tenet
1. Peirce’s tenet	“All human concepts are defined by their consequences”
2. James’ tenet	“Truth is embodied in practical outcome”
3. Dewey’s logic of controlled inquiry	“Rational thought is interspersed with action”
4. Mead’s tenet	“Human action is contextualized socially, and human conceptualization is also a social reflection”

Note. Adapted from “Special Issue on Action Research in Information Systems: Making IS Research Relevant to Practice: Foreword,” by R. Baskerville and M. D. Myers, 2004, *MIS Quarterly*, *28*(3), p. 231.

These authors described four key premises for AR built on a pragmatic philosophy, each tied to a preeminent researcher (see Table 2).

Action Based Research

This research study methodology as described in Chapter 1 is action research (AR). There is a wide diversity within social science in what Reason and Bradbury (2001) termed the "action research family" (p. xxiv) that stems from different traditions, philosophies, psychological assumptions, and political agendas. This has raised important and occasionally contradictory research issues since there is no unifying theory across the AR family (Cassell & Johnson, 2006). Thus, the onus is on the researcher to clarify these terms within the theoretical research framework of the study.

As an introduction to AR, Carr and Kemmis (1986) describe action research as being about:

- the improvement of *practice*;
- the improvement of the *understanding* of practice by its practitioners; and
- the improvement of the *situation* in which the practice takes place. (p. 165)

The key according to McKernan (1996) is that AR rests on three pillars:

> First, that naturalistic settings are best studied and researched by those participants experiencing the problem; second, that behavior is highly influenced by the surroundings in which it occurs; and third, that qualitative methodologies are best suited for researching naturalistic settings. (p. 5)

In this context, this means the teacher functions as the researcher, behavior must be studied in situ, and at minimum, qualitative methodologies must be involved (though generally not precluding mixed methods) in the research. The uniqueness of AR as stated by Altrichter, Kemmis, McTaggart, and Zuber-Skerritt (2002) is that it "is enquiry with people, rather than research on people" (p. 130). This research study is designed upon these three pillars and on the premise of collaborative enquiry with people as will be described below.

Despite general agreement on these underlying characteristics, there is no definitive, universal definition of AR. With qualified comments Altrichter et al. (2002) gave two sources of definition as “both useful and sufficiently general to avoid contention” (p. 131). Action research is described by one source (Dick, 1993) as a family of research methodologies, which pursue action (or change) and research (or understanding) at the same time. In most of its forms it does this by action and critical reflection and in the later cycles, continuously refining methods, data and interpretation in the light of the understanding developed in the earlier cycles. Another source Zuber-Skerritt (1992) generalized on the forms of AR that have evolved:

> All adopt a methodical, interactive approach embracing problem identification, action planning, implementation, evaluation, and reflection. The insights gained from the initial cycle feed into planning of the second cycle, for which the action plan is modified and the research process repeated. (as cited in Altrichter et al., 2002, p. 131)

Despite lack of agreement about a definition, there is a long and well-documented research tradition for AR and key examples are summarized below.

Action Research Tradition

A review of educational action research between 1944 and 1992 by King and Lonniquist (1992) credited the social psychologist Kurt Lewin for coining the phrase “action research” in 1946. However, as argued by McKernan (1996) Lewin was not the first to write about AR but rather Lewin’s significant contribution was that “he did construct an elaborate theory and made action research ‘respectable’ inquiry for social scientists” (p. 9). Even at this early stage in the development of American AR there was a lack of agreement about Lewin’s philosophical stance, with Cassell and Johnson (2006) arguing for a positivist approach, and Eden and Huxham (1996) an interpretist approach.

Early on in the United States of America (U.S.), the AR process emulated the traditional social science research methods. However, AR incorporated a new and distinguishing characteristic with the inclusion and involvement of non-researchers from the community as collaborators into the research process (King & Lonniquist, 1992). Within the field of education in the 1950s, the Columbia Teachers College promoted action research by building on Lewin's earlier social psychology research from the 1940s (Anderson, Herr, & Nihle, 2007). AR peaked in popularity in the 1950s but interest declined in the 1960s and then took off again in the 1970s with Lawrence Stenhouse's research on the teacher as the researcher (Anderson et al., 2007; Peker, 2006). Donald Schön's 1983 book *The Reflective Practitioner* was also instrumental in stimulating the emergence of practitioner-centered action research (King & Lonniquist, 1992). According to Anderson et al. (2007) different disciplines used variations of the term "action research" with the most common being "action science, participatory action research (PAR), community-based action research, cooperative inquiry, self-study, emancipatory praxis, autoethnography, and as is more commonly the case in education, teacher, practitioner, or action researcher" (p. 1).

The design, development, and evolution of schools indicate that some form of practitioner research has always been going on yet this form of action research has a relatively short history in the education literature (Anderson et al., 2007). According to Anderson et al. (2007) there are four intellectual traditions of practitioner research developed from various positions: action research tradition, teacher-as-researcher movement (United Kingdom), participatory action research, and teacher researcher movement (North America).

The teacher-as-researcher movement in Great Britain began with Lawrence Stenhouse and was furthered by John Elliott and Clem Adelman (Peker, 2006). The teacher researcher movement in North America was not derived directly from any other movement and occurred later than in the United Kingdom in response to circumstances including the legitimacy and availability of qualitative research choices, school contexts encouraging collaborative research projects, and the reclamation of the validity of teacher practice (Anderson et al., 2007).

In the 1970s and 1980s politics and ideology came together in action research in two forms: participatory action research (PAR) and action research as critical praxis (Cohen, Manion, & Morrison, 2011). PAR as described by Cohen et al. (2011) advocated both empowerment and emancipation. In Latin America, Paolo Freire and Carlos Torres initiated a different type of action research based on combining research, education, and social action (Anderson et al., 2007; Peker, 2006). The distinguishing features of PAR according to Cohen et al. (2011) are its methodology based on collective participation, its outcomes of democracy and emancipation, and its areas of focus on the inequalities of power and agendas for change arising from grassroots members. PAR is “people acting and researching on, by, with and for themselves” (Cohen et al., 2011, p. 349).

Action research as discriminating praxis drew on the Frankfurt School of critical theory and the work of Jürgen Habermas (Cohen et al., 2011). The theory of three knowledge-constitutive interests by Habermas in 1972 was built on his technical interest, hermeneutic interest, and emancipatory interest and his “work underpins and informs much curriculum theory” (Cohen et al., 2011, p. 36). Both PAR and critical praxis combined a two-way relational collaborative research with intent to take action.

Prior to the 1990s as argued by McNiff (2002), an action research report would have easily been identified as such but since that time there is no single set of defining principles or clarity of perspectives within the AR family. Although often contested, three main tenets have endured and are outlined by McNiff as:

- AR nature: Is still about change and improvement and also still seen as participative but there are different views of ‘change’ and ‘improvement’ and of levels of participation.
- AR origins: Asks questions like is ‘change’ a property of the individual? Is change carried out intentionally or imposed?
- AR uses: Is AR “a technique, strategy or methodology to be developed as part of change processes”, or is it “a tool or technique to be applied to practices in order to change them? Is it a ‘change strategy’, or a process of change itself?” (p. 54)

However, as McNiff has indicated above, at present there may be the three constants of nature, origin, and use but there remain many questions and this has led to various theoretical expressions and approaches to AR under the action research family umbrella. The section below will describe Dick's (2002) approach to AR, which I think provides the best fit for the current study.

Dick’s (2002) AR Example

Dick's (2002) basis for AR is that action and critical reflection alternate within a cyclical or spiral process where “action takes the form of change, improvement or implementation in one’s workplace” (p. 160). According to Dick, three crucial choices face the researcher: 1. Is the research study theory driven or data driven? 2. Is the researcher a technician or a performing artist? and 3. Is the emphasis “*action* research” or “action *research*”? (emphasis on action in the first instance versus emphasis on research in the second). In order to answer these questions it is necessary to understand the contrasting distinctions.

Question one asks if a body of literature and the researcher's agenda drive the study (theory driven) or if the data collected from the people in the research situation drive the study (data driven). Question two inquires whether the researcher apprentices a particular research approach from content experts (technician) or engages in questioning inquiry learning from experience and from experts acting as a mentor (performing artist). The last question looks at the difference that emphasizing "action" or "research" brings to the researcher's study approach: Action-oriented research answers the question "Is your main intention to bring about change, with research outcomes as a desired but forsakeable bonus?" (Dick, 2002, p. 162). Research-oriented research will answer the question "Do you desire above all to do good research, with change as a hoped-for but not essential outcome?" (Dick, 2002, p. 162).

The reason for choosing an action-based research project in the first place was to solve a local problem and bring about change. Notwithstanding the integration of this study as a component of a doctoral degree, the priority was to improve the situation being explored in the study. Dick (2002) does explain that the two choices are not mutually exclusive and better understanding at all levels of the study allow for more effective changes. Therefore, based on answering these three questions, the research study will be a data-driven, performing artist, action-oriented research study.

There are clear implications outlined by Dick (2002) in using data-driven AR including what the researcher needs to be aware of and prepared for. The first implication is that when using "a flexible and responsive approach [the researcher] cannot know where the data will lead" (Dick, 2002, p. 161). As a result, the relevance of the preliminary literature search may change over the course of the study and additional

literature reading and insights may be required. The second implication is that the research methodology may also emerge and change as the study proceeds. In Dick's (2002) colloquial phrasing “You can begin action research by asking initially fuzzy questions using initially fuzzy methods, thereby gaining initially fuzzy answers. You may then use those initially fuzzy answers to refine your methods as your proceed” (p. 161). This means that both the process of the research study and what is being studied develop and evolve over time.

The art of carrying out research derives from how the researcher engages with the literature, the methodology, and the supervisory advisor and/or committee (Dick, 2002). I have been focused on aspects of the research problem for many years but until enrolling in a scholarly program, it has been from a mainly experiential perspective with some support from learning theory. According to Zuber-Skerritt and Fletcher (2007) action researchers must not only meet scholarly research standards but must also demonstrate the requirements specific to AR. These include the following:

> Explaining and justifying the action research paradigm (plural ways of knowing), appropriate methodologies, their choice and use of qualitative research methods, different standards of ethics and values, and evidence of learning, reflection and a contribution to knowledge in both theory and practice. (p. 414)

Evidence of learning and reflection has already been exhibited with the research, analysis, and synthesis comprising this preliminary literature review and the development of study using the action research case study paradigm. It was also evident in the changes in my daily practice as a result of partaking in the scholarly activity of the Ed D., of immersion in the academic literature, and of insights gained from the practical pursuit of the research activity itself. This process has continued to evolve as the iterative action cycle has moved forward providing continued opportunities for learning and reflection

within a scholarly environment that includes the supervisory committee. This study was designed in such a way as to engender input from the committee members' academic expertise and practical expertise from the collaborative learning strategies team in the study context, DES. Further critical reflection may result in methodological insights that can be fed back into the research community. The final defense of this study will detail the proposed contribution to knowledge in both theory and practice.

Relevant Models of AR

AR has developed a wide variety of types and models that are designed to scaffold the researcher. Describing them all is beyond the scope of this review and this section will focus on the development of Lewin's early model and two later models.

Action research is noted for its critical reflection and cycling back to previous stages during the research study (Dick, 2002). Lewin is credited for an early model that many others have adapted over time that is a spiral of steps beginning with planning, reconnaissance (or fact-finding), and execution (McNiff, 2002; see Figure 2).

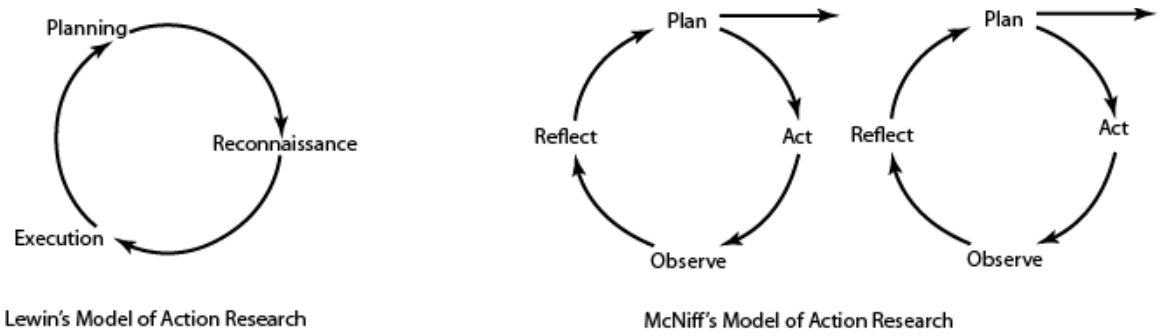


Figure 2. McNiff's model of action research. Adapted from "*Action Research: Principles and Practice*," by J. McNiff, 2013, (3rd ed.) New York, NY: Routledge. p 56.

McNiff's model, which became known as the action-reflection cycle, has an initial cycle of planning, acting, observing, and reflecting that can be extended into

multiple cycles in sequence (McNiff, 2002; see Figure 2). His model does not build on the more common spiral metaphor but rather incorporates "the possibility of providing evaluative feedback within and between the cycles of action" (Ebbutt, 1985, as cited in Hopkins, 2008, p. 51).

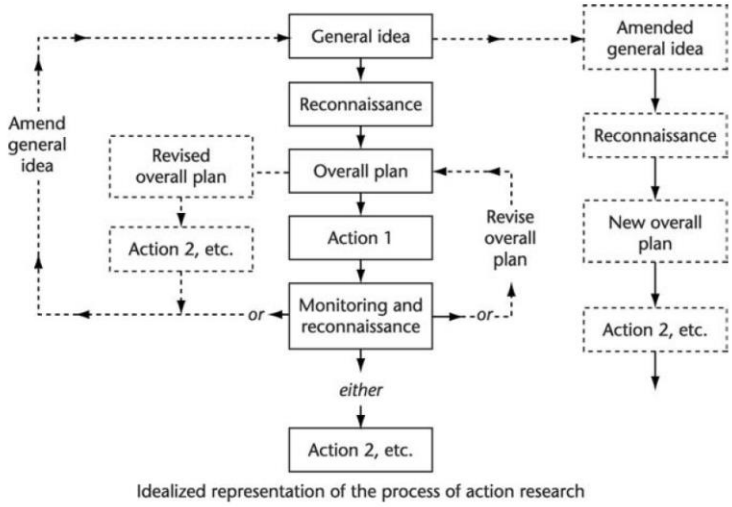


Figure 3. Ebutt's model of action research. Adapted from "*A Teacher's Guide to Classroom Research*", D. Hopkins, 2008, Maidenhead, England: Open University Press, (4th ed.), p. 51.

This model gives more opportunity for the researcher to engage in critical reflection and make substantive changes as the study proceeds and was used in the study as it allowed for greater opportunity for revision.

Practitioner Action Research

In one sense, any type of AR is practitioner research. According to McKernan (1996) the aim of AR is the solution of everyday practical problems by practitioners in their practice. In agreement, Dick (1993) states "when practitioners use action research it has the potential to increase the amount they learn consciously from their experience. The action research cycle can also be regarded as a learning cycle (see Kolb, 1984)" (p. 9). A

definition proposed by Menter, Elliot, Hulme, Lewin, and Lowden (2011) for practitioner research states “practitioner research in education is systematic enquiry in an educational setting carried out by someone working in that setting, the outcomes of which are shared with other practitioners” (p. 3). And in this case, shared with the scholarly community through the publication of a completed dissertation and planned for subsequent popular and academic press publications.

> Research within 'the disciplines of education' must enable questions, about the belief and value systems underlying educational practices to be answered. This means that research must be grounded in an awareness of the operational principles underlying actual educational practices and the contexts of belief and value in which they are embedded. (Elliott, 1987, p. 156)

The value of practitioner research is providing benefit to students through gains garnered from new insights and knowledge that results in changed practice (Sagor, 2005). These gains as claimed by Dick (2002) happen because “in action research each turn of the spiral is an opportunity for learning and change” (p. 162). The opportunities arise because the practitioner is willing to engage in critical reflection and then act upon what that reflection reveals needs to be changed. “That critical reflection can be about the data and the interpretations that the researcher is making from the data. It can also critique and improve the methodology. Beyond that, it may be used as an opportunity to examine the assumptions about knowledge that inform the research design” (Dick, 2002, p. 162).

Before leaving AR, it is important to discuss practitioner action research in relation to other possible types of action research followed by AR in comparison to other methodological approaches.

Practitioner Action Research in relation to other approaches. As discussed earlier, under the umbrella term “action research”, there are many different

categorizations of AR described in the literature (Bradbury-Huang, 2010; Cassell & Johnson, 2006; Herr & Anderson, 2005). One reason for this, as Anderson et al. (2007) point out is that "action research is a living, growing movement that is in the process of evolving" (p. 2).

McKernan (1996) categorized theoretical models of AR into four types: types 1, 2, 3, plus his own type. Type 1, Scientific Action Research, includes models based on the scientific method with the research process based on a scientific or technical view of problem solving following certain orderly steps. Early models in this category included those by Lewin, Taba, and Lippitt-Radke (McKernan, 1996). The current study did not fall into this category of AR because its philosophical underpinnings are not based on a scientific approach but on a pragmatic approach.

Type 2, was labeled Practical-deliberative AR. According to Levin and Greenwood (2005) "pragmatic action research is not an alternative way to conduct research but the way to conduct research that is epistemologically sound and socially valuable" (p. 103). These authors maintain that the two central features of pragmatism are the combination of action and experimentation to generate knowledge and participative democracy. The core elements of the pragmatic AR model by Levin and Greenwood (2001) are as follows:

- Action research is context-bound and addresses real-life problems.
- Action research is inquiry where participants and researchers co-generate knowledge through collaborative communicative processes in which all participants' contributions are taken seriously.
- Action research treats the diversity of experience and capacities within the

local group as an opportunity for the enrichment of the research/action process.

- The meanings constructed in the inquiry process lead to social action or these reflections on action lead to the construction of new meanings.
- The credibility/validity of action research knowledge is measured according to whether actions that arise from it solve problems (workability) and increase participants' control over their own situation. (p. 105)

"Action research focuses on solving context-bound real-life problems" (Levin & Greenwood, 2005, p. 105). These features matched those of McKernan's (1996) Type 2 Practical-deliberative AR and Ebbutt's model displayed in Figure 3. The current study falls within this category.

Type 3 theoretical models as described by McKernan (1996) fall under the Critical-Emancipatory Action Research category and advocates included Stephen Kemmis and Robin McTaggert. "Critical action research is seen as a politically empowering process for participants; the struggle is for more rational, just and democratic forms of education" (McKernan, 1996, p. 27). In critical AR, teachers and other practitioners become educational social reformers (McKernan, 1996). As the goal of this research was to focus on solving a local problem at a private university, not social reform, practitioner AR, as opposed to critical-emancipatory AR, was a more appropriate choice.

McKernan (1996) also promoted his own Action Research Time-Process model within the category he labeled Rational-Interactive Dynamic. He proposed, "that action research be considered as a practical, technical and critically reflective process" that

includes all stakeholders – parents, students, and practitioners – in the process (McKernan, 1996, p. 28). As the current research was also the means to fulfill the requirements for a dissertation, not all of the stakeholders – administrators, faculty, and tutors to name a few – could be included in the time frame of the study and thus McKernan's model was not an appropriate choice.

The one other possible research approach that could have been applicable in this situation was design-based research (DBR). AR and DBR have some similarities (Anderson & Shattuck, 2012; Cole, Purao, Rossi, & Sein, 2005) and as argued by Anderson and Shattuck (2012) "both practitioners and researchers often have trouble differentiating between action research and DBR—likely because they share many epistemological, ontological, and methodological underpinnings" (p. 17). Although Cole et al. (2005) showed that both AR and DBR are rooted in pragmatism and both have collaborative elements, one difference is that AR is usually carried out by the teacher/practitioner alone with the intent of informing individual practice (Cohen et al., 2011), and DBR is always collaborative and team based (Barab & Squire, 2004). The researcher in AR can also choose to put the primary focus on the action of action research (Dick, 2002) whereas research is the directed goal and focus in DBR (Barab & Squire, 2004). Since this study was not collaborative and team based on the research level, it was not the methodology of choice.

While AR is the methodology of choice for the study, case study will be the design framework. As pointed out by Simons (2009) case study is not defined by the methods of data collection; it is not a method but "it is a design frame that may incorporate a number of methods" (Thomas, 2011, p. 512). Thomas (2011) states that

"choice of method, then does not define case study: analytical eclecticism is the key" (p. 512). The case study frame will be described in the next section and will be followed by a description of mixed methods.

Case Study

Case study according to Simons (2009) developed in educational research, especially in curriculum innovation, in the late 1960s and 1970s in both the UK and the USA to the point that it was a widely accepted "research approach for evaluating complex educational innovations in specific contexts" (p. 13). Additionally, case studies in the opinion of Willis, Inman, and Valenti (2010) are not a research method but "are really a conceptual container" for any types or combinations of methods (p. 209). Simons (2009) and Thomas (2011) also reinforced the point that case study is a design frame featuring other methods and not a method itself.

A defining characteristic of case study described by Stake (1994) is that "a case study is both the process of learning about the case and the product of our learning" (p. 237). As such "case study research investigates predefined phenomena but does not involve explicit control or manipulation of variables: the focus is on in-depth understanding of a phenomenon and its context" (Cavaye, 1996, as cited in Darke, Shanks, & Broadbent, 1998, p. 275). As a case study, the relationship between two self-regulating learning strategies, help seeking and time use, was investigated through an in-depth exploration of a cohort of entering medical students at a Caribbean medical school over the course of one term.

Case study research is considered especially useful for researching problems "in which research and theory are at their early, formative stages" (Benbasat, Goldstein, &

Mead, 1987, p. 369). Since there is scant research on the relationship between help seeking and discretionary time, particularly with medical students, research into this relationship fits the description by Benbasat et al. (1987).

Case study was chosen for this study because it provided the design frame necessary to answer the research questions listed in the previous chapter. The pertinent strengths of a case study design as outlined by Simons (2009) to this study include:

- documentation of multiple view points from multiple perspectives;
- exploration of and understanding of "the process and dynamics of change" (p. 23);
- flexibility allowing responsiveness to shifts in focus;
- engagement of participants in a shared research process enabling co-construction of the perceived reality; and
- promotion of a self-reflexive approach by the researcher to understand the case and themselves.

This review of the literature continues with a description of the key components necessary to an understanding of the study. These components include medical education, online learning, student support services, learning strategies, self-regulated learning, time, and help seeking.

Mixed Methods

As described in Chapter 2, the study is a pragmatic action research case study using mixed methods. The main question driving the study as indicated in the previous section was a "how" question: How do entering SOM Term 1 medical students' perceptions of available time influence their help seeking behavior regarding learning

strategy resources at a Caribbean medical school? Yin (2009) asserts that research questions that ask “how” or “why” or that require a rich description of a social phenomenon are strong indications that case study is an appropriate design choice. This case study design frame was an appropriate choice because the study was an inductive, emergent, in-depth study of a bounded system and the researcher was the primary instrument of data collection (Merriam & Tisdell, 2016). As a design framework, one of the noteworthy advantages of using case study data collection is the opportunity to use multiple data sources of both qualitative and quantitative design to develop “converging lines of inquiry, a process of triangulation and corroboration” (Yin, 2009, p. 115) that will strengthen the trustworthiness of the study. The choice of method for data collection for this study was mixed methods and is described below.

A mixed methods approach involves using quantitative and qualitative data collection methods in the same study. The current study employed a sequential priorities model outlined as by Morgan (2014) in which a preliminary quantitative data collection phase (quant) precedes the core qualitative data collection phase (QUAL).

Target Population

The target population consisted of St. George’s University (SGU) School of Medicine (SOM) entering Term 1 students at the True Blue campus in Grenada in August 2016. SGU’s demographic data as of March 2016 indicated that its School of Medicine Doctor of Medicine program had 74% of students from the United States, 11% from Canada, 3% from Trinidad and Tobago, and 12% from 93 other countries. Forty-five percent of the student population were female (St. George’s University, 2017). Total enrollment in the MD Program was 5,817 students as of March, 2016 (St. George’s

University, 2017). The population for the study, students entering SGU SOM in August 2016 was 860 students.

Students who were repeating any or all of the Term 1 content or who were re-enrolling in SOM Term 1 in August 2016 were not part of the study, as they were not considered “entering” students.

Quantitative Research Methods

Of the three broad categories of methods for doing quantitative research, experimental studies, relationship research, and surveys, outlined by Willis et al. (2010) survey was the method of choice for this study. The strength of survey research is to be able to generate responses to answer the opinion, knowledge, and context research questions being posed for particular groups of students (Willis et al., 2010).

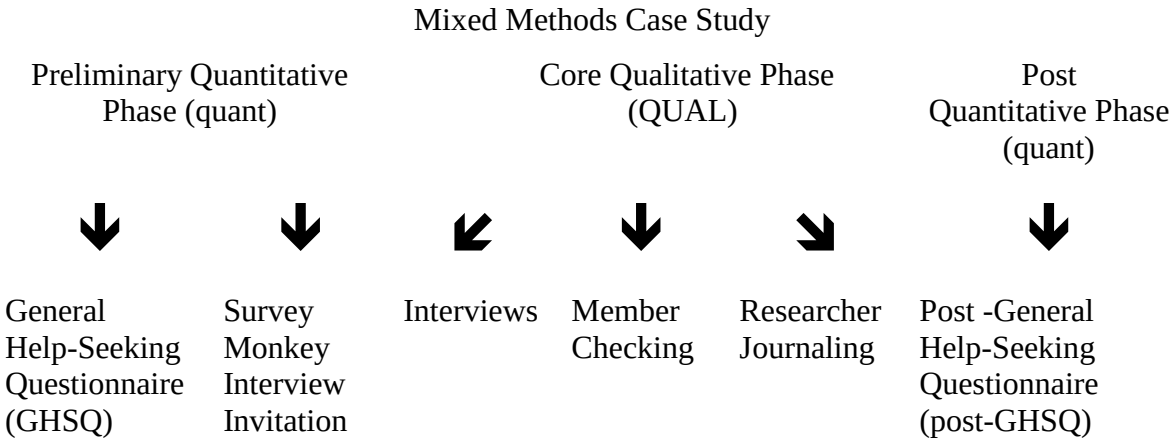


Figure 4. Multiple data sources for the mixed methods case study.

The quantitative data sources are shown in Figure 4. Quantitative data indicating intent to seek help was gathered from a modified version of the General Help-Seeking Questionnaire (GHSQ; see Table 4) designed by Deane and Todd (1996) and actual help sought from the post-GHSQ (see Appendix C). The willingness to participate in a face-to-face interview was indicated through a survey using SurveyMonkey. Student

demographic information on gender was collected from the GHSQ, the interviews, and the post-GHSQ.

Qualitative Research Methods

The key qualitative research characteristics according to Creswell (2013) include in no particular order: a natural setting; the key role of the researcher; the use of multiple forms of data; the use of complex reasoning involving inductive and deductive logic; the meaning coming from the participants; an emergent design; the researcher's reflexivity and an holistic account of the study. The core qualitative phase of this study depended on three data sources: individual semi-structured interviews, member checking, and researcher journaling (see Figure 4).

Procedure of the Study

This study used a mixed methods sequential design that began with a preliminary quantitative input design followed by a qualitative core design as described by Morgan (2014; see Table 3). The role of the preliminary quantitative study in this instance was to locate sources of high quality data for the qualitative study (Morgan, 2014). The strength of using a quantitative study first is to "search large numbers of potential data sources to find the kinds of sites or individuals who match the data collection needs of the core qualitative study" (Morgan, 2014, p. 124). The quantitative phase in this study used the large SOM Term 1 student population to help locate matching sources for the qualitative study relying on a smaller N and purposive selection to locate specific informants meeting the qualitative criteria (Morgan, 2014). However, once the initial quantitative data was collected, I decided to collect more quantitative data after the qualitative data collection, which required a change in the sequential design from quant/QUAL to

quant/QUAL/quant where quant stands for quantitative and QUAL stands for qualitative (Table 3).

Table 3.

Sequential Contributions Model for Integrating Qualitative and Quantitative Methods

		Priority of Methods		Follow-Up
		Qualitative Priority	Quantitative Priority	Extensions
Sequence of Methods	Preliminary Contribution	Preliminary Qualitative qual/QUANT	Preliminary Quantitative quant/QUAL	qual/QUANT/qual
	Follow-Up Contribution	Follow-up Qualitative QUANT/qual	Follow-up Quantitative QUAL/quant	quant/QUAL/quant

Modified from "*Integrating Qualitative & Quantitative Methods: A Pragmatic Approach*," by D. L. Morgan, 2014, Thousand Oaks, CA: SAGE, p. 13.

Preliminary quantitative input designs according to Morgan (2014), have received limited attention in the literature compared to studies based on preliminary qualitative methods. Yet these preliminary quantitative studies can create significant benefit by locating specific data sources, providing a wider context, and by detecting unexpected patterns in the data that could potentially generate issues for later research (Morgan, 2014). This benefit was still maintained in the change to a quant/QUAL/quant design. Additionally, the quantitative follow-up study allowed for the preliminary quantitative data results to provide substantive data and further support for the core qualitative data.

Purposive Selection of Data Sources

Qualitative research has several important procedural elements to consider. The first element according to Morgan (2014) is the small number of potential data sources

arising from attempting to understand processes occurring in real settings using a detailed, in-depth approach. The second is the purposive selection of data sources, "the practice of collecting detailed information from carefully chosen sources" (p. 127). In determining data sources for most social science methods, including qualitative, two interrelated processes must be considered: the criteria determining data source eligibility must be defined and then those sources meeting the criteria must be located (Morgan, 2014). Morgan (2014) developed a system for locating specific data sources with four strategies for purposive selection: defining criteria; systematic comparisons; special information; and developing theory and applications.

The current study used defining criteria as the strategy for the purposive selection of data sources defined by Morgan. Participants were asked to self-identify which group they believed they most closely matched based on the following defining criteria:

1. I did not use any of the learning strategy resources;
2. I used the face-to-face learning strategy resources;
3. I used the online learning strategy resources; and
4. I used both face-to-face and online learning strategy resources.

Participant Selection

Quantitative Participants.

A Department of Educational Services (DES) orientation session was held for the entering SOM Term 1 students on Friday, August 12, 2016 with a 45-minute slot designated for the learning strategies presentation led by myself. The first 10-15 minutes of the session was a presentation by me about this research study. This presentation included a summary of the research, the General Help-Seeking Questionnaire (GHSQ), a

demographic question on gender, and informed and voluntary consent (Appendix E). Students were asked to fill out the survey instrument using the online survey tool on LimeSurvey. This survey was password protected and situated on a secure server through a private company in Germany.

Many students had trouble accessing the Internet. Anticipating this problem, I had paper copies of both the modified General Help Seeking Questionnaire (GHSQ; described in detail in a later section of this chapter) and the letter of consent available. The paper documents were handed out by the learning strategists and me to students not able to access the electronic survey. The learning strategists then collected the paper copies as students finished the surveys. There were 733 students in attendance.

After the orientation session, the entire entering cohort was sent an email from me with the link to the electronic version of the GHSQ on LimeSurvey, the letter of consent attached, asking anyone who had trouble filling it in during the orientation session or who had missed the session and was willing to participate, to fill it in before 11:55 on Sunday, August 14, 2016. This quantitative tool was used to discover the students' intent to seek help before the term began. Since all of the population was invited to participate, the sample selection is best described as an attempted census.

The original study design did not include a post-survey. However, after the results of the GHSQ were obtained, I decided to include a post-GHSQ-survey (Appendix C). Both the required IRB and REB applications for changes were submitted to St. George's University and Athabasca University respectively for the post-survey and for a modified consent letter. Once approval was received for these documents, an application to the St. George's Survey Committee was also submitted with the required documentation. The

entire entering SOM Term 1 cohort was sent an email from me asking them to fill out the survey instrument using the online survey tool using LimeSurvey right after the last exam. The survey was open until December 31, 2016.

Qualitative Participants.

Interview participant selection was based on individual responses to an email sent to the entering SOM Term 1 cohort asking for their participation in a 10-20 minute interview. If students were willing to participate in the interview, they were asked to click on a link to SurveyMonkey and to indicate the following:

- if they were willing to participate in an interview;
- after which of exams 2, 3, and 4;
- which of the four categories of learning strategy resources use or non-use described above they fell into;
- their name; and
- their contact email.

Data Collection

Quantitative Phase

Demographic data. Demographic data was collected along with the GHSQ and the post-GHSQ and summarized for trends or tendencies using descriptive statistics (Cohen et al., 2011). Demographic information focused on gender because the preliminary literature review revealed studies on gender and help seeking, although with mixed results.

Survey questionnaire. A modified version of the General Help-Seeking Questionnaire (GHSQ) was used as the initial survey (Deane & Todd, 1996). This

questionnaire "was developed to assess intentions to seek help from different sources and different problems" (Wilson, Deane, Ciarrochi, & Rickwood, 2005). The GHSQ was found to have satisfactory reliability and validity by Wilson et al. (2005) in a study with high school students measuring help-seeking intentions regarding personal-emotional problems and suicidal thoughts. Further, Wilson et al. concluded, "the matrix structure of the GHSQ appears to provide a suitable method for measuring help-seeking intentions and supports the specification of different problem-types and different help sources" (p. 26).

Another study by Raviv et al. (1992) involving parents of adolescents indicates the matrix structure of measures similar to the GHSQ are generalizable to different contexts. Results from several studies suggested a stronger relationship between help-seeking intentions and actual behavior than attitudes and behavior (Kim & Hunter, 1993). Deane and Chamberlain (1994) "used a single response item (one help source for one problem-type) with concomitant problems with reliability" (Wilson et al., 2005, p. 17) while other researchers used two-problem types with a single response item (Deane et al., 1999; Deane & Todd, 1996). "The GHSQ asks participants to respond to each problem-type by rating their help-seeking intentions on a 7-point scale ranging from 1 ("extremely unlikely") to 7 ("extremely likely") for each help source option including "no one". Higher scores indicate higher intentions. Within this format, help-seeking intentions can be examined as individual scales by combining scores for different problem-types." (Wilson et al., 2005, p. 19).

Wilson et al. (2005) provided the two problem-type questions of the originally developed GHSQ. For this study, only one problem-type question was used and was

modified from “personal or emotional problems” to “an academic problem”. The Wilson et al. help sources and the modifications for this study are listed in Table 4. The GHSQ as it was used in this study is shown in Appendix A.

Table 4.

Help Sources for the GHSQ

	Wilson et al. (2005)	Study
a)	Intimate partner (e.g. girlfriend, boyfriend, spouse)	Intimate partner (e.g. girlfriend, boyfriend, spouse)
b)	Friend (not related to you)	Friend (not related to you)
c)	Parent	Parent (physician)
d)	Other relative/family member	Parent (non-physician)
e)	Mental health professional	Other relative/family member
f)	Phone helpline (e.g. Lifeline)	Learning Strategist
g)	Doctor/GP	Faculty Member
h)	Minister or religious leader	Faculty Advisor
i)	I would not seek help from anyone	Clinical Tutor
j)	I would seek help from another not listed above (please list in the space provided, (e.g. work colleague. If no, leave blank) _____	Upper Termer
k)		Peer (in the same term)
l)		Dean of Students (DOS)
m)		Internet
n)		Text Book
o)		Other _____

Adapted from “Measuring Help-Seeking Intentions: Properties of the General Help-Seeking Questionnaire,” C. J. Wilson, F. P. Deane, J. Ciarrochi, and D. Rickwood, 2005, Canadian Journal of Counselling, 39(1). Retrieved from https://smah.uow.edu.au/content/groups/public/@web/@gsm/documents/doc/uow090184.pdf

For the post-GHSQ the main question, “If you were having an academic problem, how likely is it that you would seek help from the following sources?” was changed to “Did you seek help from the following sources when faced with an academic problem this term?” and all of the responses remained the same. The initial GHSQ used a 7-point Likert scale for answer choices as the questionnaire asked participants to indicate how

strongly they intended to use each source of help listed and was based on the original GHSQ by Wilson et al. (2005). These authors carried out "a review of existing intention measures [and] found that a Likert rating scale was the most frequently used, was easier than ranking procedures, and provided the capacity to compare levels of intentions across sources an problems" (p. 19). The post-GHSQ asked for a yes or no answer using the same help sources as listed above in Table 4 and is shown in Appendix C. The post-GHSQ used yes/no instead of a 7-point Likert scale because participants either used the source or they did not.

Qualitative Phase.

In-depth interviewing. Interviews give more flexibility than questionnaires and can generate data that has a higher sensitivity to contextual variation (Phellas, Bloch, & Seale, 2012). Semi-structured interviews are partly standardized where the researcher has a list of topics or themes to be covered with each participant but without a predetermined flow to the interview or a set wording of the questions (Phellas et al., 2012). Face-to-face interviews allow for more complex questions as the researcher can explain if needed, for the researcher to ensure that each question is answered by the participant, for greater scope in the questions asked as the researcher can follow up on non-verbal cues, and for control over the context of the interview (Phellas et al., 2012). The goal of the interviewer is to have as little influence as possible on the responses of the participants (Phellas et al., 2012).

However, since the ideal is not possible the main disadvantages of face-to-face interviews is the introduction of researcher bias that can negatively impact the reliability of responses (Phellas et al., 2012) and the time requirements to transcribe and analyze

qualitative data (Seidman, 2006). Researcher bias is covered in detail later in this section. The transcription time factor was eliminated as I paid for an outside company to transcribe the interviews as described in detail later in this section.

One advantage of in-depth face-to-face interviewing is that it allows verbal and non-verbal data to be collected, both spoken and observed (Cohen et al., 2011). Strategies such as time management and help seeking have overt components that are relatively easy to observe, but the underlying cognitive and metacognitive processes may not be so readily accessed. The contention Garner (1988) made was "verbal-report data are particularly useful in that they give researchers a glimpse at covert strategic activity that is not accessible except as described by strategy users" (p. 63). Further, research by Peterson, Swing, Stark, and Waas (1984) with fifth grade mathematics students found students' reports to the researcher "were more valid indicators of classroom learning than observers' judgments of students' time on task" (p. 487). Interview procedures developed and tested by Zimmerman and Martinez-Pons (1986) were proven to "provide reliable evidence concerning students' self-regulated reports" (p. 625). Since help seeking and time-management self-regulatory learning strategies were under investigation in this study, individual interviews with the research participants made this data collection method the most pragmatic choice. And, since this mixed methods case study was exploratory, interviews were semi-structured.

The motive of in-depth interviewing as described by Seidman (2006) was "an interest in understanding the lived experience of other people and the meaning they make of that experience" (p. 9). The goal for this study approach was to discover what students were experiencing, how they were perceiving their experience, and how they were

adapting to their learning environment based on their experience. Initial questions were related to the themes of help seeking, discretionary time, and learning strategy resources but students were encouraged to expand upon their responses in whatever direction the conversation took. Participants were told that the interviews would be 15-20 minutes long recognizing how limited a resource time is for a medical student (Interview questions see Appendix D).

Once students responded to the request for an interview it was clear that there was not an equal distribution of students to choose from in the four categories of the use or non-use of learning strategy resources. In response, I set up a SignUp Genius account, created a signup with multiple days and times and sent it out to willing participants. Initially, the signup requests were sent to participants in the three categories that had respondents and had said yes to a post Exam 2 interview. Once the respondents to the first interview request were contacted, a second interview request with a new survey link was sent to the entire cohort, minus students that had responded to the first SurveyMonkey request. This link included the questions in the first request plus a question asking what time of day and day of the week the participant preferred for an interview time. Students that participated in an interview were not invited to any further interviews. Over time, six further signup invitations were emailed to various students from the initial request. Additionally, four students were personally invited, one by a DES faculty and three by me. The resulting interviews based on self-selection into the four resource categories and the time in the term they chose to be interviewed are shown below in Table 5.

Table 5.

Interview Schedule Based on Self-Selection into Resource Group and Timing After Exams

	Exam 2	Exam 3	Exam 4
1. Students who did not use any of the learning strategy resources	Participant 6 Participant 7	Participant 13 Participant 15 Participant 20	Participant 24
2. Students who used the face-to-face learning strategy resources	Participant 1 Participant 2 Participant 4 Participant 8 Participant 9 Participant 10	Participant 11 Participant 12 Participant 14 Participant 16 Participant 17 Participant 18 Participant 21 Participant 22 Participant 23	Participant 25 Participant 26 Participant 27
3. Students who used the online learning strategy resources		Participant 19	
4. Students who used both face-to-face and online learning strategy resources	Participant 3 Participant 5		

The interviews were audio recorded on both my password protected iPad and iPhone. Additionally, I took hand written notes of the interview. (See the study time schedule, Table 6). Each participant interviewed was shown the consent letter created for the interview portion of the study (see Appendix F) and given time to read and sign it. Any questions arising from the consent letter were answered before proceeding to the interview itself.

Member checking. Mixed methods research (MMR) in the opinion of Torrance (2012) has been undergoing an emerging debate. He argued, "that the views of research respondents should feature more centrally in mixed methods research designs and the co-construction of research knowledge" (p. 3). Torrance continued his argument by pointing out that interviewing still leaves the power with the researcher in terms of "the research agenda and the validity of data analysis" (p. 3). His suggestion, as one element of the larger construct of triangulation, was respondent validation or member checks (Triangulation is discussed in a later section of this chapter). Research participants can be involved by carrying out accuracy checks of either or both the initial data or to first drafts of the interpretive reports, as well as to any interpretations being made by the researcher (Torrance, 2012). The goal is to include the participants in the research process being careful to remember that they can point out potential misinterpretation and add new information and insight to the data set. However, as Hammersley and Atkinson (2007) pointed out respondent validation does not necessarily mean a participant's comments are valid but rather his or her responses validate the researchers account.

The extent of member checking in this study included the transcriptions of the interviews. Each of the respondents who participated in an in-depth interview was invited by email to participate in this stage of member checking. They were asked to not only check the transcription for errors but invited to include any further thoughts on the topics spoken about during the interview (See the study time schedule, Table 3).

Researcher journaling. In her book, *Case Study Research in Practice*, Simons (2009) asks "What right do we have, in fact, to study others if we do not also study ourselves?" (p. 81). Simons maintains that in case study research, the 'self' is an

"inescapable part of the situation [the researcher] is studying" (p. 81) as the main instrument of data gathering and the one interacting with the participants in the field. With "no consensus of what constitutes the 'self' or how to study it in the research" Simons defines "the self to mean that inner sense of knowing who we are and how we define what is important to us – those values, emotions and ways of thinking and being that affect how we live and act" (p. 82).

In a research context, what is important is reflecting on the dynamic of the interaction between the personal self and the research self (Simons, 2009). Since self cannot be left behind, subjectivity is inevitable in any research and processes for monitoring it can be put in place (Simons, 2009). The strategies that were employed to monitor subjectivity throughout this case study were documenting thoughts and feelings in my researcher's journal on a daily basis. The journal was concerned with the values, emotions, and critical thinking that were part of the interaction between the personal self and the research self. This active, reflective process was ongoing over the course of the study.

Time Schedule

The time schedule for the components of study is outlined in Table 6.

Table 6.

Time Schedule for the Data Collection of the Study: August 2016 to December 2016

	Quantitative Data Collection			Qualitative Data Collection		
Time in the Term	GSHQ	Email to students asking for interview	Post-GHSQ	Interviews (QUANT)	Member Checking (MC)	Journal (RJ)
Last Day of Orientation Friday, August 12	Orientation presentation of GHSQ to all entering SOM Term 1 students and follow up email					RJ
After Exam 2 Friday, September 23		25/09/16		1. 30/09/16-02/10/16 2. 07/10/16-09/10/16	MC1	RJ
After Exam 3 Thursday, October 20				3. 21/10/16-26/10/16 4. 26/10/16-30/10/16 5. 03/11/16-06/11/16 6. 06/11/16-07/11/16	MC2	RJ
After Exam 4 Monday, November 14		23/11/16		7. 15/11/16-20/11/16	MC3	RJ
After Exam 5 Friday, December 9			Post-GHSQ			RJ

Data Analysis

Pragmatism is linked to mixed methods research and as reported by Feilzer (2009) "does not require a particular method or methods mix and does not exclude others. It does not expect to find unvarying causal links or truths but aims to interrogate a particular question, theory, or phenomenon with the most appropriate research method" (p. 13).

Knight (2002), writing from a pragmatic viewpoint, claimed data analysis is a two-stage process of "(1) indexing or coding the data and (2) developing and reflecting on interpretations of the data" (p. 182).

A broad definition of mixed methods research by Tashakkori and Creswell (2007) found the researcher using both quantitative and qualitative approaches to collect and analyze data, integrate findings and then draw inferences within the context of a single study. In the opening to the data analysis chapter in *Foundations of Mixed Methods Research*, Teddlie and Tashakkori (2010) argued that a researcher needs to understand the specific data analysis strategies for the quantitative and qualitative research traditions before trying to understand how the two are combined in mixed methods studies.

Pertinent to this study is the language used to describe data analysis from the two perspectives. Teddlie and Tashakkori (2009) used the terms "inductive, iterative, and eclectic" to describe qualitative data analysis (p. 270). They further qualified "inductive data analysis involves arguing from particular facts or data to a general theme or conclusion" (p. 270), iterative data analysis involves "a back-and-forth process between data collection and data analysis" (p. 270), and eclectic data analysis involves employing a "mix of the available analytical tools that best fit the data set under consideration" (p. 272). Additionally, these authors described how quantitative "data analysis might also be inductive, especially when used in exploratory studies. Looking for patterns in large archival data sets by examining summary tables and visual displays is an example of this analysis" (Teddlie & Tashakkori, 2009, p. 270).

> Writing about case study, Simons (2009) has a similar perspective taking analysis to mean those procedures – like coding, categorizing, concept mapping, theme generation – which enable you to organize and make sense of the data in order to produce findings and an overall understanding (or theory) of the case. It

> is frequently a formal inductive process of breaking down data into segments or data sets which can then be categorized, ordered and examined for connections, patterns and propositions that seek to explain the data. (p. 117)

McMillan and Schumacher (2001) promoted case study design as an emergent, circular process composed of simultaneous and interactive sampling, data collection, and partial data analysis components.

Quantitative Data Analysis

The demographic data collected was from one question asking about gender in the surveys with the modified GHSQ and the post-GHSQ and was analyzed using descriptive statistics to present a gender profile of the participants and connect it to any relevant literature.

Descriptive statistics were used to analyze the quantitative data from the initial GHSQ and post-GHSQ. Both descriptive statistics and inferential statistics were used to analyze the data generated from the initial modified GHSQ and the post-GHSQ. Correlational analysis using parametric techniques was conducted on the relationship between intention to seek help and actual help sought (Wilson et al., 2005). A research study by Wilson et al. (2005) using the GHSQ showed "satisfactory reliability and validity, and [found that the GHSQ] appears to be a flexible measure of help-seeking intentions that can be applied to a range of contexts" (p. 15).

Qualitative Data Analysis

The analysis of all qualitative data according to Merriam and Tisdell (2016) "is inductive and comparative in the service of developing common themes or patterns or categories that cut across the data" (p. 297). Data analysis is a complex process of sense making from the data set that includes both collected data from the participants and the

reading and observations of the researcher (Merriam & Tisdell, 2016). Qualitative data analysis by design is carried out along side the data collection and not at the end of the process (Merriam & Tisdell, 2016). The time schedule outlined in Table 6 indicates how this interval data collection using Braun and Clarke's method of thematic analysis (2006) for qualitative research was followed for this study (see Table 7 for the stages).

Table 7.

Adapted Stages of Braun and Clark's (2006) Thematic Analysis Model

Phase	Basic Descriptors
Phase 1	• Familiarizing yourself with the data – the depth and the breadth • Repeated active reading • Making notes and marking ideas for coding • Transcription of interview data into written form
Phase 2	• Generating initial codes from the transcribed data • Coding for particular themes in the data set not the entire set • Electronic or written - Excel
Phase 3	• Searching for themes • All data has been coded and collated • Sorting into potential themes and subthemes – mind maps
Phase 4	• Reviewing themes – refinement on two levels – creating a thematic map • Level 1 – reviewing at the level of the coded data extracts – looking for patterns • Level 2- reviewing at the level of the entire data set – looking for an accurate representation of the data set as a whole
Phase 5	• Defining and naming themes • Identifying the essence of what each theme is about • Write a detailed analysis for each theme, identifying its story
Phase 6	• Producing the report • Write-up of a thematic analysis – tells the complicated story of the data in a way that convinces the reader of the merit and validity of the analysis

Adapted from "Using Thematic Analysis in Psychology," by V. Braun and V. Clarke, 2006, *Qualitative Research in Psychology, 3*(2).

Content analysis is "a family of procedures for the systematic, replicable analysis of text" (Rose, Spinks, & Canghoto, 2015, p. 1) and an effective method for qualitative methods of data collection (Bengtsson & Ohlsson, 2010; Burnard, 1991). One member of

the content analysis family is thematic content analysis (Bengtsson & Ohlsson, 2010; Burnard, 1991).

There is a camp within qualitative methods where thematic analysis is viewed as "essentially independent of theory and epistemology, and can be applied across a range of theoretical and epistemological approaches" (Braun & Clarke, 2006, p. 5) with the potential to deliver a rich and complex version of the data. Based on a lack of agreement on definition and procedure for thematic analysis, Braun and Clarke (2006) proposed a number of decisions they called a "'named and claimed' thematic analysis" that promote the development of a "theoretical framework and methods that match what the researcher wants to know, and that they acknowledge these decisions, and recognize them *as* decisions" (p. 8).

Following the Braun and Clarke (2006) framework, the decisions for this study were as follows: The data set was derived from all data collected. In order to identify themes or patterns within the data, a blend of deductive and inductive thematic analysis approaches was used. Thematically, the two main areas of interest in this study were help seeking and discretionary time. Initially, these theoretical themes drove my interest but as the data was collected, the themes that were linked to the data themselves emerged inductively and were added to the data map. The level at which themes were identified was the "latent or interpretative level" which means that the thematic analysis "starts to identify or examine the *underlying* ideas, assumptions, and conceptualizations – and ideologies – that are theorized as shaping or informing the semantic content of the data" (Braun & Clarke, 2006, p. 13; see Table 7).

When the data was analyzed, I used both deductive and inductive searching approaches to search for emerging themes. Creswell (2013) advocated for the use of both inductive and deductive logic at the appropriate time by the researcher in a qualitative study because it means complex reasoning skills are being used throughout the process of the research. Altering between induction and deduction as argued by Morgan (2007) is a version of abductive reasoning and a hallmark of the pragmatic approach.

In some cases, member checking generated an email from participants responding to the transcriptions of the interview reports. These data were analyzed using the same Thematic Analysis Model as described above for the initial interview data and included into the NVivo database.

My researcher's journal was analyzed using a narrative approach. Key strengths of narrative described by Cohen et al. (2011) included a portrayal of the chronology of events over time, a bringing of information to life, and acting as "a foil to the supremacy of coding and coding-derived analysis" (p. 553). A selective focus was adopted based on my own criteria. The analysis stages outlined by Cohen et al. (2011) were the following: text selection based on key selection criteria, analysis of the text for meaning, development of working hypotheses, interpretation and checking, and construction of the final narrative. The key selection criteria was developed inductively and emerged as the study proceeded.

Prototype Study

This prototype study arose from a need to address the specific problem of how to create effective online learning strategy resources for medical students at a Caribbean medical school. This early research also tied in to the dissertation study, as the resulting

website would be the vehicle to provide the online learning strategy website resources to be used by the entering SOM Term 1 students in the fall cohort of 2016.

As described in Chapter 1, there is a robust learning strategies program already in place with seven fulltime learning strategists at the research institution. The current program has grown over the past sixteen years with a focus on academic support for medical students using a face-to-face model, which incorporates one-to-one individual appointments, group workshops, and class presentations. However, as the medical school student population has grown there has been an increased demand for student support services as well as for new methods within those services. One area that had not been previously developed in the local situation proposed for this study is the online environment.

The role of a learning strategist is a mix of coach, counsellor, instructor, and advisor. Learning strategies are student specific and context specific, which means that a learning strategies appointment needs to be a fluid, unique, and collaborative experience for both the student and the strategist. While the online environment is growing and changing, it is questionable, from the learning strategist's perspective, that it can be as effectively developed as a learning strategies resource compared to the face-to-face environment. But, because there is a lack of research in this area, it is not known whether students also value face-to-face resources over online resources.

The prototype study was carried out over the spring term of 2015 from January through May involving 30 entering SOM Term 1 medical students at SGU. The purpose of the prototype was to test an online learning strategies resource website (LSRW) as an attempt to better meet the needs of students at SGU. The original problem was how to

replicate the quality face-to-face interaction between a learning strategist and a student in the online environment and, in the process create learning strategy resources that would be equally effective online. The research question was “Can DES develop online learning strategy resources that are perceived as effective by SOM1 students?”

Participant recruitment, data collection and data analysis methods were tested and verified in preparation for this proposal (see Appendix B).

Changes to the Proposed Research Study Based on Prototype Study Results

The LSRW was developed and paid for by myself with the hope that the website material and process could be transferred and incorporated into the newly designed SGU portal website. As this portal went live after the prototype study, it was clear that maintaining the LSRW myself was not a feasible choice because of cost so other solutions had to be pursued. Two participants in the prototype study asked if the LSRW could become part of Sakai, the SGU course management system (CMS). This route is currently being pursued. The positive effects of using this platform include: 1. Individual users could be tracked by their student number so individual data can be collected 2. All SOM Term 1 students know how to access and use the CMS and 3. There will be no need for a web designer. The negatives include: 1. A loss of functionality available on Sakai compared to the website 2. The look of the two platforms is different as Safari has fewer color and display options in comparison to Word Press and 3. The analytics that can be collected are different.

Time was a consistently referred to concern by the participants in the prototype study in the think alouds and the interview questions. This influenced the decision to make the focus of the proposed research study about how entering SOM Term 1 medical

students' perceptions of available discretionary time influenced their help-seeking behavior regarding learning strategy resources.

Ethics of Research with Student Participants

Educational researchers are required to pay special attention to ethical issues both because of past abuses and because it is good practice. A Research Ethics Board (REB) submission was made to Athabasca University and an Institutional Review Board (IRB) to St. George's University where the research study took place. The role of an IRB was built on the basic principles of respect of persons, munificence, and set out in the Belmont Report with the aim of protecting the welfare and rights of human subjects (Herr & Anderson, 2005). Respect for persons is about autonomy and their ability to freely accept or decline to participate in research based on weighing the risks and being willing to assume any risk (Herr & Anderson, 2005).

Action research poses some issues with the traditional IRB procedures. "Because action research is a dynamic, evolving practice, there is no foolproof plan to avoid ethical dilemmas as the research develops" (Herr & Anderson, 2005, p. 112). The initial participant consent may be the first of several interactions that will have to be addressed as the study continues. This means that the researcher must have the ability to recognize unforeseen ethical issues as they arise and have the commitment to address them in a timely fashion (Herr & Anderson, 2005).

All of the potential participants for the study were adults with the ability to choose for themselves whether or not they wished to participate. Each participant was asked to give voluntary and informed consent based on concise information that I provided to them before participating in each stage of the research study. Member checks deserve

special consideration in the opinion of Miles, Huberman, and Saldaña (2014) to make sure that participant consent is strengthened as the study proceeds and participation level is increased. These researchers maintain "securing a participant's permission is not a single hurdle to be jumped; dialogue and ongoing renegotiation are needed throughout the study" (p. 60).

Researchers also need to guarantee the confidentiality of the self-reported information in order to increase the likelihood of truthful responses (Schunk, 2012). Every attempt was made to contact participants throughout the research study when any parameters changed that impacted their consent in order to ensure their protection. Participants were given the opportunity to withdraw from the study at any point during the data collection phase and any data pertaining to their participation will be deleted. SGU student emails were the identifier used to collect the quantitative and qualitative data and all collected data was password protected with the password known only by me. No student names were used in the dissertation or any reports generated by me. Finally, all raw data from interviews and subsequent analysis data were stored on a password-protected computer I owned. This data was anonymized so that it cannot be traced back to identifiable subjects.

Research Timeline

The research timeline is outlined in Table 8.

Table 8.

Research Study Timeline

Date	Research Activity	Outcomes
December 2015	Proposal submission, revision	
January 2016	Proposal Defense	Completion of Candidacy Exam
January through May 2016	Revisions to Learning Strategy Resources Website (LSRW)	LSRW finished product
January 2016	AU REB & SGU IRB Application/approval/revision	Ethics Approval
August through December 2016	Case Study research	Data collection of mixed methods and start of analysis of data
• After Exam 2 • After Exam 3 • After Exam 4	After each SOM Term 1 event qualitative data set allows start of the interviews	Data collection of mixed methods and start of analysis of data
October through November 2016	Follow-up interviews	Member checking and analysis of data
November through December 2016	Final Data Analysis	Data analysis and editing of chapters 1-3
December 10-31, 2016	Post-GHSQ	Quantitative data collection and start of analysis of data
January through March 2017	Write the Final Report	Respond to feedback
April/May 2017		Completion of dissertation for advisory committee input
June 2017		Defense of Dissertation

Summary

This methodology chapter described the design of the case study by presenting a mixed methods approach to data collection. An explanation of how the study procedures were designed to answer the research questions that drive this study was presented. A summary of the prototype study described the influence of the results on the design of this study. Finally, the limits of and constraints to this research design were highlighted.

The study design has elements of both qualitative and quantitative approaches with a combination of self-reporting devices. The first chapter provides an introduction, the second a literature review, and the third the methodology. A fourth chapter provides a discussion of results and a fifth chapter describes the conclusions and recommendations of the final research study. The study was designed to solve a local problem and so has limited generalizability to a larger context. Despite this, future research possibilities include the development of additional online learning strategy resources for the SAS and the SVM at SGU. A successful result will make an original contribution to the medical education literature regarding the relationship between the self-regulated learning strategy, help seeking, and discretionary time.

In conclusion, this study will explore the relationship between the self-regulated learning strategy help-seeking and discretionary time. This better understanding can be used to improve educational practice within DES for face-to-face and online learning strategy student resources for the SOM Term 1 students. These improvements may include an increase in student help seeking behavior toward the use of the learning strategy resources. This new knowledge can then be used to develop future online

resources for student cohorts in other School of Medicine, School of Veterinary Medicine, and School of Arts and Sciences terms.

Chapter 4: Data Analysis and Results/Findings

The purpose of this chapter is to describe the mixed methods data analysis in detail and to report the quantitative results and the qualitative findings. This chapter follows the comprehensive description of the methods in Chapter 3 and is the basis for the conclusions, discussion, and recommendations presented in Chapter 5. The qualitative interview data were analyzed using thematic analysis and the researcher's journal by narrative analysis. The quantitative surveys were analyzed using descriptive and inferential statistics. A Cronbach's alpha was run for internal consistency on the GSHQ and the post-GHSQ. Demographic information on gender was analyzed for trends and tendencies using descriptive statistics.

The GHSQ was modified from the questionnaire used in a psychological setting by Wilson et al. (2005) for the current study because the matrix structure of the instrument allows for study specific help sources and problem-types to be used to measure help-seeking intentions. These authors also demonstrated the GHSQ had acceptable reliability and validity. The post-GHSQ was created as a follow up to the GHSQ by changing the 7-point Likert scale for the sources on intent to seek help to yes or no answers for the same sources on help actually sought (Appendix C). A thematic analysis was chosen for the semi-structured interviews because of the potential of this approach to deliver a rich and complex version of the data (Braun & Clarke, 2006). The selective focus of narrative analysis made it the most appropriate choice for the analysis of the researcher's journal, which was written in narrative style. The criteria chosen for this analysis were key decision points in the story and notable themes, bringing balance to coding and telling the story (Cohen et al., 2011; Simons, 2009).

This chapter begins with an introduction outlining the purpose, the rationale for the analysis and the rationale for the organization of the chapter. Since this was a mixed methods action research case study with qualitative and quantitative data, a description of the sample is followed by a detailed quantitative analysis of the results and a comprehensive qualitative analysis of the findings. The chapter concludes with a summary of the results and findings.

Description of the Sample

The sample consisted of entering Term 1 School of Medicine (SOM) students at St. George's University (SGU) in Grenada, West Indies in the fall term of 2016. There were approximately 860 students registered for the term, 733 were present at the orientation session where I presented the invitation to participate in the research study. Six hundred and twenty-five students (72.79% of the cohort) participated in the initial GHSQ survey, 27 students (3.14%) were interviewed, and 98 students (11.40%) participated in the post-GHSQ survey.

There is some overlap of entering SOM Term 1 students' participation and the composition of the three data collection phases, the preliminary quantitative, the core qualitative, and the post quantitative are shown in Figure 5. There were seventy-six students that filled in both the GHSQ and the post-GHSQ with 25 answering in the affirmative to having faced an academic problem during the term. Within the interviewee cohort, 17 filled out the GHSQ, 13 the post-GHSQ, and 12 filled out both surveys.

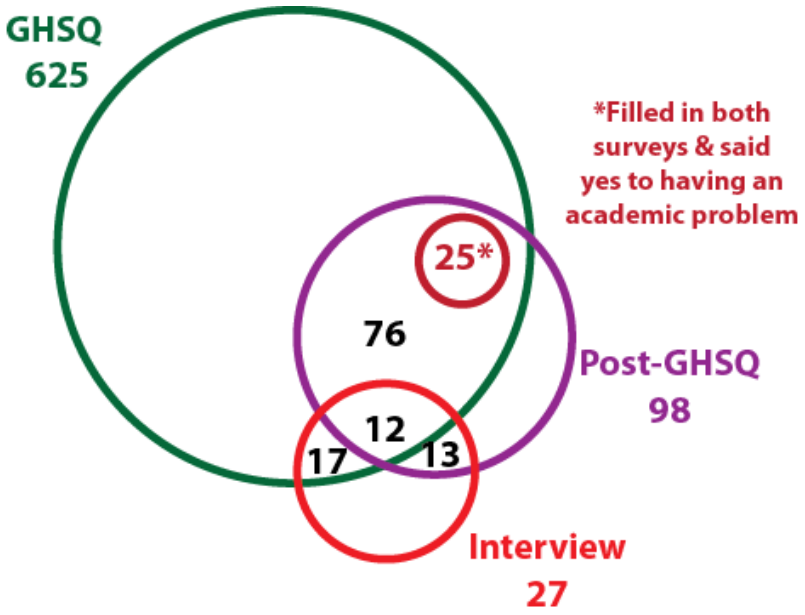


Figure 5. Participant Composition of the Three Data Collection Phases

The SGU website demographic and enrollment data for the Doctor of Medicine (MD) Four-Year Program updated as of October 2016, which the entering Term 1 students involved in the current study were part of, indicated that 45% of the students were female and 55% were male. No participants withdrew from the study.

Data Analysis and Results/Findings

The purpose of case study, according to Simons (2009), is to explore and understand "the distinctiveness of the individual case" (p. 3). This case study used both quantitative and qualitative data collection and analysis methods to investigate the dynamics of the relationship between the entering SGU SOM Term 1 students and their help-seeking behavior for the Fall Term 2016. The quantitative results and qualitative findings are presented below. In addition, I kept a journal throughout the data collection and analysis process to provide a balanced perspective to coding-derived analysis (Cohen et al., 2011).

Emergent Methodology

As is common in studies using an action research methodology was used, the data collection and analysis was not linear. These processes occurred simultaneously and there were points in time when some of the data collection processes were required to change; some as a result of unforeseen problems and some directed by the findings that emerged from the data.

There were three specific changes to the data collection process. The first was the addition of a post-survey. Once the results were entered for the GHSQ, it became apparent that a post-GHSQ was necessary to see how well intent to seek help matched actual help sought. A second IRB and REB were requested and approval was granted for the post-GHSQ. The 7-point Likert scale in the GHSQ was changed to yes or no answers for the post-GHSQ for the same 15 help sources. The post-GHSQ was sent to the Term 1 SOM students after their last exam for the term and completed the study.

The second change occurred during the interview selection. What was designed as purposive selection for interviewees across the four learning strategy resources groups became convenience sampling in the end. Initially, purposive selection (Morgan, 2014) was to be carried out with the quantitative data using the analytics of the website indicating which students had used the online DES learning strategy resources (MyCoach) and from the learning strategists appointment notes indicating which students had used the face-to-face learning strategy resources. All four predetermined interview groups could be generated from these two sources. Although I had specifically checked with the website designer to make sure that I could get individual data indicating which SOM Term 1 students had used the online learning strategy resources when I moved the

LSWR information from my own website to SGU's, I was informed when I asked for the data that it was not possible to acquire individual data. The asking and answering took over a week and by that time I was going to miss the deadline to send out the invitation to interview. At the same time, I asked for the information from the learning strategists notes, which were to be used to indicate which face-to-face learning strategy resources use, I was informed that the notes were not up to date.

I made an attempt to maintain purposive selection by creating a SignUp Genius link to a SurveyMonkey survey. An email invitation to participate in the interview stage of my study was emailed to the entering SOM Term 1 students along with a brief explanation (Appendix G). If the students agreed to participate, the survey asked them to self-identify which of the four use or non-use learning strategy resource groups they matched (Appendix G). The invitation to participate in an interview occurred twice with 33 students responding to the first interview invitation and 12 to the second invitation. From these 45 volunteers, 27 actually made and kept interview appointments within the time frame from just after Exam 2 to just after Exam 4. No students indicated a willingness to interview any later in the term as finals were approaching.

Despite volunteers willing to participate in the interviews and self-identifying themselves into the four predetermined interview groups, there was an unequal distribution across groups. This meant that I could not do a purposive selection because I did not acquire an even distribution of participants across the four planned interview groups. The end result was a convenience sampling based on accessibility to the interviewees and expediency in getting the invitations to interview released to the students (McMillan & Schumacher, 2001).

The third change was the addition of three new questions during the interview data collection based on interviewee responses and my journal reflections. The first added question was “Emotionally, is it hard to make a choice to go to DES? Is there any kind of stigma or downside?” with Participant 8. The question arose from the participant commenting “I think emotion plays a factor in the fact that you're away from your family and things work a little differently down here, so that can be emotionally stressful.”

A second question added was “Are there any other factors aside from time that you consider when you go look for help?” with Participant 16. This question came as a result of the interviewee responding to the question about whether she was a self-fixer or someone who gets help right away.

The third added question with Participant 22 was “If you had a problem with your learning, would you consider the Internet as an option to find note taking or concept mapping strategies?” because the previous participant mentioned “stumbling over” how to create a concept map while looking for content on a specific topic.

Research Question One

If entering SOM Term 1 students are experiencing an academic problem, how likely is it that they will seek help and from what source? The component parts of this research question were how likely students would be to seek help and from what source.

How likely were students to seek help? It was highly likely that entering Term 1 SOM students experiencing an academic problem would seek help based on the survey data for the 625 students that indicated their intent to seek help on the General Help Seeking Questionnaire (GHSQ; Figure 5). The GHSQ asked, “If you were having an

academic problem, would you seek help from anyone?" Data collected indicated 612 said yes, 12 answered no, and one student answered yes/no.

From what source? A Cronbach's alpha was run on the GHSQ and the post-GHSQ data to determine internal consistency or scale reliability. Cronbach's alpha measures "how closely related a set of items are as a group" (idre, 2017). The analysis showed an alpha coefficient of 0.8684 for the GHSQ and 0.9827 for the post-GHSQ, which suggests that all of the sources have a comparatively high internal consistency. Descriptive statistics including mean, median, mode, and standard deviation were run on this GHSQ data for each of the fifteen sources. The sources are listed from highest mean score to lowest (see Table 9).

Table 9.

GHSQ Descriptive Statistics for Intent to Seek Help Sources (Likert Scale 1-7)

Source	Clinical Tutor	Faculty	Textbook	Internet	Peer	Learning Strategist	Faculty Advisor	Friend
Mean	5.70	5.61	5.52	5.47	5.20	5.18	5.05	4.71
Median	6.00	6.00	6.00	6.00	6.00	6.00	6.00	5.00
Mode	7.00	7.00	7.00	7.00	6.00	7.00	7.00	5.00
SD	2.01	1.93	2.11	2.17	2.04	2.18	2.25	2.19
Source	Upper Termer	Parent (Dr.)	Partner	Other	Parent (Non-Dr.)	DOS	Relative	
Mean	4.31	3.73	3.70	3.68	3.02	3.00	2.78	
Median	5.00	4.00	4.00	4.00	2.00	3.00	2.00	
Mode	5.00	7.00	7.00	1.00	1.00	0.00	1.00	
SD	2.25	2.65	2.60	2.26	2.32	2.33	2.25	

Note: Upper-termer is used because it is the term of reference for a senior student at SGU. Likert Scale was from 1-7 for each source listed with 1 indicating extremely unlikely and 7 indicating extremely likely.

Inferential statistics were also carried out on the GHSQ data through a factor analysis. The research study intended to explore how entering SOM Term 1 students perceived each of the listed variables as sources of academic help and the factor analysis collapsed fourteen variables down into a few underlying factors allowing for a more manageable and effective interpretation.

The factor analysis was carried out using data from 625 participants with 14 variables. Since the variables were normally distributed, a maximum likelihood method with oblique rotation (direct oblimin) for factor extraction was used with a maximum iteration level of 25 for conversions. If the data are relatively normally distributed, Fabrigar, Wegener, MacCallum, and Strahan (1999) argued that, maximum likelihood is the best choice of extraction. This is because maximum likelihood "allows for the computation of a wide range of indexes of the goodness of fit of the model [and] permits statistical significance testing of factor loadings and correlations among factors and the computation of confidence intervals" (p. 277; See Table 10).

In a literature review on factor analysis, Velicer and Jackson (1990) reported that an abundance of alternative approaches and no clear consensus regarding a best method were problematic. Specifically, they pointed out that while the method of retaining all factors with eigenvalues greater than one was often used, it had a negative effect on factor analysis results. However, Fabrigar et al., (1999) described the scree test as an effective method of selecting the number of factors to retain (see Table 10). The scree test for this study's data indicated that three significant factors were likely and as a result the factor analysis was run with a fixed number of three.

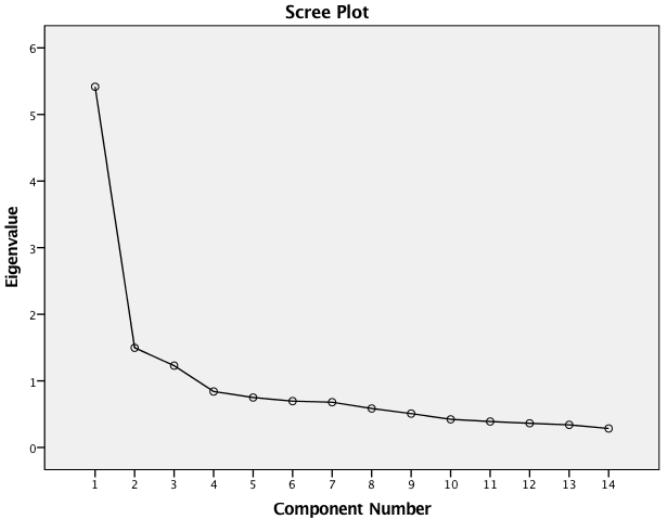
"For any given solution with two or more factors (or principal components), there exists an infinite number of alternative orientations of the factors in multidimensional space that will explain the data equally well" (Fabrigar et al., 1999, p. 281). Exploratory factor analysis (EFA) models do not have one unique solution when there is more than one factor and the two main rotational methods to choose between are the orthogonal and the oblique (Fabrigar et al., 1999).

Table 10.

Total Variance Explained

Initial Eigenvalues			
Component	Total	% of Variance	Cumulative %
1	5.417	38.691	38.691
2	1.497	10.690	49.381
3	1.228	8.774	58.155
4	.840	6.002	64.158
5	.750	5.358	69.516
6	.696	4.971	74.486
7	.679	4.852	79.338
8	.585	4.178	83.517
9	.508	3.630	87.147
10	.423	3.020	90.167
11	.389	2.781	92.948
12	.363	2.592	95.540
13	.339	2.425	97.965
14	.285	2.035	100.000

Scree Plot



Direct oblique rotation was used for this study because oblique rotations:

- permit “correlations among factors”,
- “provide a more accurate and realistic representation of how constructs are likely to be related to one another”, and
- “produce estimates of the correlations among common factors” (p. 282).

Since the chosen variables in the current study measured entering SOM Term 1 students’ perceptions of help sources some intercorrelations were expected and so reinforced the use of the oblique rotation statistical method of simplifying the data structure. Some of the extracted factors would have otherwise been eliminated using an orthogonal rotation.

Three factors were produced by this factor analysis. Academic Human Sources (Factor 1) explained 35% of the variance and included the following variables: Learning Strategist, Faculty, Faculty Advisor, and Clinical Tutor. Student & External Resources (Factor 2) explained an additional 6.26% of the variance and included the following variables: Upper-Termer, Peer, Internet, and Textbook. Non-Academic Human Sources (Factor 3) explained an additional 6.24% of the variance and included the following variables: Partner, Parent (Dr.), Parent (Non-Dr.), and Relative. These three factors explained just less than half of the total variance (47.54%).

There was a negative correlation (r=-.543) between Factor 1 and Factor 2, a positive correlation (r=.453) between Factor 1 and Factor 3, and a negative correlation (r=-.365) between Factor 2 and Factor 3. With correlation results relatively low and negative, the indications are that the factors do measure different components of student perception. Similar response patterns were associated for the Learning Strategist, Faculty, Faculty Advisor, and Clinical Tutor sources – all academic experts grouped together in Factor 1. Factor 2 showed an association between student sources (upper-termer and peer) and external resources (Internet and textbook). Factor 3 indicated an association between non-academic human sources.

The results for question 1 indicate that before classes begin, entering SOM Term 1 students have a strong intention to seek help if they experience an academic problem. From the choices given, these students would most likely seek help from human sources that included clinical tutors, faculty, peers, and learning strategists and from non-human sources including textbooks and the Internet. If they intended to seek help from a learning

strategist, they would also intend to seek help from faculty members, faculty advisors, and clinical tutors.

Research Question Two

How does the intent to seek academic help by SOM Term 1 students match their actual help-seeking behavior using face-to-face, online, or both learning strategy types of resources? This research question looked at the match between intent to seek help and actual help-seeking behavior using any or all of the sources listed on the survey. While this question was formulated as a quantitative question, it was answered in part by both the quantitative results (the post-GHSQ) and qualitative data findings (the interview data).

Ninety-eight participants completing the Post-GHSQ survey and just under two-thirds (66. 33%) indicated that they had not had any academic issues during the term (an thus had not sought help) by answering no to the initial survey question, “Did you have an academic problem this term?” (Figure 5). The participants indicating that they did not have an academic problem were not included in the results shown in Tables 12 and 13 as a “no” answer meant the electronic survey did not open the response choices when answering “yes” but did ask for their gender. Entering SOM Term 1 students not reporting an academic problem were not expected to have any reason to seek help. One interviewee did disclose making an appointment with a learning strategist despite not experiencing an academic problem just to make sure she was on track.

The low response rate to the post-GHSQ (98 participants) in comparison to the GHSQ (625) was the result of timing in the term and direct access to the students. The invitation to participate in the initial GHSQ was in person and before the term had

actually started. Entering SOM Term 1 students had not started classes yet so there were no competing academic responsibilities and had not been asked to fill in other surveys yet. The invitation for participation in the post-GHSQ was via email sent just as their final exam for the term ended. So while students had no further academic responsibilities, they were not necessarily checking their SGU email and were travelling for the holidays.

Thirty-three participants gave an affirmative answer to the question, “Did you have an academic problem this term?” and their results indicating which sources they actually sought help from for academic issues are shown in Table 11. Results are listed showing highest to lowest actual help sought values.

Table 11.

Post-GHSQ Results for Sources of Help Actually Sought (N=33)

Sought Help From	Friend	Internet	Peer	Learning Strategist	Textbook	Upper Termer	Clinical Tutor	Faculty
Yes	30	29	28	26	25	23	18	15
No	2	3	2	5	5	6	13	15
Blank	1	1	3	2	3	4	2	3
Sought Help From	**Partner**	**Faculty Advisor**	**Relative**	**Parent (Non-Dr.)**	**Parent (Dr.)**	**DOS**	**Other**	
Yes	12	11	10	9	6	2	2	
No	13	17	19	20	20	20	11	
Blank	8	5	4	4	7	11	20	

Note: Blank = No answer given.

Specific to learning strategy resources, 26 participants indicated on the post-GHSQ that they actually sought help from a learning strategist. The listing of Internet as a source was not indicated on the surveys as being specific to SGU and as a result does not give an indication of seeking help from MyCoach, SGU’s online resource.

There were 25 participants that completed both of the GHSQ and the post-GHSQ (Figure 5). Results indicating their intent to seek help on the GHSQ and their actual help

sought on the post-GHSQ are shown in Table 12 from the greatest difference to the lowest as a percentage. Specific to the Learning Strategist source, intent to seek help and actual help seeking behavior had the highest match of all human sources (Table 12).

Table 12.

Intent to Seek Help and Actual Help Sought (N=25)

	GHSQ	Post-GHSQ					
Source	Likert Scale 5-7 Indicated Intent to Seek Help	Actually Sought Help from Source	%	Did Not Seek Help from Source	%	No Response	%
Learning Strategist	24	21	87.5	2	8.3	1	4.2
Faculty	23	10	43.5	11	47.8	2	8.7
Clinical Tutor	22	11	50.0	10	45.5	1	4.5
Peer	22	19	86.4	1	4.5	2	9.1
Faculty Advisor	20	8	40.0	10	50.0	2	10.0
Friend	20	17	85.0	0	0	3	15.0
Textbook	20	16	80.0	2	10.0	2	10.0
Internet	18	16	88.9	2	11.1	0	0
Partner	15	6	40.0	5	33.3	4	26.7
Upper Termer	14	11	78.6	2	14.3	1	7.1
Parent (Dr.)	13	5	38.5	5	38.5	3	23.0
DOS	12	1	8.3	6	50.0	5	41.7
Relative	11	6	54.5	4	36.4	1	9.1
Parent (non)	9	4	44.4	4	44.4	1	11.1
Other	4	1	25.0	3	75.0	0	0

Note: Likert Scale: Likely (5) to Extremely Likely (7)

Twenty-five participants completed both surveys. For each source, of the participants who responded on the GHSQ that they were very likely (7), somewhat likely (6), or likely (5) to use that source, Table 12 indicates how many responded that they actually got help from that source, how many did not seek help from that intended source, and how many did not respond (post-GHSQ).

The top sources indicated as potential sources of help by this group of participants were learning strategist (24/25); faculty (23/25); clinical tutor and peer (22/25); and faculty advisor, textbook, and friend (20/25). Sources that participants ranked highly as potential sources of help that were not used as a source of help were faculty advisor and DOS at 50.0% followed by faculty (47.8%), clinical tutor (45.5%), and parent (non-Dr.; 44.4%). Sources that participants ranked highly as potential sources of help that were used as expected were the Internet (88%), learning strategist (87.5%), peer (86.4%), friend (85.0%), and textbook (80.0%). The Dean of Students Office (DOS) was the source with the highest post-GHSQ non-response.

Regarding the learning strategy resources specifically, of the 25 participants completing both surveys, 24 indicated they were likely to very likely to seek help from a learning strategist and 21 indicated they came for an appointment with a strategist. Results were not as clear for the source, Internet, as this category label on the GHSQ and post-GHSQ was not specific to SGU's online learning strategy resources and was likely interpreted beyond just using the DES online resources so that it did not measure the intent to use this specific resource.

More specific data on intent to seek help and actual help sought was collected during the interviews. Twenty-two of twenty-seven interviewees stated during the interview that they had an academic problem that they sought help for from various sources. Sixteen indicated that they saw a learning strategist and all reported using online resources of one type or another. Seventeen interviewees completed the GSHQ and 13 completed the post-GHSQ with 12 completing both. All seventeen indicated it was likely, somewhat likely, or very likely that they would seek help from a learning strategist. Eight

indicated on the post-GHSQ that they did seek help from a learning strategist. Five indicated they did not have an academic challenge. Thirteen of the 27 interviewees indicated that they had explored or used MyCoach at least once.

The GHSQ and the post-GHSQ provided the participants who chose Other as a source with the option of writing in what Other meant. There were 153 participants who chose Other with 51 indicating a range of likely (5) to very likely (7) for their choice on the GHSQ. Only two of the 33 students on the post-GHSQ indicated they sought help from another source. Filled in responses with these higher values on the GHSQ included DES and AEP review groups, humans like faculty, advisors, counsellors, mentors, AEP facilitators, and physicians, and non-human resources like Khan Academy, YouTube, Firecracker, and First Aid. The two Other source responses on the post-GHSQ were MCQ books and therapist.

The results for question 2 indicated that for entering SOM Term 1 students the top matching sources between intent and actual help sought were the non-human sources (Internet at 88% and textbook at 80%) and the human sources learning strategist (87.5%), peer (86.4%), and friend (85.0%).

Research Question Three

Is there a difference in help-seeking behavior between SOM Term 1 male students and female students? The results for this question were obtained from the data on the GHSQ and the post-GHSQ. The results for the GHSQ (N=625) indicated that 48% of the participants were female compared to the School of Medicine (N=860) cohort with a female population of 45%. The female participation for the post-GHSQ (N=98) was 51% and 59% for the interviews (N=27). Overall by percentage on the post-GHSQ, females

sought more help from ten sources than males and equally from the one mandated source.

There was less than a 3% difference in the ratio of males to females between the entering SOM Term 1 cohort and participation in the GHSQ and a 6% difference in the ratio for those participating in the post-GHSQ. The ratio of males to females responding to the invitations to participate in an interview was equally represented. The difference was in who actually booked and attended an interview, with females showing a 14% higher interview participation rate.

Table 13.

Actual Help Sought Based on Gender

		Textbook	Internet	Learning Strategist	Clinical Tutor	Relative	Parent (Dr.)	DOS	Upper Termer
F	#	14/15	15/15	15/15	6/15	6/15	4/15	2/15	11/15
	%	93	100	100	40	40	27	13	73
M	#	5/10	7/10	7/10	6/10	2/10	1/10	0/10	6/10
	%	50	70	70	60	20	10	0	60
	Diff	F 43%	F 30%	F 30%	M 20%	F 20%	F 17%	F 13%	F 13%
		Peer	Friend	Partner	Other	Parent (Non-Dr.)	Faculty	Faculty Advisor	
F	#	13/15	13/15	5/15	1/15	4/15	7/15	6/15	
	%	87	87	33	7	27	47	40	
M	#	8/10	8/10	3/10	1/10	3/10	5/10	4/10	
	%	80	80	30	10	30	50	40	
	Diff	F 7%	F 7%	F 3%	M 3%	M 3%	M 3%		

The sample size of 25 for students participating in both the GHSQ and post-GHSQ is too small to draw any statistical conclusions aside from percentage of use. Almost 100% of females actually sought help from their textbooks while only 50% of males indicated they had actually used their textbooks to solve an academic issue (Table 13). All fifteen female participants indicated they actually sought help from the Internet while seven of ten (70%) of the male participants used the Internet to seek help. One hundred percent of the female participants sought help from a learning strategist

compared to seventy percent of the males.

The four categories that male participants sought more help than female participants were from clinical tutors (20%), other, parent (Non-Dr.), and faculty members (all 3%). The only help source that showed no difference between genders was Faculty Advisor, which can be explained by Term 1 students being mandated to see their faculty advisors. Overall by percentage, females sought more help from ten sources than males and equally from the one mandated source (Table 4).

The results for question 3 indicated that when comparing males and females completing the post-GHSQ, female participants sought more help from ten of the fifteen help sources including textbooks, the Internet, and learning strategists, while males sought more help from the clinical tutors.

Introduction to Research Questions Four and Five

Twenty-seven interviews with entering SOM1 students were carried out between September 30 and November 19, 2016. These interviews were semi-structured based on the questions listed in Appendix D and lasted between 5 and 25 minutes with an average of 12 minutes. There were 16 female interviewees and 11 male interviewees. No specific information was given to the participants beforehand beyond the invitation information in the email (Appendix G). Each interviewee was interviewed once and then sent a follow-up email with the transcription of their interview as a form of member checking asking for edits and any further thoughts on the topics covered during the interview. Twenty of the twenty-seven participants (74%) responded to the member check with either approval of the transcripts as is or with minor edits. Only two participants had further comments about the interview topics.

The interview questions are listed in Appendix D. During the interview period, three new questions were introduced into the question set based on interviewee answers and my reflections and as described in the Emergent Methodology section.

Pragmatically, data analysis has two stages: coding the data and interpreting the data (Knight, 2002) and as part of the emergent methodology, they occurred simultaneously. The qualitative interview data collection using Braun and Clarke's method of thematic analysis (2006) was followed for this study.

Thematic analysis of interview data. Phase 1: After each interview I sent individual audio recordings with de-identified labels to the transcription company. Once the transcriptions were returned, the individual files were saved in the original format and then read and edited. Any clear spelling mistakes were corrected; the files were resaved as Word documents and then sent to the corresponding individual participants. As a member check, each participant was asked to read and make any changes to the Word document and send it back to me along with any additional comments they might want to make. I reread any edited and returned documents and resaved them.

Phase 2: NVivo was purchased and initial coding nodes based on evident themes were created based on phase 1 reading of the interview data (Braun & Clarke, 2006). Further nodes were created as phase 2 progressed and each interview transcription was reread and coded with a total of 21 initial nodes.

Phase 3: The nodes were viewed in NVivo and several attempts were made to use the NVivo concept map feature. Both the node content and the concept map were displayed on the same screen so a second online software concept mapping app, CMap, was used along with the node content in NVivo. Actual student comments were color-

coded, copied and pasted into the concept maps. In order to keep the map size manageable, three separate maps were created. After I reread and reflected, summaries were made of each map. An integrated map was created from these summaries.

Phase 4: Despite taking time to reflect on the integrated map, it was apparent to me that there was something missing. Talking it out loud and with others led me to relook at the coded information for actual reports by participants of finding or not finding help and if help was found, how was it found. Another concept map was created with this information, summaries were made, and then this information was added to the integrated concept map. Both Level 1 (looking for patterns) and Level 2 (looking at the data set as a whole) were considered (Braun & Clarke, 2006).

Phase 5: Themes were defined and named (Figure 1). There were multiple iterations that evolved over time.

Phase 6: The thematic analysis using abductive reasoning (Morgan, 2007) is reported in the following section.

The coding process resulted in three emergent themes related to how entering SOM Term 1 medical students' perceptions of available time influence their help-seeking behavior regarding learning strategy resources: factors influencing student use of time, factors influencing student help seeking, and evidence of self-regulation.

As the interview questions focused on students' perception of time, help seeking, and use of DES learning strategy resources, two of the three themes that emerged from the data were directly about time and help seeking. When coding the data, the interviewee comments often went beyond the scope of the research questions. The concept map of the data (Figure 1) is included in its entirety in order to not lose what is valuable to other data

collected from the interviewees. However, only the themes and subthemes that answer the research questions 4 and 5 are described in detail.

Interview Categories. Participants willing to be interviewed were asked to indicate which of four categories of use or non-use of learning strategy resources they identified with. No explanation other than the list of choices was provided. The four categories were as follows:

1. I have not used either MyCoach and DES face-to-face learning strategy resources
2. I have used DES face-to-face learning strategy resources
3. I have used MyCoach
4. I have used both MyCoach and DES face-to-face learning strategy resources

For the 27 interviewees 6 indicated that they had used neither resource, 18 indicated that they had only used DES face-to-face learning strategy resources, 1 used MyCoach only, and 2 used both resources. When asked questions by the interviewer about the resources they used or did not use, the results were different than reported in thirteen instances (48%). In reality, only one interviewee did not use either resource, 14 used the face-to-face resource only, and 12 interviewees actually used both resources. There were no interviewees that used MyCoach only (Table 14).

Other pertinent information about the interviewees were that fourteen participants indicated that they were in the Academic Enhancement Program (AEP) (see description in Chapter 1, section 1) and seven received learning strategies help from the researcher after the interview concluded as a result of issues that were discussed during the interview. Ten interviewees did not fill in the GHSQ during orientation and 14 did not fill in the post-GHSQ with 9 not filling in either, 5 filling in the GHSQ but not the post, and

1 not filling out the GHSQ but doing the post-GHSQ (Table 14). Also, selection bias may be indicated, as students concerned with time, likely had no time for this interview.

Table 14.

Interviewee Statistics

Interview	Gender	AEP	Survey Monkey Stated Use	Actual Use	My Help After Interview	GHSQ	Post-GHSQ	Member Check
1	F	N	F2F	F2F	N	Y	Y	Y
2	M	Y	F2F	**Both**	N	Y	N	Y
3	F	N	Both	Both	N	Y	Y	N
4	F	Y	F2F	F2F	Y	Y	N	Y
5	M	Y	Both	Both	N	Y	Y	Y
6	F	N	None	None	N	Y	Y	Y
7	M	Y	None	**F2F**	N	N	N	Y
8	F	Y	F2F	**Both**	N	Y	Y	Y
9	M	Y	F2F	**Both**	N	Y	Y	N
10	M	N	F2F	F2F	N	Y	N	Y
11	F	N	F2F	**Both**	Y	Y	Y	Y
12	F	Y	F2F	**Both**	N	Y	Y	Y
13	F	Y	None	**Both**	N	Y	N	Y
14	M	Y	F2F	F2F	N	N	N	N
15	M	N	None	**F2F**	Y	N	N	N
16	F	N	F2F	**Both**	N	Y	Y	N
17	F	Y	F2F	F2F	N	N	N	Y
18	F	Y	F2F	F2F	N	N	N	Y
19	F	N	MyCoach	**Both**	N	Y	Y	Y
20	M	N	None	**F2F**	N	N	N	Y
21	M	N	F2F	F2F	Y	N	N	N
22	F	Y	F2F	F2F	N	Y	N	Y
23	M	N	F2F	F2F	N	N	N	Y
24	F	Y	None	**Both**	Y	Y	Y	Y
25	F	Y	F2F	**Both**	N	N	N	Y
26	F	N	F2F	F2F	Y	N	Y	N
27	M	N	F2F	F2F	Y	Y	Y	Y
Total	F 16 M 11	Y 14 N 13	F2F 18 MyCoach 1 Both 2 None 6	F2F 14 MyCoach 0 Both 12 None 1	Y 7 N 20	Y 17 N 10	Y 13 N 14	Y 20 N 7
%	F 59 M 41	Y 52 N 48	F2F 67 MyCoach 4 Both 7 None 22	F2F 52 MyCoach 0 Both 44 None 4	Y 26 N 74	Y 63 N 37	Y 48 N 52	Y 74 N 26

Note: The bolded text in the Actual Use column indicates the difference between the participants' stated use and their actual use.

Research question four. How does SOM Term1 students' perception of available time influence their decisions to seek or not seek learning strategies help? This research question looked at the influence available time had on decisions to seek learning strategies help. Since this was directly asked and answered with the majority of the interviewees, no coding was done for this research question. Interviewees' answers to this question are summarized below.

Through self-identification on the SurveyMonkey surveys, eighteen interviewees reported only using the face-to-face resources and another two reported using both the face-to-face and online learning strategy resources for a total of 20 of the 27 interviewees using one or both of the resources. One interviewee of the 26 indicated she did not have an academic issue but sought help anyway leaving only one interviewee reporting not needing and not accessing any help resources. However, actual interview answers indicated that 14 interviewees accessed face-to-face resources and 12 accessed both types of resources, still giving a total of 26 interviewees accessing at least one type of learning strategy resources.

From this pool of 26 that sought help, four interviewees reported available time as a factor that influenced their decision to seek learning strategies help. Participant 13 stated, "Oh yeah, many times, many times" to the specific question but then went on to speak about other sources of help, not learning strategies. Participant 18 also initially said yes,

> I definitely think that's true. I knew, for example, I really wanted to make an appointment with you. I heard really awesome things about you from a lot of people and that if I were to seek anyone it should be you and blah, blah, blah, but at the same time you want to be able to fix it yourself.

But her answer was more about the desire to fix the academic issue herself than an issue with time. A third interviewee, Participant 21 spoke about stress; the more stressed she got, the less time she had to get help. Participant 26 answered that time was definitely a reason influencing her decision to not seek help, yet she came anyway. I asked, “Did you find then it was a good use of time?” And she replied, “Yeah, I mean I always needed ... You always need an extra ear that's not another student.”

Of the remaining 22 interviewees, 16 directly said that available time was not an influence in their decision to seek or not seek learning strategies help. Participant 1 said, “I think time mostly in the fact that I needed it to match when I can be on campus. I live off campus”. Similarly, Participant 20 stated, “What would occur to me would be not that I don't have enough time, as much as the time when that might be an option, is not available to me.” Available time needs to match the availability of the help source.

Participant 24 responded that she had enough time to go get help but also indicated that she didn’t have enough time to get the things done that she needed to get done. She obviously had to make choices with her discretionary time and felt that seeking help was an important way to use that time.

Several interviewees recognized the time payoff of using some portion of available time to gain more from the help sought. Participant 27 stated, “Like me coming to see you. You know that is actually going to shorten your time because they'll probably teach you another skill or two that you don't have that could boost whatever you're struggling with.” Participant 16 added, “the way I view finding help is everything is worthwhile if you do it with quality. Even setting up an hour appointment or whatever is

still worth my time because I'm still going to gain something out of it. Participant 5 commented,

> Yeah, it was great relief to find that my meeting with [learning strategist] was only going to be 30 minutes. I blocked out an hour. I'll be like "I think this is one of those optimization steps that will save me enough time fast enough, that it's worth it." When she said, "Well we've got a half an hour." Perfect.

Participant 8 summarized,

> Yes in the fact that I already knew that DES had dealt with many other students in the past, so there's no point in seeking a third party when the most logical time management wise thing was to go where they told you from day one, which was DES, or if you're having psych issues, then Psych Services. That was really nice, because you didn't have to figure out where the heck you were supposed to go if you needed assistance.

Each of these interviewees balanced the time it would take for an appointment and the time saved from what they learned and could put into practice that would save time in the long term.

During the interview with Participant 3, we a discussion about my research study after the interview was over. As a result, she emailed me the next day saying,

> I was thinking about doing the survey this morning, and I was not quite as concise as I wanted to be, and I was thinking about the way I think about time here this afternoon. I decided that time is in fact currency, and the dominating factor about how I use it is how much I will get out of it. I don’t mind spending time to get help or use resources, as long as it is useful time. For example, I would rather spend half an hour meeting with a learning strategist than watching a YouTube for 10 minutes, because I will get way more out of a face-to-face meeting. I am also more likely to seek help from someone who I know won’t waste my time or try to just tell me the answer instead of helping me see it on my own. I had not really thought about time as currency until I talked to you yesterday, but that is precisely how I think about it.

Twenty-six of twenty-seven interviewees actually sought face-to-face help from various sources and 16 had a face-to-face appointment with a learning strategist. Four

interviewees indicated that time was a factor in the decision to seek or not seek help and twenty-two did not. The majority felt there was enough time to seek learning strategies help and that this help was worth the time spent acquitting it.

Research question five. How do SOM Term 1 students make the decision to spend time seeking learning strategies resources help? While there were three themes that emerged through the data collected and coded from the interviews through thematic analysis, the resulting concept map was not designed to answer any one specific research question but rather to reveal what themes existed in the data. The final concept map is displayed in Figure 6 but only the themes that provide data to answer the research questions are addressed in the text with headings from the concept map.

The first theme, factors influencing student use of time, included two subthemes, barriers to time and student perceptions of time. The second theme factors influencing student help seeking included lack of knowledge, university help sessions, word of mouth, and help-seeking perceptions and misconceptions. The third theme evidence of self-regulation was divided into self-regulation when managing time and self-regulation when seeking help. Both of these subthemes were further divided into motivation, reflection, and strategies (see Figure 6).

Theme 1: Factors influencing student use of time.

Barriers: Student specific barriers: Missing background content knowledge. Student specific barriers included missing content background and missing process knowledge. Students missing key content have to learn the missing pieces before starting to learn what their peers are learning. This adds a burden to their already full schedule. A further complication that may come with missing background content knowledge is that

students may also be missing the knowledge of how to approach learning the missing content. And, just gaining the knowledge itself may not be enough to overcome the barrier because it takes time to become effective with new learning strategies.

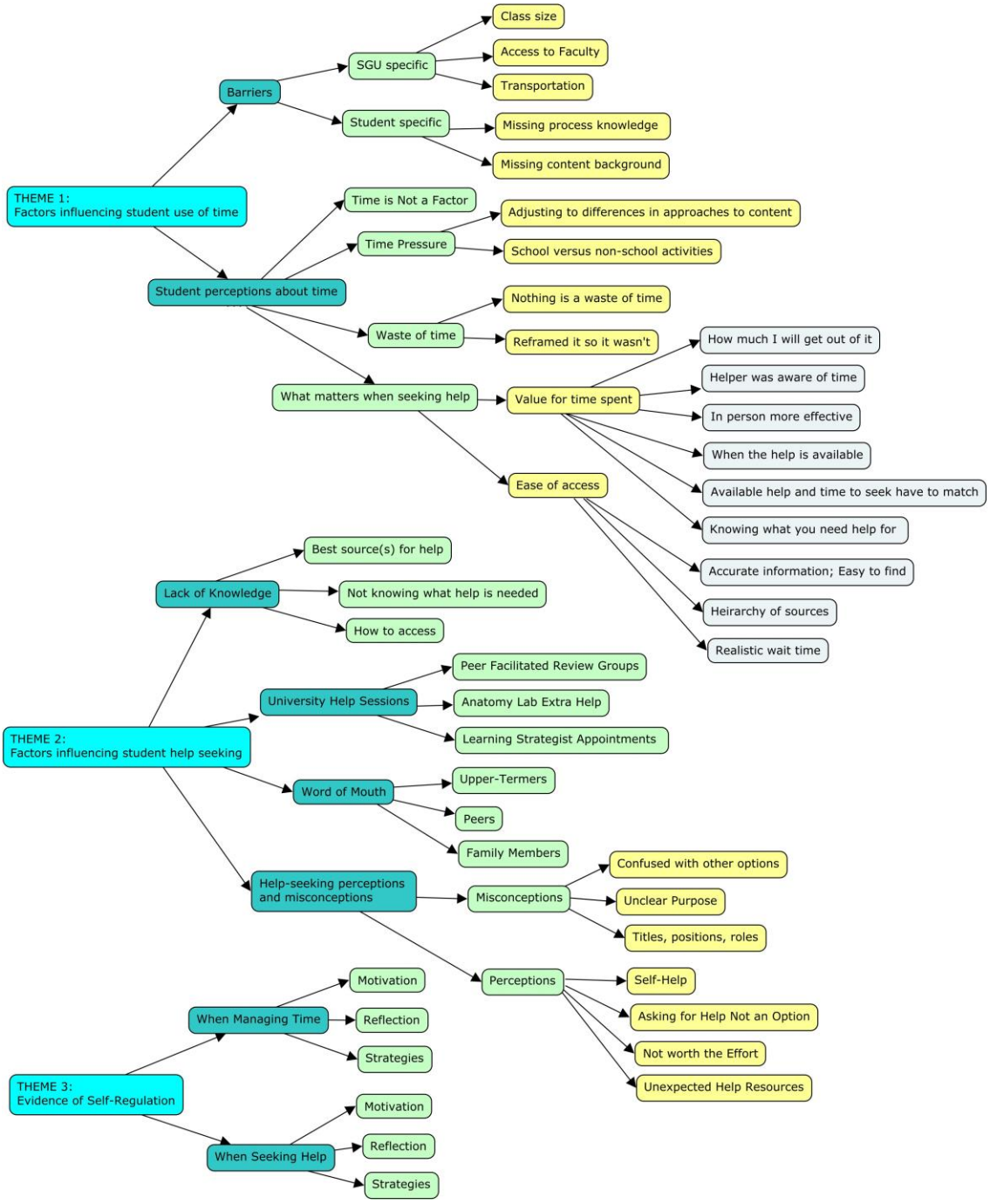


Figure 6. Concept map of themes and subthemes from the interview data.

This was Participant 1's experience as she tried to become proficient with a schedule, having sought help but not finding it helpful.

> I know that DES told us to really have a schedule and I tried. It never works out. I'll make a schedule for myself and if I deviate from it, I'll get upset. When that upsets me then I'm even more upset to study and I can't concentrate and whatever…When I started to do the actual schedule for myself, 5 to 7 I study or do this or that, it just got me annoyed so I kind of dropped it.

This student tried to create an effective schedule and the inability to do so created a downward spiral of increased frustration and decreased concentration to the point of not trying anymore. Not only does she not have a schedule to help keep her on track and use her time effectively, but she also loses time worrying about it in the moment.

Equally, the barrier may be that the student has recognized a deficiency but has not yet reached the point of implementing a change in behavior. As a result of the probing interview questions Participant 24 commented, "I think I should give myself a time limit for studying. Sometimes I review one subject for too long and not enough time to go to the next subject. I think that's my issue." This interviewee could clearly identify her problem when specifically asked, but to this point had not changed her behavior and made the decision to seek help.

For some students it takes time to master new approaches to learning and that negatively impacts the amount of time left to learn the content.

> I fully believe in your structure of previewing, practice questions, all that. I guess my question is how long do you think it takes to actually master that schedule or that idea? I feel like it is very ideal, but there's so many mistakes that you come up with during the day. (Participant 21)

These interview comments confirm that both missing content and missing process knowledge seriously impacts the time available to students for learning the material and is one of the many barriers entering students face in Term 1 of medical school.

Student perceptions about time. The second subtheme under Factors Influencing Student Use of Time is student perceptions about time. The subthemes in this category are time is not a factor; time pressure; waste of time; and what matters about time when seeking help.

Student perceptions about time: Time not a factor. Many interviewees stated that time was not a factor that influenced their choices and decisions. Time did not limit them from doing what they needed to do. Participant 15 stated, “I don't think that time really influences [my choices and decisions], for me at least.” Participant 12 commented, “For the load we have, surprisingly I've found time. I've made time, I guess” and Participant 19 said, “I haven't had too much struggles with time. I'm actually finding myself with more time than I expected, like free time actually than I expected.”

Student perceptions about time: Time pressure. Some participants described time pressure as a factor by influencing their decisions about using their discretionary time. Interviewees cited two specific time pressures: adjusting to differences in approaches to content and school versus non-school activities.

The content of each course, and in some cases each topic, in SOM Term 1 can require students to use different learning approaches, and because of this, more time can be needed to learn the material. Anatomy was one subject area mentioned by interviewees where they felt a significant time pressure. Participant 4 commented,

> That's what I'm worried about right now because it's a completely new way of approaching something. I'm going to my first DES tomorrow for anatomy…I'm hoping it will help reinforce because for me at least I think anatomy is one of those subjects that you just need to sit down and literally just hammer that in and figure out a way that works.… I'm hoping that, I've been doing that this whole weekend, just looking at anatomy.

Student perceptions about time: Waste of time. The interviewees were asked if there were any times when they sought help, or were in DES provided help sessions, that they felt the activity was a waste of their time. Not one student gave a definitive answer indicating that these sessions were a waste of their time while several indicated the opposite. “I haven't felt anything was a waste of time” (Participant 12); “Nothing is a waste of time. If I thought of it as a waste of time then I really did waste my time thinking that” (Participant 16); and “It's a waste if you think it's a waste kind of thing” (Participant 4).

Several students did qualify that there were times where they might have wasted their time but they changed the way they perceived the experience so that it was not a waste.

> I think there was only once but then I reframed it because I'm so trained to do that. I think it was the ones after exam one or exam two. The post exam review. I can't remember which one it was. I was like, I don't know if this was the best use of my time but it normalized my experience. This is really what it's for” (Participant 16)

Participant 27 also indicated that making a decision to spend time seeking help form a learning strategist was not a waste of time. "Like me coming to see you. You know that is actually going to shorten your time because they'll probably teach you another skill or two that you don't have that could boost whatever you're struggling with.”

Commenting on attending DES review groups in particular, Participant 17 stated, “Only if I was really tired and I couldn't focus. That was the only time it was really a waste. It was never the facilitator. You always got something from it.” Interviewees rarely felt their time was wasted by the help sessions they attended.

Student perceptions about time: What matters about time when seeking help: Value for time spent. Interviewees indicated that what matters to them when using discretionary time to seek help fell into two main subthemes: Value for the time spent as well as ease of access. Specific points made about value for time spent included making sure what they got out of a help session was effective, that the helper was aware of time, that going in person for help was a more effective use of time, that when the help was available had to match when it was needed, and that knowing what help was needed was sometimes difficult to determine.

Value for time spent was an important consideration in seeking help. In speaking with Participant 16, the asked, “What determines who or where you seek and spend the time to find help?” and the answer was “I think the way I view finding help is everything is worthwhile if you do it with quality. Even setting up an hour appointment or whatever is still worth my time because I'm still going to gain something out of it.” Building on this concept of value was the comment by Participant 27 stating, “I believe the biggest challenge in seeking help is knowing what is valid and what material will further waste your time.” There were various elements involved in getting value for time spent. One of those elements is that the person providing the help is aware of and makes good use of the time when offering help.

Participant 5 made this point by describing how reassuring it was to find that the learning strategist she was meeting for academic help was aware of the value of her time.

> Yeah, it was great relief to find that my meeting with [name of learning strategist] was only going to be 30 minutes. I blocked out an hour. I'll be like "I think this is one of those optimization steps that will save me enough time fast enough, that it's worth it." When she said, "Well we've got a half an hour." Perfect.

Another factor mentioned about getting value for the time was being able to meet with someone in person. Several interviewees, when asked about time and face-to-face and online resources, mentioned that meeting with someone in person was preferable. When asked about checking out MyCoach or the DES website, Participant 21 stated, “No, I didn't. I would much rather in person” and Participant 5 noted,

> I had this big grandiose scheme of what I was going to do with these resources. As I found myself doing that, I thought "No, I need to go see a person who's gonna look me in the eye and tell me one thing to do and then I'm gonna do it.

Participant 3 stated the same sentiment about viewing meeting face-to-face compared to watching videos online.

> I feel like in person things are much more efficient and effective. I'm way more likely to do something in person because I know that I'll get more out of it. Whereas, if I spend an hour watching a video, it isn't as helpful.

To sum up, some interviewees indicated that online resources were better when they came recommended and when the help needed was obvious, whereas face-to-face resources appeared to have greater value when the students themselves were unsure what they needed. Also, some interviewees had no issues with using online resources for content help but did not consider the Internet as a resource when process knowledge was lacking. Participant 13 indicated this dichotomy when she responded to the question, “Is your preference to use stuff online or would you prefer to meet with people in person?” by answering,

> I think a little bit of both. There are times where, for example, the lab videos for anatomy were a great resource, but when it comes to asking questions or clearing up queries, I have to go to somebody who knows more or somebody who's not a friend or a authoritative figure who knows, who can give me facts. Not just a friend or someone on the Internet.”

While meeting with someone face-to-face was preferable, help needs to be available when the student has discretionary time. If the time and the help do not match, then the student either cannot get the help or has to miss academic sessions to access the help. This timing was evident with Participant 23 who did not attend a workshop on concept mapping only because the timing of the session didn't work for him. Part of problem in providing help sessions is that different students need the sessions to be offered at different times. The challenge is to meet the needs of the majority of the students at any given time.

Students also felt that there were times when they recognized they might need help but in the moment did not know enough yet in order to get value from accessing help. I asked Participant 18, "Do you spend it on ways to find help or do some students have the thought, well, I don't have time to go do that and then they try and fix it themselves?" and she answered,

> I have to at least get your feet wet and see what it's even going to be about before you even have a question. How can I come in and be like, "I need help," but I can't even ask you what I need? I feel like that's an element of it too.

Student perceptions about time: What matters about time when seeking help: Available time and time to seek help have to match. One of the factors influencing student help-seeking was time. The available time has to match the available help. As Participant 20 pointed out, "What would occur to me would be not that I don't have enough time, as much as the time when that might be an option, is not available to me." Participant 9 added, "If you make it a priority to make time, then yes. If you make time to say something's wrong. If I need to go talk to somebody, then yes, there's enough help." The

time to seek help and the help sought has to work together and the less effort that takes, the more time the seeker has to make use of the help provided.

Student perceptions about time: What matters about time when seeking help: Ease of access. Ease of access also matters when seeking help. Access to help sources has to be timely. Important factors interviewees mentioned regarding ease of access were the accuracy of information about the help source, a ranking of help sources, and a realistic wait time.

Without accurate information about the help source, students will not be able to make effective decisions about use or non-use of any particular source of help. A summary of Participant 8's struggle with finding accurate information is as follows.

> The question is we know that time is a factor, but what other things kind of play into your thinking about do I need help or where to go? You talked about not knowing where offices are and maybe not knowing what the contact information or the rules on how to do it are, so we've got time, location, place. Is there anything else?

She responded by speaking about the emotional factors that influenced her use of time.

> Another example was about DES groups. Participant 1 stated,
> I was actually looking to sign up for the DES sessions for next week, but then a lot of them filled up and I don't know which ones are actually helpful. Since I had the issues with the DES before I'm reluctant to spend those 2, 3 hours getting from home to here, and then going to a DES session, and then coming out and being like, "Wow, okay. That didn't help.

As well as accurate information about help sources, some student's value certain sources over others based on ease of access. One interviewee outlined a hierarchy of the value of the human help resources.

> I tend to go to things that I'm definitely more near so I can get a better return on what I'm trying to go for. Student learning strategist, advisor, faculty would be the ranking of ...Students that are family friends and people I've known, even then, there's a difference. If I know I can talk to a friend who's in my term or talk to someone who is a mentor, I'll message them first. Then I'll reach out to a

> family friend student who's had it in previous terms to see if they have any resources or help. (Participant 9)

Part of the issue this interviewee indicated was the wait time. Asking another student for help would happen sooner because there is a time lag in getting an appointment with a learning strategist.

> Knowing that I can go to a footstep buddy...My advisor is also a little harder to reach. In a ranking order, I definitely go to a student or a learning strategist first but more likely a student because their return time on an answer is much quicker. Even a learning strategist, I would go to them first but I have to wait. (Participant 9)

Many interviewees noted that their efforts at obtaining help were generally successful but that what mattered when seeking help was a sense of value for time spent and ease of access. Value for time spent meant getting the help they needed, feeling the helper was aware of the time constraints, having a face-to-face option, having the help/time availability match, and having a sense of what help to ask for.

Theme 2: Factors influencing student help seeking.

The subthemes under Theme 2 include lack of knowledge, university help sessions, word of mouth and help-seeking perceptions and misconceptions.

Lack of knowledge. Help is difficult to obtain if the help-seeker does not have the relevant knowledge to make the task work in the time they have. The topics under lack of knowledge included best sources for help, not knowing what help is needed, and how to access help.

Lack of knowledge: Best sources for help. The quality of the help source matters to students searching for answers to academic challenges. These students want to be able to find the best source of help for whatever issue they are experiencing in the time available to them. However, not all sources of help are equal. Participant 14 shared,

> Personally, my issue is not understanding how it works. It's the difficulty of putting what I know onto answering a question. For someone like me, I'd want to know someone who either specialized or had the same issues that I used to have. If I were looking for some of my peers to help, I don't want someone who knows everything. I want someone who is like, "Yeah. I had problems taking tests too." Then I can communicate with them, and understand what have you been doing to try and fix that?

Participant 17 indicated finding the review group resources helpful, especially those posted online after the sessions.

> Yeah my AEP group in particular puts really good summary PowerPoints on [Facebook]. One of the problems that I have is picking out all the high yield stuff and the AEP group does that really well. The DES groups too have even links to YouTube videos and stuff I use.

Lack of knowledge: Not knowing what help is needed. At SGU in Term 1, the curriculum is systems based, which means that the students learn six or seven different areas of content like physiology, anatomy, and biochemistry, in a format structured and delivered around a system, like cardiology. Term 1 has three systems modules (Foundations to Medicine (FTM); Musculoskeletal (MSK); and Cardio Pulmonary Renal (CPR)) and the students have to figure out how best to approach the material for each module. If they have never taken the content or had this structured approach before, there is a learning curve that can make it difficult to know what help is needed.

Participant 18 commented about not knowing the best source for content help at the module level.

> It's kind of hard to gauge because it's like, for us, each module is different. You totally have to revamp everything so it's kind of like, wait, what am I even going to ask when I go in because I don't even know. I have to at least get your feet wet and see what it's even going to be about before you even have a question. How can I come in and be like, "I need help," but I can't even ask you what I need? I feel like that's an element of it too.

While Anatomy content is limited in the first module, it has a significant number of lectures and labs for the second and third modules. Regarding this subject, Participant 1 commented, “For Anatomy right now, a lot of it is just rote memorization. I think it's hard to get extra help from someone when they're like, ‘What is this bone,’ and you're like, ‘I don't know.’” The type of help these student needs is not just content (bones) but about the process (the learning strategies) and it is important that students know the sources of help for both academic content and academic processing issues. Students need to know what help is needed in any given situation and they also need to know how to access that help.

University help sessions. Most of the organized help offered by the university is optional and includes DES peer review groups, learning strategy appointments, faculty office hours, open lab hours, and the Anatomy Lab Office Hours. However, in some instances help can be mandated for a student including through the Academic Enhancement Program (AEP; see Terminology in Chapter 1) and seeing a learning strategist for a face-to-face appointment.

The DES offers two types of facilitated review groups led by upper-term students. The first are DES groups, which have an open sign-up for any student in Term 1 and a group size limit of 15 students. Attendance varies from week to week depending on which students choose to attend which groups. Mandatory AEP groups are the second group and are limited to the same 8 AEP students every week with the same facilitator. Both groups meet for one hour and the facilitator provides opportunities for attendees to review the weeks’ content. Upper-term facilitators provide a source for academic help in

their group setting and also as an individual resource to students offering advice. As an individual source of help, they are described in a later section.

Both DES and AEP groups offer various ways for Term 1 students to get help. Students are expected to come prepared so that they can “create, solidify and confirm knowledge and to make connections and integrate information learned in different courses” (personal communication, March12, 2017). Students in AEP have to attend their AEP session plus one open DES session each week.

Despite being a mandated activity, not one of the 14 interviewees in the AEP program had anything but praise for the help offered through their review groups. Participant 2 indicated the various levels of help the AEP group provides. “I'm an AEP, which I also consider an additional resource, AEP is fantastic. Learning from them, they really bought in and told me no, you got to stop doing that. You're going to tire yourself out.” Attending the group is not just about reviewing the content but also having a resource that operates in real time providing guidance about approaches to learning the content.

AEP review group facilitators also provide resources to the group and then post them online. Participant 9 stated,

> I like AEP. What I really like is when the set resources, it saves that time from searching and trying to build my own report. Yes, I always believe in modifying. Double-check that resource, and if that takes a little bit of time, that’s okay. Now you’re making sure you spend less time later down the road from correcting errors. If you learn something wrong the first time, then you have to go unlearn it and then re-learn it. That also spends time.

The open DES review groups received similar praise from interviewees. Participant 21 shared, “I like the DES sessions a lot.” Participant 11 discussed that most of the time the DES review sessions were helpful and a good use of her time. However

when I probed more deeply and asked, “Tell me a little bit more about why they wouldn't be.”

> Participant 11: Sometimes maybe I don't know exactly what I need.
> Me: How does that make it not a good use of your time?
> Participant 11: Yeah. Because going…and then it's too general instead of getting to a specific detail that will be the game changer.

Both the mandated AEP and open DES review groups provided face-to-face help and online resources that interviewees found helpful.

Learning strategists offer face-to-face appointment with individuals or small groups as well as topic specific workshops. Some students are proactive and make appointments early in the term.

> After that first week I wanted to make sure that my study techniques or whatnot, that they were going to be good enough so I came to a learning strategist, actually, for help. One-on-one help. Just to make sure I was going about this the right way, especially because we had just started and I was like, I don't want to be behind at all, so that's what I first did. (Participant 12)

Other students attend other sessions learning strategists are a part of and discover that individual appointments are an option. Participant 21 stated, “I like the DES sessions a lot, so I would go to upper termers first. Then I met you [the researcher] again during the meeting, and you recommended that I make an appointment with a learning strategist, which was you.”

Still other students make appointments during the term as the need arises. Participant 5 sought help with face-to-face appointments to balance a self-help tendency. She commented, “I'm always trying to solve way too many problems on my own, but what I'm striving for is to try to go to the learning strategist and just work on one thing at a time.”

Word of mouth. Interviewees mentioned helpful sources and advice came via word of mouth; sources most mentioned included upper-termers, peers, and family members. These sources often recommended other people and other resources that would be helpful.

SOM students in Terms 2 through 5 can be a significant source of help for students in Term 1 in many ways. As indicated earlier, some upper-termers are facilitators for the peer led review groups and provide academic support in that capacity. However, many students ask individual upper-termers (both facilitators and non-facilitators) in more informal settings about effective resources and study approaches. “I would ask my friends that are a term ahead and be like, ‘Hey, do you know any videos?’ Or they tell me, ‘Don't waste your time with that. Here's an embryo video that's going to sum it up in 5 minutes. Just focus on clinical stuff’" (Participant 18). “A lot of it is word of mouth from DES sessions. A lot of the times the upper-termers will say, ‘Hey, check out this website,’ or even fellow Term 1 classmates” (Participant 23). Participant 14 commented,

> My AEP facilitator actually recommended that I check out one of the DES teachers and I actually knew what that was ahead of time. It was in the back of my head and it's something I thought about. When my teacher did approach me about it, it was familiar ground for me.

Peers are students in the same cohort. They can be a source of help to reach out to and several interviewees reported using peers. “I check my groups, I ask my peers. I find out what is the best way to approach this?” (Participant 2). Often asking for help from a peer is not isolated to just that one source; interviewees reported seeking help from multiple sources, one of which included peers. Participant 3 stated,

> I seek help from my roommate and from DES for the most part. I guess now, in Anatomy Lab, the professors are there, so I've been asking them questions. But I haven't gone to office hours. Whereas, I come to DES sessions and I talk to my roommate.

Participant 9 indicated a hierarchy in his approach to choosing whom to go to first. “My advisor is also a little harder to reach. In a ranking order, I definitely go to a student or a learning strategist first but more likely a student because their return time on an answer is much quicker.”

Interviewees indicated they actively asked about and looked for recommended sources and resources. Word of mouth was an important method of finding help sources and resources.

Help-seeking perceptions and misconceptions: Misconceptions. What was evident in going through the interview transcripts was the number of accounts by the interviewees of misconceptions about different aspects of seeking help. These included confusing one source with another source, not understanding the purpose of the help offered, and mixing up the roles, titles and positions of the helpers. Moreover, the interviewees were not necessarily away of these misconceptions.

Participant 22 did not use the strategic online learning strategy resource, MyCoach, because she had just taken the SGU Medical School Assessment Program (MSAP) and commented, “I know a lot of the videos on there were from that, and I watched them when I was in MSAP.” This is not an accurate statement as the MSAP videos are not part of MyCoach and MyCoach is so much more than the limited videos available for MSAP.

Some interviewees misunderstood the purpose of the help offered. One interviewee attended a DES post-exam review session led by a learning strategist.

Participant 16 described her experience, “The post-exam review...This isn't a finding an answer place. This is let me just normalize it. I just did shitty. I wasn't the only one.” On the one hand, it is interesting that she had the insight to reframe her experience from what the session was expected to deliver to what it did deliver for her. On the other hand, the session was originally designed to offer some answers to participants about their approach to learning the content covered on the exam and she felt she did not get that from the session.

Despite MyCoach being demonstrated to the entering SOM Term 1 students during the DES orientation session (attended by 722 of 860 students), as well as being used in context during the DES Study Skills Fair (mandatory for the AEP students and attended by one-third of the non-AEP students), there were several comments by the interviewees that indicated they misunderstood the purpose of the site. When Participants 23 and 25 were asked, “If you knew there was a website that had really good learning strategy resources on it, would that be something you would go online to use?” they both answered yes. Yet, when asked if they had used MyCoach (a website that had really good learning strategy resources on it) they both said no.

Participant 1 commented, “When I went to a DES session and they showed us the MyCoach, it seemed more of a general, you know if you're really lost, it'll help you really get yourself together and help that way.” Again, this is not the purpose of MyCoach, which Participant 2 missed as well stating, “I guess I did try the MyCoach at first. I didn't really find anything that I personally needed from that just because I didn't think I had any issues going beyond I guess academically wise.” MyCoach was designed specifically to address academic issues.

The titles of faculty and learning strategists, as well as the positions they hold, are important for students to identify correctly. It is difficult to get help if there is a mix-up with the helper's name or position. When speaking about a meeting with a faculty member during the interview, Participant 27 got both the professor's name and gender wrong.

Participant 14 commented, "When I went to the teacher here, my grade went from a 71 to an 88 strictly just because she told me how to take a test itself, how to approach the questions." To clarify, "When I went to the teacher here", here is referring to DES and "the teacher" is a learning strategist, not a teacher. Participant 1 stated, "I didn't do any one-on-one learning strategists" yet the person she met with and referred to in the interview was a learning strategist.

Help-seeking perceptions and misconceptions: Perceptions. The interviewees' perceptions about help seeking included self-help, feeling that asking for help was not an option, asking for help was not worth the effort, and the help resources were beyond expectations.

Each interviewee was asked some question about self-help. Several indicated that while trying to solve the problem themselves was their first course of action, at some point they realized that they needed to find help elsewhere. I asked Participant 16, "In seeking help, do you sort of see yourself as a self-fixer? Or do you see yourself as, oh I recognize I have an issue let me go get help right away?" Their answer was,

> I think it's both. I think I have to take a step back sometimes and what's not working? If I really don't have an actual answer of some sort or even a clue, that's when I'll see help from others. If I have a clue I'll go with it until I can't find another clue then I'll go find somebody else.

Similarly, Participant 24 tried to solve her academic problem herself and it was only after poor grades on exams that she looked for other help sources.

> Tried to do different methods. Tried to do my mapping. Tried everything and then, it used to work for me, and when it come to third and fourth exams, that's when I say that it's not working anymore. That's when I started to seek more help outside.

Interviewees found that the balance between fixing academic issues themselves and getting outside help was not always easy to maintain.

The issue of sessions filling up was also mentioned by Participant 1, “I was actually looking to sign up for the DES sessions for next week, but then a lot of them filled up and I don't know which ones are actually helpful.”

On a positive note, one interviewee was not expecting robustness of the help resources offered by Student Services at SGU.

> I have to admit that I was a little bit surprised that SGU had something like DES. Also, the fact that you have all these AEP, IEP programs, I was a little surprised by that just because when I initially got here my thought process was, "We're going to throw you into the hot water and let you boil or die," basically. (Participant 19)

Theme 3: Evidence of self-regulation.

The subthemes under Theme 3 included when managing time and when seeking help. Each of these subthemes was further divided into motivation, reflection, and strategies.

When Managing Time. Self-regulated learning, as discussed in chapter 2, is a crucial asset in medical school. While the current study specifically focused on time and help seeking in particular, the interviewees showed evidence of self-regulation when managing their time and when seeking help. While not specifically solicited, the interviewer noted self-regulatory behaviors in three specific categories: motivation,

reflection, and learning strategies (de Boer et al., 2012).

Participant 9 spoke about trying "to look for pre-made resources that takes less time" and changing DES sessions to times allow for more studying and for less travel time. "It's in a more placed manner and then I can go straight into studying. I don't have to get up from the table. I can just stay there and continue studying." His comments indicate the level of reflection that occurred for him over time as he determined a more effective use of his time.

When Seeking Help. Two interviewees arrived at SGU highly motivated and with a plan to seek help before classes. Participant 9 stated, "I had predetermined that no matter what it was, I was going to seek help, but that extended hand gave us the reassurance that it was available and the school is willing to provide." And Participant 11 commented, "I went and looked for help before classes even started, just to get me started on the right track."

Two other interviewees were highly motivated to seek help early as a result of previous negative academic experiences not seeking help. Participant 1 indicated, "I got into trouble in undergrad was because I didn't seek help. Now I learned from that mistake." Participant 5 revealed,

> I went through the MSAP program also. I had a leg up as far as the people who most need help are the least likely to seek it. That was my undergraduate career to a T. The better off I was, the more likely I was to spend some time in office hours, the worse off I was the more likely I was like yeah I don't need help. No one could find out that this isn't easy for me.

Often, there is little time in medical school for self-reflection. Yet those students who make the time to critically think about their approaches to their learning can become more effective learners. Participant 12 used reflection to figure out the best sources of

help for the situation and then to follow through by making an appointment with a learning strategist.

> After that first week I wanted to make sure that my study techniques or whatnot, that they were going to be good enough so I came to a learning strategist, actually, for help. One-on-one help. Just to make sure I was going about this the right way, especially because we had just started and I was like, I don't want to be behind at all, so that's what I first did.

Another interviewee determined that using too many DES review groups or using them too often was not going to be a sustainable strategy over the long haul. “DES is great, but I don't want to be so reliant on it. I want to slowly kind of transition to where I can work independently”. Reflection led Participant 2 to find a healthier balance between self-help and group help.

One interviewee reflected that it was difficult to seek help before they had figured out exactly what kind of help they needed. Participant 18 commented,

> Wait, what am I even going to ask when I go in because I don't even know. I have to at least get your feet wet and see what it's even going to be about before you even have a question. How can I come in and be like, "I need help," but I can't even ask you what I need?

An indication of being a self-regulated learner is the ability to leverage and learn from past and current experience.

When asked, “You haven't had any issues with time, and have you felt like if you needed help, the resources were clear enough on where to go get help?” Participant 23 responded,

> Mm-hmm (affirmative), yeah. I guess I haven't found ... I guess I'm just, individually, I like to take the time and figure it out on my own, and if there was a situation where I didn't think I could do it on my own, I would probably reach out, but so far, I think I've ... Everything I've been able to push through.

After trying to solve their academic issues on his own, Participant 14 shared,

> My first goal was to solve it myself, because my personal problem is I'm a poor exam taker. I like to relate to a little kid with those little blocks, like the square, a circle and a triangle. I'm that kid trying to put the square into the circle hole. I have all the information there, I just can't put it in. My belief was that I could handle it, I could do it myself. Then the first exam I got a 71 and I was like, "Clearly I can't." When I went to the teacher here, my grade went from a 71 to an 88 strictly just because she told me how to take a test itself, how to approach the questions.

Part of learning process is making mistakes and learning from them. Problems arise for medical students when they hang on to unproductive learning strategy approaches for too long. This is part of why managing the balance between solving academic issues on their own and seeking help from others has to be timely and to do it effectively takes self-regulation.

Question 5 results indicated that for many interviewees time was not a factor when they made decisions to spend time seeking learning strategies resources help. Of those interviewees that did make decisions to seeking help based on time considerations, there were multiple factors involved that included ease of access, finding reliable sources, and relying on clear communication about accessing the help in a timely way.

Interview – Mismatch between interviewee statements. Of the 27 interviewees, 12 completed both the GHSQ and the post-GHSQ and five of these participants answered no to the post-GHSQ “Did you have an academic problem this term?” In three cases, when their answers to this survey were compared to their answers during their interviews, they did not match.

Participant 1 indicated she was having the “most issues with is Histology. I asked [a learning strategist] to set me up with a Histology tutor so I have a small group meeting for that, and I also have a study buddy that he set me up with.” She also indicated she was having trouble learning the embryology content. When I asked, “Have you thought about

going for help for embryo? Have you thought about talking to faculty or clinical tutor?" She responded, "Yeah. I was actually looking to sign up for the DES sessions for next week."

When I asked Participant 8, "Did you find you needed help academically at any point?" Her response was, "Yes and no. Understanding the material, no, but time management and adjusting to the campus life and being back in school, yes." And when asked, "Where did you go for that help?" She answered, "I came DES and I met with someone and we talked about test taking strategies, because that was also something I needed to work on. Then I mostly just talked to my peers and I went to a couple test anxiety workshops put on by DES. I also talked to AEP leader after the first test."

Participant 12 was asked, "Have you had any academic difficulty? Any problems?" She answered, "Luckily, no. Since the beginning definitely I reached out for help so ... " Since she indicated she reached out for help, I repeated her statement as a question, "You have reached out for help?" She confirmed, "I have reached out for help" so I inquired, "Okay. What sources did you reach out for help to?" She replied,

> Right away, well especially, I went to the workshops that ... Any workshop that DES has had, I have definitely gone to. After that first week I wanted to make sure that my study techniques or whatnot, that they were going to be good enough so I came to a learning strategist, actually, for help. One-on-one help. Just to make sure I was going about this the right way, especially because we had just started and I was like, I don't want to be behind at all, so that's what I first did. I've been attending DES workshops, definitely. I'm also in AEP, so I have my facilitators there.

In each case, the interviewees' understanding of what was being asked varied in different situations. Participant 1 answered no on the survey question asking if she had had any academic issues yet she clearly described having academic challenges during the

interview. Participant 8 answered no on the survey and yes and no during the interview elucidating a difference she saw between a straight content issue and issues with outside influences on learning the content. Participant 12 indicated she had had no academic issues on the survey and in the interview yet explained how she went for help right form the beginning.

The researcher's journal. The researcher's journal was one component of the triangulation carried out to add clarity and verification of the thematic interpretation of the interview data (Stake, 2005) and was analyzed using a narrative approach. A selective focus was adopted based on the my criteria of key decision points in the chronology along with key themes (Cohen et al., 2011). The analysis stages were the following: text selection based on key selection criteria, analysis of the text for meaning, development of working hypotheses, interpretation and checking, and construction of the final narrative (Cohen et al., 2011).

> "By 'telling a story' a narrative account, case study or biography breaks with the strictures of coding and the disembodied text that can too easily result from coding and retrieval exercise; it keeps text and content together, it retains the integrity of people rather than fragmenting bits of them into common themes or codes, it enables evolving situations, causes and consequences to be charted" (Cohen et al., 2011).

The key selection criteria were developed inductively and emerged as the study proceeded and the resulting concept map is displayed in Appendix H.

Narrative analysis of the researcher's journal. One reason to choose AR is to discover solutions to everyday, practical problems encountered by practitioners (McKernan, 1996) and thus provide benefit to students from new insights and knowledge gained resulting in changed practice (Sagor, 2005). Since a narrative cannot record everything, I have chosen to selectively focus on key decision points in the narrative and

key themes (Cohen et al., 2011). The concept of the 'story of the case'…not in a chronological sense but through an integration of inferences and interpretations of events organized to tell a story of the whole" (Simons, 2009, p. 5).

Appendix I lists the chronology of events my researcher's journal is based on with the eight key decision points and four key themes. The four key themes were unanticipated findings, things I learned, benefit of the interview process, and changed practice.

Unanticipated findings. During the coding/analysis stage, I did not anticipate that the interviewees would be searching the Internet for content help but not for learning strategies help. While interviewing Participants 20 I asked, "The Internet wouldn't be somewhere where you could go and find help?" and he replied, "That hasn't occurred to me." With Participant 21 I then specifically asked, "If you had a learning issue, would you think about the Internet as a source to go find out how to concept map or write better notes?" Participant 21 replied,

> I stumbled upon that looking for content. There are some videos where they show you how to map out certain ideas. That happened with the axillary artery. This guy did a really good diagram. It really helped me absorb that information. It wasn't like ... I didn't purposefully pursue it. I just stumbled upon it.

These interviewees indicated that looking for online learning strategy resources was not something they had considered or were looking for.

This led me to observe in my journal, "Students would use an online SGU resource if they knew about it - time isn't the issue for seeking help as much as clear information about the help available and how to access it quickly - prof office hours, anatomy lab extra help." I found surprising that several times when I asked about using MyCoach, the interviewees indicated that they either did not know about it or had not

used it. Later in the interview when asked if they would use an online SGU resource those same students said they would. This indicates that despite efforts to demonstrate MyCoach, some students did not understand what it was or what it could do for them.

After the interviews were over and during the coding/analysis stage, I was surprised when I matched what group the interviewees chose on the SurveyMonkey survey and what group I determined they fell into based on their interview answers (Table 4); there was a mismatch with 13 of the 27 interviewees that I did not anticipate. Seven participants self-identified as only using face-to-face resources yet had used both; two self-identified as using none of the resources yet had used both; three self-identified as using none of the resources yet had used face-to-face; and one self-identified as just using MyCoach yet had also used face-to-face resources. Various explanations I propose include not reading the question, not reading the answer choices, and misreading the answer choices.

After the GHSQ was completed, I had to enter the data from 102 paper copies into the Excel spreadsheet by hand. It was interesting to see that often when participants ranked faculty or clinical tutor at the high end of the scale, they also were likely to rank other expert sources at the high end. The converse was true for non-expert sources. Also, on the post-GHSQ, two-thirds of the respondents indicated that they had had no academic issues during the term.

Things I learned. The most important thing I learned was that interviewees' perceptions about time were not the same as mine in my role as a learning strategist. When I asked in the interviews about having enough time to seek help, I found I often had to rephrase the question and then I got a one or two word answer. They then would

go off on a different tangent or they ask me to rephrase the question. When I did ask it again, it was with a longer, more detailed explanation and by then it often was not their thinking but mine.

Interviewees indicated that they sought help by using the Internet to find recommended resources that included DES facilitators posting resources used in their groups on Facebook, YouTube videos for specific content topics, and Khan Academy. My reflections were "Recommendations matter – can we do this for DES? Advice matters on finding helpful resources. Changed Practice – potentially – how can we make recommendations?" Having helpful resources recommended by other students, including peers and upper-termers, was a common theme in the interviews.

Benefit of the interview process. The main benefit of the interviews was the opportunity to follow up with seven of the twenty-seven interviewees in a one-to-one learning strategies session right after the interview. The timeliest was for Participant 11, who was obviously upset right from the beginning of the interview. Her answers were short and her body language was stiff with little eye contact and she seemed teary. I offered to talk with her about that issue once the interview was over and she agreed. Despite getting to this point, she was not able to really engage in the interview. We did a 30-minute face-to-face appointment after the end of the interview and talked about strategies for long-term retention. Participant 11 revealed during the strategy session that she felt she did not have time to stay connected with family or her best friend. As a result, she was struggling, frustrated, and upset perceiving she did not have enough time to get the care she needed from her support system.

Changed practice. The immediate change in practice was after speaking with an interviewee who at first seemed to have a limited science background. Further questioning indicated this interviewee proactively sought help, had a mixed undergraduate background, and did not have issues using time effectively. In a regular face-to-face appointment, I would usually ask what a student's undergraduate degree was in and make the assumption that a weak science background would be part of the reason s/he was in my office. With an undergraduate major in German studies and Women's Gender and Sexuality Studies, I would have expected this interviewee to be struggling in Term 1. Yet she gave every indication of using her time wisely, seeking all available help early, and having a balanced life experience with time to exercise and cook.

A change in practice also occurred for the DES orientation session in January for the Spring 2017 term based on what I learned from the interviewees. The DES learning strategies team designed the 30-minute session to clearly delineate who the learning strategists are, what the benefits of a one-to-one appointment are, how to access the services, and the two crucial learning strategies for Term 1, rather than a session focused just on delivering as many learning strategies as possible. A potential change in practice was realizing how seriously students take recommendations combined with the importance of communicating through social media. Can DES look for ways to use social media like Twitter or Snapchat to make recommendations to Term 1 students about learning strategies?

Interestingly, I had one volunteer book an appointment for an interview and then email just before it was scheduled saying he could not make it because of bussing issues. While he said he would reschedule, he never did. One of the factors intimated to by

several interviewees was that transportation, particularly bussing, was a barrier to using time effectively.

In conclusion, the narrative analysis of the researcher's journal described eight key decision points and four key themes to help clarify and support the interview data analysis.

Summary

The summary of the quantitative results and qualitative findings with specific reference to the research questions is as follows.

1. If entering SOM Term 1 students are experiencing an academic problem, how likely is it that they will seek help and from what source?

If entering SOM Term 1 students were to experience an academic problem, ninety-eight percent of the 625 surveyed stated that they would seek help. These results were based on seventy-two percent of the entering SOM Term 1 cohort of 860 medical students in the Fall 2016 term completing the intent to seek help survey.

The human help sources that participants ranked highly included clinical tutors, faculty, peers, and learning strategists, while non-human sources included textbooks and the Internet. If participants intended to seek help from a learning strategist, they would also intend to seek help from faculty members, faculty advisors, and clinical tutors.

2. How does the intent to seek academic help by SOM Term 1 students match their actual help-seeking behavior using face-to-face, online, or both learning strategy types of resources?

Intent to seek academic help by SOM Term 1 students varied when matched with their actual help-seeking behavior using face-to-face, online, or both learning strategy

types of resources. Interviewees actual help sought over the term matched or exceeded the expressed intent to seek help before the term started from all sources including face-to-face and online resources.

3. Is there a difference in help-seeking behavior between SOM Term 1 male students and female students?

Overall by percentage comparing males and females completing the post-GHSQ, with a small sample size of 25, females sought more help from ten sources than males and equally from the one mandated source. Females sought more help from textbooks, the Internet, and learning strategists, while males sought more help from the clinical tutors.

As far as participation in the study was concerned, there was a higher participation rate for females for the interviews; equal numbers of males and females volunteered but 10% more females actually participated.

4. How does SOM Term1 students' perception of available time influence their decisions to seek or not seek learning strategies help?

The data specific to answering this question came from the semi-structured qualitative interviews. Of the twenty-seven interviewees, twenty-six actually sought face-to-face help from various sources and sixteen specifically from a learning strategist. Four interviewees indicated in deciding to seek learning strategies help, time was a factor. Twenty-two did not indicate that time was a factor in their decision to seek face-to-face help and that this help was worth the time spent acquiring it. As far as the online learning strategy resources, 13 of the 27 interviewees indicated that they had explored or used MyCoach at least once.

5. How do SOM Term 1 students make the decision to spend time seeking learning strategies resources help?

Entering SOM Term 1 students that participated in the current study indicated that there were many ways they made decisions about how to spend time seeking learning strategies resources help. Under Theme 1, Factors Influencing Student Use of Time, interviewees indicated that barriers to seeking help included missing process knowledge. And, while many interviewees indicated that time was not a factor, those interviewees that reported time was a factor stated influences included time pressures, time wasted, getting value for time spent, and ease of access. Under Theme 2, Factors Influencing Student Help Seeking, interviewees reported that the main factors influencing their decisions to spend time seeking learning strategies help included lack of knowledge, available time matching help availability, and word of mouth. Interviewee perceptions and misconceptions about help seeking also influenced their decisions. Under Theme 3, Evidence of Self-Regulation, interviewees described the influences of motivation, reflection, and strategies when managing time and when seeking help.

A detailed description of the mixed methods data analysis, the quantitative results and the qualitative findings have been reported in this chapter. This information provides the basis for the conclusion and discussion in relation to the literature in Chapter 5.

Chapter 5: Conclusion, Discussion, Limitations, and Recommendations

This action research case study explored how St. George's University's (SGU) entering School of Medicine (SOM) Term 1 medical students' perceptions of time influenced their help-seeking behavior regarding online and face-to-face learning strategy resources when faced with an academic challenge. This chapter discusses the results and findings of this case study based on the combined data analysis and provides recommendations for practice and future research inquiries.

The results of this action research case study expand the literature on academic help seeking, on use of time, on gender and help seeking, and on self-regulated learning strategy resources. There was limited educational literature on first term medical students in relation to either help seeking or use of time and especially within the pressurized context of first term medical students. The results do reveal that entering SOM Term 1 students intend to seek help if they encounter academic problems during the term and that there are a variety of human and non-human sources they actually used to seek help. The findings of this study indicate that time was not a major limiting factor in seeking help for students facing an academic issue. Factors that influenced entering SOM Term 1 students seeking help included value for time spent; ease of access to help sources; lack of knowledge of best sources for help; not knowing what help is needed; that available time and time to receive help have to match; understanding help source roles, titles and purpose; and word of mouth recommendations. Results also indicate that there was a slight gender bias toward females in seeking help from various help sources. Findings confirmed that while the face-to-face learning strategy resources were accessed as a help

source, the online learning strategy resources were not well understood and the students did not access or use it to its full potential as a help source.

Intent to Seek Help

This study documented intent to seek help and matched it with actual help-seeking behavior. Help seeking is a meta-cognitive skill defined as “the ability to solicit help when needed, from a teacher, peer, textbook, manual, on-line help system, or the Internet” (Aleven et al., 2004). In an educational setting and for an academic problem, students seek help from human and non-human sources to remedy or resolve a gap in their knowledge. This knowledge can be either content or process knowledge.

There is scant literature on intent to seek help with medical students and no instruments designed to specifically measure help seeking within the field of education. While the educational self-report instrument, MSLQ, has a subscale for help seeking, it does not measure intent (P. R. Pintrich, Smith, Garcia, & McKeachie, 1991). The other prominent academic instrument is the LASSI, designed to diagnosis study skills does not have a help-seeking component (H&H Publishing, 2016). The General Help Seeking Questionnaire (GHSQ) used in this study was designed to measure help-seeking intentions in psychological situations (Wilson et al., 2005). These authors vigorously encouraged use of this instrument in other settings. The problem-types and help-source items for the GHSQ were modified for use in this educational setting, showed internal reliability, and demonstrated that entering SOM Term 1 students intended to seek help for an academic problem during the term.

Seeking academic help in response to an academic challenge is considered an adaptive self-regulated learning strategy (Karabenick & Newman, 2011; Newman, 1998a,

2002; Ryan & Pintrich, 1997). Until recently, the literature has been divided between academic help seeking and information searching and as a consequence, factors that influence students' selection of help sources has not been a research focus. Current research bridging these two approaches has begun to focus on the source of help students use (Karabenick, 2011; Makara & Karabenick, 2013; Puustinen & Rouet, 2009).

When faced with an academic problem, learners, such as medical students in this study, have multiple sources of help to choose from in order to resolve their learning challenge. Traditionally, sources of help have been divided into help seeking from human sources and information searching from non-human sources (Keefer & Karabenick, 1998). With the advent of online content and technology, the lines between these two areas became less distinct (Aleven et al., 2004; Puustinen & Rouet, 2009). Some researchers (Karabenick, 2011; Makara & Karabenick, 2013) maintained the distinction and others have moved to seeing information searching and help seeking on a continuum (Puustinen & Rouet, 2009). The general trend across multiple contexts to use the Internet for all sorts of help, including information validates this idea of a continuum along the same seeking behavior.

The prototype study looked at entering SOM Term 1 students' perceptions of a strategic online learning resource, the Learning Strategies Resources Website (LSRW), designed specifically by myself to look at whether students wanted information or wanted help from online learning strategy resources. Information was in the form of topical tip sheets and video clips on six learning strategy themes designed by the LSU. Help was given on the same learning strategy themes but offered with a decision tree format based on key questions the learner answered to be more directed to where their learning issues

might lie as well as fuller descriptions of the application of strategies to the problem (see Appendix B). While the prototype study measured usability and satisfaction, the results indicated that students wanted the quickest answer and when asked did not recognize a distinction between looking for information and looking for help. They perceived it as the same thing; the information side of the site just seemed to get them to the answer faster, even if it was not the right answer or a comprehensive answer.

The current study looked at the students' intent to use and subsequent use of sources and not at the value of one source over another. The surveys presented students with a predetermined list of the major human and non-human sources of help at SGU and measured whether intent to seek help matched actual help sought. Based on the data analysis, results demonstrated a strong intended preference for seeking help from human experts before non-experts and from both of the non-human sources of help. Despite online resources being grouped into one category, similar intentions were expressed for the online sources as for human sources. These results were consistent with a study on college undergraduate students that established help seeking preferences for textbooks and Internet sources over human sources (Makara & Karabenick, 2013).

Factors Influencing Help Seeking

Recommendations for future research into the influence of contextual factors and help-seeking behavior were made as early as 1998 by Ryan et al. (1998) and repeated in 2011 with Järvelä. A robust body of literature has investigated help-seeking behavior from various angles but has primarily focused on the classroom environment (Aleven et al., 2003). More recently, the research on help-seeking has expanded into technological environments and contexts (Järvelä, 2011). It is interesting to note that Järvelä (2011)

reported that as technology-rich learning environments broadened and access to informal sources increased, contexts for help seeking mattered less compared with skills for help seeking.

This exploratory case study considered the contextual factor of time and how students' perceptions of discretionary time influenced their decisions to seek or not seek help, particularly with learning strategy resources. Although time was determined not be a significant contextual factor, there were other contextual factors that students reported influenced their decisions to seek or not seek help. These included value for time spent; ease of access to help sources; lack of knowledge of best sources for help; not knowing what help is needed; available time and help have to match; understanding help source roles, titles and purpose; and word of mouth recommendations. As a category title, unambiguous communication can sum up these factors. However, there is little research on communication as a contextual factor.

Value for time spent meant that the student left the help situation with the perception that it had been helpful and was valued. This had the best chance of happening when clear communication about every facet of the encounter. Ease of access means where, when, why, what, and how to access the help source is clearly communicated. Lack of knowledge about the best sources to access for help indicates that there was also a missing or inadequate communication about how to find these sources. Available help must be designed based around communication with students as to when their discretionary time matches. If students cannot access clear details about the roles, titles, or purpose of the source of help, then help seeking will be hindered. Recommendations by others, mainly through word of mouth, was an important source of information for

students seeking help, and students experienced various levels of success based how closely the communicated recommendation matched their expectations.

A 2011 study of U.S undergraduates taking an online public health course measured students' perceptions and satisfaction with the student support for the course identified immediate communication with faculty as a key element (Lee et al., 2011).

Early help-seeking research characterized help seeking as a negative behavior and one of two influential models, the self-esteem model, focused on the conceptions of self when faced with having to ask for help (Nelson-Le Gall, 1985). There were major limitations to the research including research design and methodology limiting generalizability (Nelson-Le Gall, 1985). Most studies focused on the costs of help seeking, primarily threat to self-esteem and social embarrassment (Karabenick, 2003).

Self-esteem was not a factor considered in this study. However, social embarrassment did come up in one of the early interviews and I then incorporated a question that asked about any stigma or embarrassment attached to seeking help from DES and the learning strategists. The findings in this study did not validate the earlier self-esteem model as not one student indicated there was stigma or admitted to embarrassment while seeking help. This may indicate participant bias, as those students with a healthy self-esteem would be more likely to seek help without worrying about stigma or social embarrassment and also more likely to participate in an interview investigating help seeking.

Use of Time in Seeking Help

An early help-seeking researcher, Nelson-Le Gall, pointed out that for help seeking to be effective, "the individual must know enough to know what is not known, to

know what could be known, and to have some reasonable ideas about where and how such knowledge might be gained" (Nelson-Le Gall, 1985, p. 70). For success solving an academic problem, learners need to be able to distinguish when they need help and engage in self-regulated behavior (Nelson-Le Gall, 1985). While there is a high level of self-regulation required in academic help seeking (Zimmerman & Schunk, 2011), it comes at a cost. The expenditure of time and effort to figure out the problem, to figure out the best source of help, and then to locate the appropriate help is one of these costs (Lee, 1997). This study was designed to explore entering SOM Term students' perceptions of this time expenditure.

There is limited research on students' perceptions of discretionary time use particularly on entering medical students. Similarly, there is little research on students' perception of discretionary time and its relationship with help seeking. Part of the problem stems from the fact that time is not a simple construct but rather multidimensional (Macan et al., 1990). The focus of the study was not on the scheduling or planning components of time management but on the students' beliefs and perceptions about the availability of discretionary time and its relationship to their decision to seek or not seek help when confronted with an academic challenge.

Anecdotal comments made by previous entering SOM Term 1 students to learning strategists in the LSU were often about some version of meeting with or making an appointment with a strategist taking too much time. The anticipated results for this study were that this exploration would confirm both the learning strategists' and the students' perception of time being a strong influencing factor in students choice to not seek help. At the same time, asking direct questions about time would also uncover other

possible reasons for avoidance of help seeking when help was needed (Collins & Sims, 2006; Roll et al., 2011; Ryan & Pintrich, 1997).

In fact, this premise was disconfirmed as the results indicated that the majority of students did not find time to be a significant factor in their decision to seek or not seek learning strategies resources help. Entering SOM Term 1 students with either the belief that seeking help would take too long or with the reality that they had no discretionary time left, or both, would not volunteer their time to participate in this study. There is little research on the relationship between the construct of time and help seeking in higher education.

The majority of the participants I spoke with did not have the perception that available time influenced their decision to seek or not seek help in general, and learning strategies help in particular. In fact, several interviewees did not understand this question about time and I had to rephrase it or offer a longer explanation giving my own perspective, which did not move the conversation about their perceptions of time forward. One exception was Participant 3, who asked about my study and why I was asking the questions I did. I shared my belief that for medical students, time is the currency of medical school. She was the only interviewee that extended the conversation by emailing me her reflections on how our conversation helped her to clarify her thinking about the value of time.

> I was thinking about the way I think about time here this afternoon. I decided that time is in fact currency, and the dominating factor about how I use it is how much I will get out of it. I don’t mind spending time to get help or use resources, as long as it is useful time. For example, I would rather spend half an hour meeting with a learning strategist than watching a YouTube for 10 minutes, because I will get way more out of a face-to-face meeting. I am also more likely to seek help from someone who I know won’t waste my time or try to just tell me the answer

> instead of helping me see it on my own. I had not really thought about time as currency until I talked to you yesterday, but that is precisely how I think about it.

One of the main subthemes from the interview data was the importance of value for time spent. Most interviewees understood that they had limited discretionary time to get help for academic issues and when they took time to seek help, they wanted that help to be worth the time invested. They also wanted easy access to help because having to use some of their available time to actually find the help needed took away from time spent using the help. Unambiguous communication about where, when, and how to find, access, and use help in both face-to-face and online environments summarizes students desire for value for time spent.

The non-human sources of help were the Internet and textbook while all of the other listed sources were human. Taken collectively, the top ranked intended sources of help were reported as clinical tutor, faculty, textbook, Internet, peer, learning strategist, and faculty advisor. The uppermost sources reported as actually used sources of help were friend, Internet, peer, learning strategist, textbook, and upper termer. The quantitative data did not indicate a clear preference between human and non-human sources of help either intended or actually sought. Several interviewees however, did indicate a preference for accessing human help over online help. Others spoke of the quickest route to help where human or non-human was not the consideration, rather an explicit recommendation to the answer to their specific problem was what was important.

Learning Strategy Resources and Help Seeking

One of the recommendations for further research by Karabenick and Knapp (1991), was to look at the relationship between help seeking and other learning strategies. Building on this, Lee et al. (2011) maintained that “support for student learning is a key

element in optimizing student learning experiences in any learning environment" (p. 158). Despite this push to focus on learning support, "teaching students to use help seeking as a learning strategy is a topic that has received relatively little attention in the literature" (Puustinen & Rouet, 2009, p. 1015).

However, the literature on help seeking itself is robust and extensive and includes a developed theory supporting the facilitation of learning with SRL help-seeking strategy use (Järvelä, 2011). The rich body of literature developed within clinical and educational psychology clearly indicates that being a proactive help seeker is a crucial component of problem solving and learning (Lee, 1997). Solving an academic problem involves the constructs of metacognition (becoming aware of the need), motivation (deciding to seek help), and behavior (implementing, Nelson-Le Gall, 1981; Newman, 1994; Ryan & Pintrich, 1997), key components of self-regulatory learning behavior, present in both academic help-seeking and information searching (Puustinen & Rouet, 2009).

In the educational setting, the role of a learning strategist is to help students improve academically, usually through the application of one or more learning strategies to a specific learning challenge. However, in a medical school setting, if students do not seek help when they encounter academic difficulties, especially in a timely way, the learning strategists are limited in their ability to be of assistance. The decision by an entering Term 1 medical student to not seek help when an academic problem arises can seriously impact the chances of student success and impede academic progress. Learning and achievement is undermined when students do not ask for help at the time they need it (Ryan et al., 2001).

The findings of this study showed students exhibited self-regulatory learning strategy behaviors that included motivation, reflection, and learning strategies use in both the face-to-face and online environments.

Gender and Help Seeking

The second early influential model for help seeking was the social-normative model that also focused on help seeking as a negative behavior to be avoided (Nelson-Le Gall, 1985). However, this model measured sociocultural and demographic variables like age, gender, race, and social class to predict and explain help-seeking behavior within the prevailing social group (Nelson-Le Gall, 1985). The internalization of social and cultural values and roles predicated help-seeking behavior. Research using this model was of limited value according to Nelson-Le Gall (1985) because early studies were not cross-cultural and little was known about the "social norms related to help-seeking in educational settings" (p. 59).

Participation rates in this study based on gender percentage and compared to the SGU published figures for the Doctor of Medicine (MD) Four-Year Program as of October 2016 showed a higher percentage of females participated in each component of the study and as the total numbers participating got smaller, the ratio of females increased.

The sample size was small (15 females and 10 males) for the cohort of participants that completed both the GHSQ and the post-GHSQ. Within this cohort, notable gender differences by percentage of actual help sought by source showed 50% greater use of textbooks by females, 30% greater use of both the Internet and a learning strategist by females while males showed a 20% greater use of the clinical tutors.

With such a small sample size it is difficult to make anything more than generalizations about gender differences in this study. Comparatively, more females used the non-human sources of help listed on the GHSQ (textbooks and the Internet) and the human source (learning strategist) more than males. Males used the clinical tutors, another human source of help at a greater rate. Combined, these four help sources were ranked 1, 3, 4, and 6 out of 15 according to the mean scores of the GHSQ data. This suggests that both males and females are making use of the expert human sources and as well as the two non-human sources listed in the study.

Studies on help seeking that measured gender as a variable found women more likely to seek help than men (Cohen, 1999; Lee, 1997). Studies in technology-based learning environments that looked at gender differences were noted in a literature review by Aleven et al. (2003) as domain specific and interest dependent. All of these studies for both time and help seeking show a slight gender bias toward females, which is also noted in the current study with minor exceptions.

While interesting to note, this gender bias will not influence DES learning strategy practice to any great degree. Individual differences across the entering SOM Term 1 cohort always exist and having an awareness that some female students may have different help source preferences will be taken into consideration.

Limitations of the Study Design

Limitations of the design I identified included the scope of the study, the methodology chosen, and the design of the study (McMillan & Schumacher, 2001).

Limitations of Scope

The scope of this study was limited to the main campus of a Caribbean medical school and to one cohort of SOM Term 1 students entering the program for the first time. The problem statement limited the focus to the specific self-regulated learning strategy, help seeking, by students in the context of the first term of medical school. A limitation in this category may be previous participant exposure to instruction about this learning strategy.

Limitations of Methodology

Qualitative phase limitations.

Role of researcher. My personal philosophy is pragmatism, which is reflected in my choice of study design. Checkland and Holwell (1998) point out that the role of the researcher in action research as both a researcher and a participant has to be acknowledged especially as these roles evolve over the course of the study. Since I was the researcher for the study, I was the interviewer for the qualitative data collection phase, the LSRW is my creation, and I am an employee of the Medical University, I was careful of my biases during every phase of the study.

My role in this research study began before the study itself with the development of the learning strategies website and the creation of some of the tip sheets and video clips described in previous sections. The creation of these resources reflects my desire to put time and effort into making sure that what was designed for the online environment was the best fit based on the financial, human, and technological assets available for that specific learning setting. As reported by MacDonald, Stodel, Farres, Breithaupt, and Gabriel (2001) “advocates of the use of new educational technologies have asserted that

effective instruction with technology must be driven by sound pedagogical principles, involve critical thinking, and provide a real community to the learners" (p. 12).

This has meant balancing my previous experience and education in primarily face-to-face environments, my collaboration with the learning strategists teams' experience and education, with these new undertakings into the online environment with the models and theory available. It has also meant taking the opportunity to critically reflect as the proposed study proceeded through my interaction with the learner community that volunteered to participate in the study. Howland, Jonassen, and Marra (2012) state:

> Technologies provide rich and flexible media that students can use to communicate their ideas with other students in collaborative groups. A great deal of research on computers and other technologies has shown that they are no more effective at teaching students than teachers, but if we begin to think about technologies as learning tools that students learn *with*, not *from*, then the nature of student learning will change. (pp. 6-7)

Our goal in DES has become to create effective tools to facilitate learning. To that end, part of my history with this project included validating my website design with a usability study that involved five learning strategists and after modifications, five students. As stated in Chapter 1, this led to a four-month prototype study to determine student satisfaction and level of importance of the LSRW (see Appendix B) and then to the study being described here.

During the study my roles in DES included being a learning strategist for SOM Term 1 students and the Learning Strategies Coordinator. In this context, I had no power over any student in relation to their studies or their grades. Researcher bias will be described in a subsection of this Limitations section.

Convenience sampling. As described in Chapter 3, while purposive selection was part of the study design, convenience sampling was what was actually carried out during the qualitative data collection phase (Morgan, 2014). Rather than potential interviewees being identified by me from the DES learning strategists notes and from the website analytics, potential interviewees self-identified in response to my emailed invitation for an interview. Although I had checked several times with the information technologists connected to the SGU community pages that MyCoach would be developed on that I would be able to collect individual statistics from the site analytics, when the time came to collect the data I was informed that individual statistics were not something that could be accessed. The learning strategist notes were also not up to date at the time I discovered I could not get the website analytics so it made no sense to push to have them updated.

Quantitative phase limitations. Despite general support in the literature for the GHSQ, this matrix has not been used in the context of medical school or with academic help seeking.

Limitations of Design

Self-selection of participants. The self-selection of participants limited access within the entering SOM Term1 cohort to non-help seeking that actually needed help. There was representation at the interview level of all the preselected groups except this group. Despite designing the elements of the study, and the interviews in particular, to minimize the time required to participate, students feeling pressured by time would likely not volunteer for the study.

Asking about time with students limited by time. I expended considerable time and energy attempting to attract as sizeable and diverse a sample of students as possible for all three phases of the study. However, as with any research that depends on voluntary participation, the sample of students who agree to participate, especially in multiple forms of data collection, may not be representative of the entire population. This may have been particularly problematic in this study as there were time requirements to participate in the study that included filling out surveys and engaging in interviews. These time commitments may have limited the very students that the study was trying to identify from taking part in some or all of the study components.

Quantitative phase limitations.

Internal validity. Internal validity is a measure of how well the findings match what is really there and how well the researchers are measuring what they set out to measure (Merriam & Tisdell, 2016). In the current study there was the possibility of a low rate of participation and thus a low selective response data set. This did not occur for the modified GHSQ but did on the post-GHSQ limiting the power of the statistical analysis for this part of the data. The response rate for the GHSQ was 72.79%. However, for the post-GHSQ it was 11.40%. Furthermore, 65 of 98 respondents on the post-GHSQ did not have an academic issue leaving 33 respondents for the source data results (3.84% of the SOM Term 1 cohort of 860). Of the 33, 25 did both the GHSQ and the post GHSQ. The participation rate for interviews was 3.14%. The smaller sample sizes of the post-GHSQ and the interviews are a limitation of this study.

External validity. External validity is a measure of how well the findings of a particular study can be applied to other studies or situations (Merriam & Tisdell, 2016).

Another way of referring to external validity is to ask how generalizable are the results? Since this study was designed to solve a local problem, a problem within the researcher's practice, there was a limited expectation of generalizability to other studies or situations. As Lodico et al. (2006) explain, the main reason for carrying out AR is for practitioners to be able to focus on solving academic problems in their own practice and in their own school setting without having to expand the results into a larger context. However, since students attending programs offered at the professional school level likely face the same fast pace and high volume of material, there is a good possibility that the results of this study may generalize to their circumstances.

Qualitative phase limitations.

Validation. Flexible research designs, such as case studies, employing primarily qualitative methods evolve as the research progresses and validity constitutes both the trustworthiness of the findings and the usefulness of the knowledge (Foreman-Peck & Winch, 2010). The case study must be designed in a way to ensure trustworthy results and a practical solution to the problem.

The core data collection method proposed for this study was qualitative. In order to address standards of validation and evaluation in qualitative research, Creswell (2013) asked two interrelated questions: "Is the account valid, and by whose standards? How do we evaluate the quality of qualitative research?" (p. 243). After a lengthy review of the history of validation in qualitative research Creswell (2013) summarized his own position as "an attempt to assess the 'accuracy' of the findings, as best described by the researcher and the participants" (p. 250) and ultimately the author's reported representation. The eight validation strategies for a qualitative study presented by Creswell included:

1. prolonged engagement and persistent observation;
2. triangulation;
3. peer review or debriefing;
4. negative case analysis;
5. clarifying researcher bias;
6. member checking;
7. rich, thick description; and
8. external audits. (pp. 250-252)

He then recommended that at least two of these validation strategies be used in any particular study. This study engaged in triangulation, clarifying researcher bias, member checking, and rich, thick description thus more than meeting the minimum standard for validation.

Triangulation. "Triangulation has been generally considered a process of using multiple perceptions to clarify meaning, verifying the repeatability of an observation or interpretation" (Stake, 2005, p. 454). Multiple perceptions were generated for the proposed study, as there was one quantitative strategy for data collection using a survey instrument and three quantitative strategies, interviews, member checking, and the researcher's journaling.

Clarifying researcher bias. According to Wolcott (2005) "bias itself is not the problem, but one's purpose and assumptions need to be made explicit and used judiciously to give meaning and focus to a study" (p. 156). To that end, one of the biases for the researcher in this study was my personal involvement and subjectivity regarding the case study. However, as Simons (2009) pointed out, the nature of case study research

is personal involvement by the researcher and while the subjectivity that results is inevitable, it is part of the richness of this type of research. My purpose was clearly laid out in each of the previous chapters and my assumptions are delineated below.

Two further types of bias have been described by Darke et al. (1998) in the collection and analysis of case data: the impact of the researcher on the participants and the possible influence of the researcher's value system on the analysis of the case study data. I was also a learning strategist and had interaction with SOM Term 1 students outside the context of the study. However, I had no instructor relationship with any participant and had no influence over grades or academic progress.

This bias was not evident at the interview phase of the study. In fact, the opposite was true as seven of the 27 interviewees took the opportunity to have a face-to-face learning strategies session with me right after the interview. My value system was described so that minimal impact was reflected on the analysis of the case study data.

Member checking. Member checking, or respondent validation, encourages some form of research participant response to the data collected or interpretations drawn to check for accuracy. This topic has been discussed in the data collection and data analysis sections.

Rich, thick description. The nature of case study research using a sequential mixed methods design is to gather a rich and thick description of the case. Case study according to Stake (2005) is carried out by researchers with an intrinsic focus aiming "to develop what is perceived to be the case's own issues, contexts, and interpretations, its 'thick description'" (p. 450). This was my goal in undertaking this case study and I thank the reader for progressing to this stage of this substantive work.

Generalizability. "Generalisability refers to the degree to which research findings are applicable to other populations or samples" (Falk & Guenther, 2007, p. 2). Although AR is designed to solve local problems which can make generalizing results to other situations difficult, Elliott (2015) envisioned ways to extend generalizability. Elliott argued that there is a level of "generalizing potential" even within a single case "in as much as teachers reading it may discern practically relevant features that illuminate their own practical situations" (p. 15). He also promoted using logical analysis and the comparison of interpretations from the study to other relevant studies in the literature. This case study was one iteration of the action research cycle with the SOM Term 1 cohort of Fall Term 2016 and the long term plan past the scope of this study is to carry out further iterations or cycles with following cohorts. The expectation is that the results from this case will be generalized locally with future SOM cohorts and with cohorts of students in the two other SGU schools.

However, as Stake (1995) argues,

> The real business of a case study is particularization, not generalization. We take a particular case and come to know it well, not primarily as to how it is different from others but what it is, and what it does. There is emphasis on uniqueness, and that implies knowledge of others that the case is different from, but the first emphasis is on understanding the case itself. (p. 8)

Reflexivity. Reflexivity is defined by McMillan and Schumacher (2001) as "critical self-examination of the researcher's role throughout the entire research process" (p. 16). Strategies that I will employ during the proposed study process to "monitor and evaluate the impact of my subjectivity and perspective" include keeping a field log, a field (reflex) log, and documenting for audibility, promoted as crucial by McMillan and Schumacher (2001), as well as a fourth they suggested, critical reflexivity (p. 412).

Descriptions of these strategies are given in Table 15 adapted from the original to list only the three strategies presented in this study.

Table 15.

Strategies to Enhance Reflexivity

Strategy	Description
Field Log	Maintain a log of dates, time, places, persons, and activities to obtain access to informants and for each datum set collected.
Field (reflex) Journal	Record the decisions made during the emerging design and the rationale; include judgments of data validity
Critical Reflexivity	Self-critique by asking difficult questions; positionality.

Adapted from "*Research in Education*," by J. H. McMillan and S. Schumacher, 2001, New York, NY: Pearson Education, p. 412.

Implication of the Results for Practice

As I stated in the reporting on the Researcher's Journal, my own practice and practice within the LSU has already changed. First, the orientation session for entering SOM Term 1 students for the Winter 2017 term led by the learning strategists underwent a major overhaul based on the findings from this study. The missed help seeking opportunities recounted by interviewees stemmed from ambiguous communication, which complicated access to help sources. Instead of presenting a half hour of learning strategies during the DES session, the time was spent on clearly introducing who we were, what sessions we had to offer, how to access them, an overview of the strategic online resource MyCoach, and an overview of the two most important learning strategies for success in medical school. Second, I started to look at ways the Learning Strategies Unit (LSU) could leverage other social media to communicate timely recommendations to students about how to approach difficult content at known points in the term. Interviewees were not looking for specific online learning strategy resources but all of them spoke about importance of the online postings from DES and AEP facilitators they

interpreted as personal recommendations.

Since I had to spend time managing my research study, I had little time to continue developing MyCoach over the study timeline. Many insights offered by the interviewees will be incorporated into future changes in practice for the site. The most timely and crucial include the following: more effective initial presentation during orientation of what is for, how much estimated time to complete the topic, how it can be helpful and then ongoing ways to reintroduce it throughout the term. Word of mouth matters, so an effort will be made to find students that like it and use it and get them to promote it. Also, I need to look at ways to address the misconceptions interviewees had including confusing the purpose, the audience, and the timing. One other future change in practice for my role is to find students willing to vet information about upcoming LSU events so that announcements to students can be formatted from a student perspective and not just from a learning strategist perspective. The study suggests we also need to develop stronger networks of connection so that students are made aware from multiple sources of the ways in which help seeking works.

In the DES, one important emphasis for the LSU is to find more effective ways to communicate self-regulated learning behaviors, particularly help seeking. As stated earlier, student academic support is key to optimized learning experiences, especially in the fast paced curriculum of medical school (Lee et al., 2011). We need to follow the advice from Puustinen and Rouet (2009) to make sure that we actually teaching students to use help-seeking behaviors.

One of the main reasons I chose to do AR over Design Based Research (DBR) was because I did not have an official team to carry out the research with as is

recommended for DBR. However, I did have a substantive, unofficial team that included learning strategists, web designers, secretaries, mentors, and others, who all made timely contributions to my research project. Engaging in a formal graduate study at my own educational institution had both challenges and benefits. The major challenge was first designing and then creating the strategic online learning resource in order to have it in place in time for the study. Another challenge was being tied to the start of a term. I successfully defended my proposal in January and then had to wait to do the study until the following August.

The most significant benefit was interviewing the students I work with. This meant that my practice as a learning strategist changed in real time based on things I they shared. It also gave me the opportunity to carry out seven face-to-face appointments with interviewees right at the end of the interviews and so be able to engage in reciprocal helpfulness.

Conclusion

The dynamics of the relationship between the entering SGU SOM Term 1 students and their self-regulated help-seeking strategies were explored for the Fall Term 2016 for this action research case study mixed methods approach. Evidence from this case study suggests that the contextual construct of time was not perceived by entering SOM Term 1 students to be the major determinant in deciding to seek or not seek learning strategies help when faced with an academic problem. The results indicated that expressed intent to seek help before the term began matched or exceeded actual help sought by the end of the term. Results confirmed that expert human sources and non-human sources were preferred over non-expert human sources of help. There was some

indication of a gender bias for some help-sources but the small sample size limits generalizing from these results.

The results and findings of this study indicate that further iterations of this AR project should be carried out in the near future with refinements. The exploration could focus on one or more of the other contextual factors identified in this iteration.

The current action research case study was the first iteration of the AR cycle. The design lends itself to further iterations with future SOM Term 1 cohorts based on design changes gleaned from the results of this study. One of the main design changes would be to determine how to access the students that did not seek help but needed help. SGU moved to a “systems” based curriculum during the term this study took place and in tandem began a new small group based program for SOM Term 1 students that had academic issues. The students in this Individual Advancement Program (IAP) would better fit the missing help-seeking profile for the next iteration.

Discovering how to access students who engage in help seeking avoidant behavior is an important missing piece in making all of the learning strategies resources more effective.

The multidimensional framework for distinguishing among helping sources designed by Makara and Karabenick (2013) should be further explored and incorporated into the next iteration of the study if possible. This framework measures four dimensions about how learners appraise and characterize different help sources (Makara & Karabenick, 2013).

The GHSQ still makes sense to deliver during orientation to discover students’ intent to seek help before classes start and to provide them with a kick start to both think

about seeking help and to recognize the sources of help available. An improvement at this stage could be to define the sources for the participants (i.e. clinical tutor) before they complete the survey. During this study, intent to seek help from clinical tutors was high but interview results indicated that few saw them as a source of help or actually sought help from them.

Further research is needed on MyCoach. There are website analytics that are available that, while not about individual use as hoped for this study, could be helpful for future design and development. Students indicated that the strategic online learning resource would be something they would use if they knew about it.

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Appendix A: Modified General Help-Seeking Questionnaire (GHSQ)

1. If you were having an academic problem, how likely is it that you would seek help from the following sources?

Please indicate your response by choosing the number that best describes your intention to seek help from each help source that is listed below.

1 = Extremely Unlikely 3 = Unlikely 5 = Likely 7 = Extremely Likely

a) Intimate partner (e.g., girlfriend, boyfriend, spouse)	1	2	3	4	5	6	7
b) Friend (not related to you)	1	2	3	4	5	6	7
c) Parent (physician)	1	2	3	4	5	6	7
d) Parent (non-physician)	1	2	3	4	5	6	7
e) Other relative/family member	1	2	3	4	5	6	7
f) Learning Strategist	1	2	3	4	5	6	7
g) Faculty Member	1	2	3	4	5	6	7
h) Faculty Advisor	1	2	3	4	5	6	7
i) Clinical Tutor	1	2	3	4	5	6	7
j) Upper Termer	1	2	3	4	5	6	7
k) Peer (in the same term)	1	2	3	4	5	6	7
l) Dean of Students (DOS)	1	2	3	4	5	6	7
m) Internet	1	2	3	4	5	6	7
n) Text Book	1	2	3	4	5	6	7
o) Other _____	1	2	3	4	5	6	7
p) I would not seek help from anyone	1	2	3	4	5	6	7

2. What is your gender? M__ F __

Appendix B: Prototype Study

My involvement in the project began with my application to Athabasca University for the EdD program in Distance Education in 2010. My previous professional learning strategy experience had included a combination of requests for online learning strategy resources to be developed and limited knowledge and training on how to do it effectively. The DES wanted to put learning strategy resources online for students in all three schools at SGU and selected to begin the process with the SOM; at the same time I wanted to design a dissertation research project around effective online learning strategy resources.

A coordinated and collaborative effort began with the learning strategies team to design and create content for the SGU website under the DES link. This included tip sheets and video clips on six high yield learning strategy topics that included time management, small groups, notes, stress and anxiety, memorization, and self-testing. The status of the SGU website at this point in time did not allow for much more than a listing of the topics with a hyperlink to a specific tip sheet or video clip. I felt that the current design was not going to be effective with students and after several iterations of ideas hired my own web designer and created my own website.

After searching the literature trying to match theory with practice in relationship to designing student learning resources and providing students with academic help, I discovered the meta-cognitive constructs of help seeking and information searching. With the integration of learning context and new technology, Puustinen and Rouet (2009) have created a model of help seeking with “three types of help seeking situations: (a) the helper is a human (e.g., a teacher), (b) the helper is a human expert communicating with the learner via technology (e.g., video conferencing, email or a mobile phone), and (c) the

human helper is replaced by a help system" (p. 150) leading to the conclusion that information searching is actually a subtype of help seeking. Similarly, Aleven et al., (2006) defined help seeking as "the ability to solicit help when needed from a teacher, peer, textbook, manual, on-line help system, or the Internet" (p. 102).

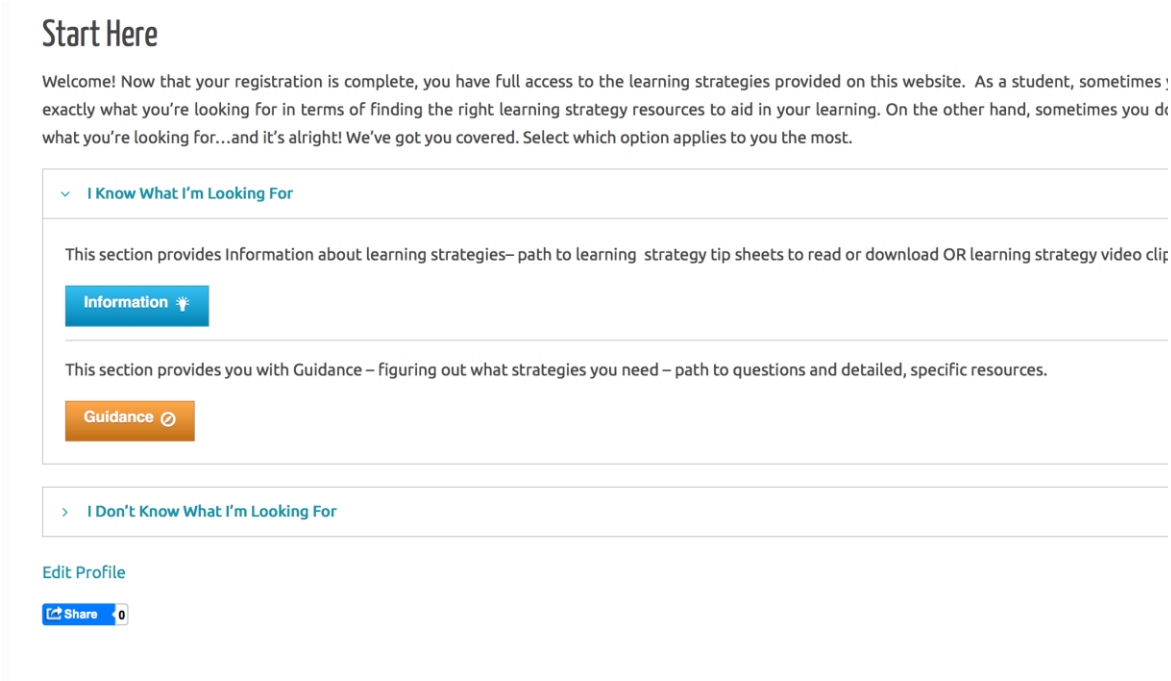


Figure 7. LSRW Start Here page.

My reflections led me to consider if there was a distinction for students who would be potentially accessing online learning strategy resources between wanting help and wanting information. I see my role as a learning strategist as a blend of offering help with information in a collaborative way with the student. As a result, I designed the LSRW with that dichotomy: students were given the choice to access static information about the six learning strategy topics or to access guidance to the same six topics.

The information side of the LSRW was designed with hyperlinks to tip sheets or video clips created by the DES learning strategies team. The guidance side of the LSRW had a decision tree format asking the student key questions designed to guide them to the

right resources and then give them detailed learning strategy information that I created based on my experience as a learning strategist with SOM Term 1 students (See Figures 8, 9, and 10).

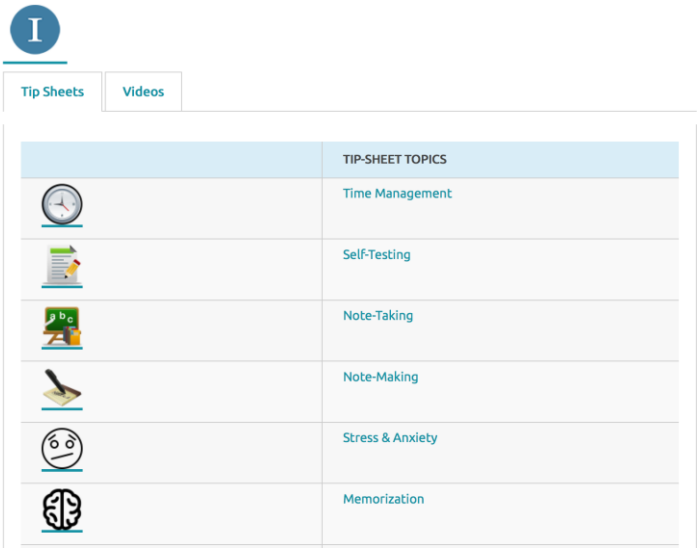


Figure 8. LSRW Information Page.

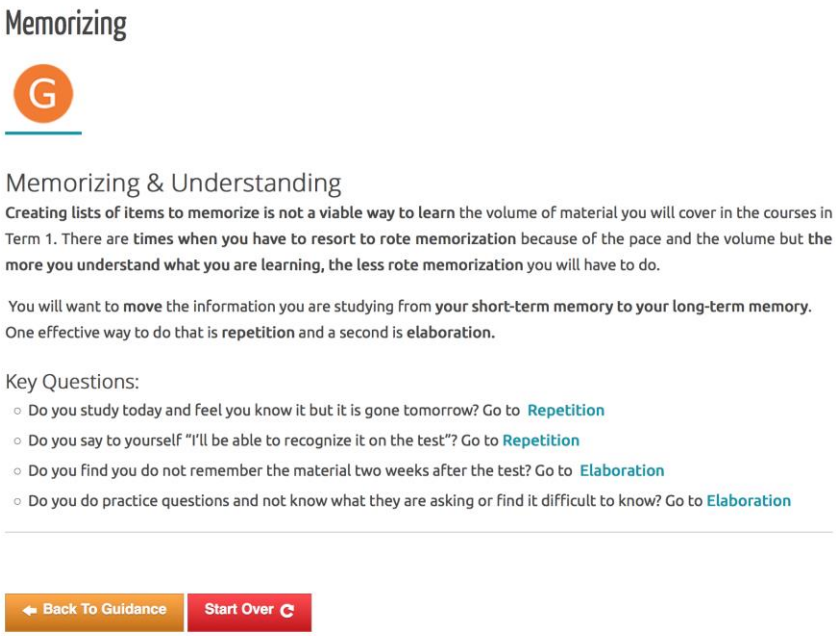


Figure 9. LSRW Guidance Page example for memorization.

Prototype Study Method Summary

During the DES SOM Term 1 orientation presentation, I made an announcement about the LSRW and asked for volunteers to be part of a research study. Students were given a basic explanation and were told they would be receiving an invitation to participate to their SGU student email. This email was sent to the entire SOM Term 1 cohort of approximately 850 students the weekend following all of the introductory Term 1 course sessions and the DES Study Skills Fair were complete. Fifty-one students responded and the first thirty were sent a reply email accepting them into the study with the website address and instructions to check out the resources on their own schedule and at their own pace. A welcome email was then sent out to the thirty respondents to explain to the participants that they would be receiving three emails asking them to specifically check out the LSRW: after the Unified Quiz three weeks into the term, after midterms week eight of the term, and after the course final drop date in week ten (Table 16). After Unified Quiz and midterms are typically when students in term 1 at SGU get grades back and realize that their study strategies may be ineffective.

Analytics collected by the Google account associated with the LSRW were monitored over the course of the study to measure the number of sessions, users, page views, pages visited per session, session duration, percentage of new sessions, bounce rate, new visitors, and returning visitors. One issue that arose was that participants could not be individually tracked as hoped because of confidentiality controls set by Google.

Table 16.

Timeline of the Prototype Study

2014	2014	2015			
		Prototype Study			
August-December	December	January	February	March	April
Design of LSRW	LSRW Usability Testing	Orientation – description and announcement of email to come with invitation to participate		Website poll	Email to agree to interview
	IRB at SGU	Email to participate – first 30 selected			Think Aloud/Interview
		UQ reminder email to go to website	MT reminder to go to website	Post drop date reminder to go to website	Survey Monkey satisfaction post-survey

Participants were invited to a Think Aloud session with me and the website designer. Eleven Think Aloud sessions were carried out over a one week and lasting from 10 to 15 minutes. A self-report post-survey was sent to all 30 participants in the prototype study using Survey Monkey to collect responses in mid April 2015 asking about satisfaction and the importance of the SLRW resources.

Summary of Prototype Study Results

The results include the highlights for the qualitative think aloud sessions (11 participants from the cohort of 30).

- There were multiple visits to the website by all eleven; most use was early in the

term; two participants commented time constraints limited their use.

- The participants did not notice the separation between the information and the guidance pathways; several were frustrated by the lack of a site map so they could just jump to where they wanted to on subsequent visits.
- Comments about what they liked included: convenient late at night; each section subdivided so easy to get a lot of help; interface was clean and simple, a good funnel; specific content guidelines and approaches for classes; “they were a self-check when I doubted I was doing it right”; “digestible bits of information.”
- Comments about what they didn’t like included: the Home button was confusing and one participant got lost; no table of contents; wanted it connected to/integrated with Sakai, the Learning Management System (LMS).
- Six participants saw a learning strategist face-to-face, some before and some after accessing the website this term and one participant saw a strategist last term; several comments confirmed the premise that using the site would improve appointments either before or afterwards.
- Other comments: “Didn't expect it to be so comprehensive; Liked that it was connected to the Internet; no effort like walking to DES; used it most times really late at night”.

The questions on the post-survey asked about satisfaction with the website and the importance of the website resources. For all six questions 62.5%-75% of the nine respondents were either satisfied/very satisfied or found the resources important/very important using a 5-point Likert scale.

- The highest “Very Important” value was for having access to online learning strategies.

Prototype Study Website Analytics

A summary of the LSRW analytics by month gave total users, user sessions, bounce rate, and average time spent on the site. Google analytics blocked individual data collection. Highlights include that there were eight users in January, seven in February, seventeen in March, and eleven in April. The average time spent on the site ranged from 2 minutes to 15 minutes. The bounce rate was 7.14% in January and then dropped to 0 for the remaining months indicating the users were engaging with the site and not just logging on and off again.

Results and Conclusions to Prototype Study

1. Time matters as much when using online resources as face-to-face. The time it takes to log on to the LSRW the first time and consent to the study influenced who participated. Time was mentioned eight times during the Think Aloud including three times about the online convenience of anytime access, four times about time constraints not accessing the site as often as they wished, and once about time management being the reason for accessing the LSRW.
2. The learning strategy content resources need to be more specific where possible.
3. Data collection was scarce from non-users of the LSRW.
4. Only half of the participants in the Think Aloud/Interview sessions realized the site had two pathways – information and guidance – and no one indicated any interest in the website as a whole being more interactive. Only one participant noted that the site was interactive.

Appendix C: Post-General Help Seeking Questionnaire (post-GHSQ)

Please read the consent letter linked below carefully:

Please select at least one answer

☐ I have read the attached **consent letter**.

Please enter your name and SGU email address:

Please enter a valid email address.

Name

SGU Email

* **Did you have an academic problem this term?**

○ Yes ○ No

What is your gender?

Did you seek help from the following sources when faced with an academic problem this term? Please indicate your yes or no response for each help source that is listed below.

	Yes	No	No answer
Intimate partner (e.g., girlfriend, boyfriend, spouse)	○	○	●
Friend (not related to you)	○	○	●
Parent (physician)	○	○	●
Parent (non-physician)	○	○	●
Other relative/family member	○	○	●
Learning Strategist	○	○	●
Faculty Member	○	○	●
Faculty Advisor	○	○	●
Clinical Tutor	○	○	●
Upper Termer	○	○	●
Peer (in the same term)	○	○	●
Dean of Students (DOS)	○	○	●
Internet	○	○	●
Text Book	○	○	●
Other (please specify later)	○	○	●

What is your gender?

○ Female ○ Male ● No answer

Appendix D: Interview Questions

1. Did you fill in the GHSQ? How did your intent to seek academic help match your actual academic help seeking?

2. Did you try and solve your own academic issues (problems, challenges) on your own because of limited time? Were there other factors?

3. Which of the learning strategy resources did you seek help from initially? What led you to seek help from the other resources available?

4. Did you seek academic help from some other source than the learning strategy resources in DES?

5. Do you feel a time pressure affecting your activity choices? Do you feel you have enough time to accomplish the academic things you need to do?

6. How important was available time a factor in your decision to seek academic help? Were there other factors?

7. Do you think there is a difference in the amount of time needed to access the face-to-face and the online learning strategy resources and get effective help?

Appendix E: Letter of Consent for GHSQ and Post-GHSQ

LETTER OF INFORMATION / INFORMED CONSENT FORM

TIME AND ITS RELATIONSHIP TO HELP SEEKING BEHAVIOR TOWARD LEARNING STRATEGY RESOURCES WITH ENTERING MEDICAL SCHOOL STUDENTS

August 12, 2016

Principal Investigator (Researcher):
Joanne Buckland
jbucklan@sgu.edu 473-415-1500

Supervisor:
Dr. Terry Anderson
terrya@athabascau.ca

You are invited to take part in a research project entitled 'Time and Its Relationship to Help Seeking Behavior Toward Learning Strategy Resources With Entering Medical School Students"

This form is part of the process of informed consent. The information presented should give you the basic idea of what this research is about and what your participation will involve, should you choose to participate. It also describes your right to withdraw from the project. In order to decide whether you wish to participate in this research project, you should understand enough about its risks, benefits and what it requires of you to be able to make an informed decision. This is the informed consent process. Take time to read this carefully as it is important that you understand the information given to you. Please contact the principal investigator, Joanne Buckland, if you have any questions about the project or would like more information before you consent to participate.

It is entirely up to you whether or not you take part in this research. If you choose not to take part, or if you decide to withdraw from the research once it has started, there will be no negative consequences for you now, or in the future.

Introduction
My name is Joanne Buckland and I am an EdD student at Athabasca University. As a requirement to complete my degree, I am conducting a research project about how entering medical students use their available time to seek academic help when faced with academic challenges specifically with SGU's face-to-face and online learning strategy resources. I am conducting this project under the supervision of Dr. Terry Anderson.

Why are you being asked to take part in this research project?
You are being invited to participate in this project because you are an entering Term 1 medical student at SGU.

What is the purpose of this research project?
The purpose of the research is to explore the relationship between available time and help seeking behavior when learning challenges arise for entering Term 1 medical students and to learn more about their use of SGU face-to-face and online learning strategy resources.

What will you be asked to do? You will be asked to fill out the General Help Seeking Questionnaire (GHSQ) online during the DES orientation session with an estimated time of less

than five minutes. You may complete the survey at any time convenient to you between the orientation session and the following Sunday night up until 11:55 p.m.

You may also be one of the students asked to volunteer for a 30-minute interview at a later date in the term. These interviews will take place in-person in a meeting room on the SGU campus and will be audio recorded. You will be contacted after the interview with a request to review the transcription of the interview, to take the opportunity to alter/clarify your comments and to review the initial interpretation of the interview by the researcher. A second interview may be requested based on your responses. These interviews will be arranged for a time and place that is convenient to you.

What are the risks and benefits?
There are no anticipated risks associated with the questionnaire. There is a minimal risk for participating in the interview process that includes losing time to meet with the researcher for an interview and not perceiving any benefit in return. Also, you may discover during the interview that you have some learning challenges that were previously not known which may be discomforting to you. To minimize risks and discomforts about learning challenges discovered during an interview, follow up appointments with a SGU learning strategist or other professional will be freely offered to you.

The potential benefit for you filling in the questionnaire is that doing so provides you with the opportunity to be aware that you might face learning challenges and to have a plan in place in case you need to find help at a later point in the term.

The potential benefit for you during the interview phase is that you have the opportunity to critically reflect and talk through your experiences regarding self-regulated learning strategies. You also have the opportunity to discuss any issues with the researcher about the use of your time in order to access help for any learning challenges and change your learning approach.

Do you have to take part in this project?
As stated earlier in this letter, involvement in this project is entirely voluntary. If you decide to take part in the study and later change your mind, you can withdraw from the study by contacting the researcher at any point up October 31, 2016. Any data collected up to that point about you will be deleted. After this time, data cannot be removed.

How will your privacy and confidentiality be protected?
The ethical duty of confidentiality includes safeguarding participants' identities, personal information, and data from unauthorized access, use or disclosure.

Participants' privacy and confidentiality will be maintained throughout the study. All participants will be given a non-identifying number that matches their personal information on a master list that only the researcher has access to. This information will be password protected and encrypted on the researcher's computer or on an external hard-drive and both will be locked in the researcher's personal safe when not in use. An external company hired by the researcher will transcribe interview data and have access only to the participant's non-identifying number.

How will my anonymity be protected?
Anonymity refers to protecting participants' identifying characteristics, such as name or description of physical appearance.

Every reasonable effort will be made to ensure your anonymity; individuals will not be identified in publications.

How will the data collected be stored?
The questionnaire data will be stored electronically on the researcher's password protected computer and the data will be encrypted. Backups of the data will be saved in digital format on a portable storage device, such a flash drive, and stored in the researcher's home safe. The audio recordings data will be stored on the researcher's password protected iPad and the data will be encrypted. De-identified interview data will be sent to an outside company for transcription. The researcher is the only person to have access to the data with the exception of the interview transcription as described above. The data will be destroyed after five years by shredding or deletion.

Future articles may be written based on the results from this data. However, a further ethical review approval would have to be sought if a later project is designed.

Who will receive the results of the research project?
The results of the research project will be disseminated in the following ways:

- The final research report will be provided to Athabasca University and St. George's University.
- Article(s) may be submitted to academic and professional journals.
- Distribution of the final report will be made available to the participants upon request.
- The existence of the research will be listed in an abstract posted online at the Athabasca University Library's Digital Thesis and Project Room and the final research paper will be publicly available.
- Direct quotations by participants will be used but not with personally identifying information reported. Most data will be in aggregate or summarized form.

Who can you contact for more information or to indicate your interest in participating in the research project?
Thank you for considering this invitation. If you have any questions or would like more information, please contact me, (the principal investigator) by e-mail jbucklan@sgu.edu or my work phone 473-444-5008 or my supervisor by email terrya@athabascau.ca. If you are ready to participate in this project, please proceed to review the following consent and complete the survey.

Thank you.
Joanne Buckland

This project has been reviewed by the Athabasca University Research Ethics Board. Should you have any comments or concerns regarding your treatment as a participant in this project, please contact the Research Ethics Office by e-mail at rebsec@athabascau.ca or by telephone at 1-800-788-9041, ext. 6718

This project has also been reviewed by the St. George's University Institutional Review Board. Should you have any comments or concerns regarding your treatment as a participant in this project, please contact the Institutional Review Board office by e-mailing Kareem Coomansingh, SGU IRB Administrator at kcoomans@sgu.edu or by telephone at 473-444-4175 ext. 3221.

Informed Consent:
By completing this questionnaire you agree that:

1. You have read what this research project is about and understood the risks and benefits.
2. You have had time to think about participating in the project and had the opportunity to ask questions and have those questions answered to your satisfaction.
3. You understand that you are free to withdraw participation from the project by closing your browser window or navigating away from this page, without having to give a reason and that doing so will not affect you now or in the future.
4. You understand that if you choose to withdraw, you may request that your data be removed from the project by contacting the principal investigator before October 31, 2016.

Please retain a copy of this consent information for your records.
Starting the attached survey and submitting this survey constitutes your consent and implies your agreement to the above statements.

Appendix F: Interview Letter of Consent

The Interview Letter of Consent had identical pages to the Letter of Consent in Appendix E except for this last page specific to the interviewees.

Informed Consent: Your signature on this form means that:

- You have read the information about the research project.
- You have been able to ask questions about this project.
- You are satisfied with the answers to any questions you may have had.
- You understand what the research project is about and what you will be asked to do.
- You understand that you are free to withdraw your participation in the research project without having to give a reason, and that doing so will not affect you now, or in the future.
- You understand that if you choose to withdraw **after** data collection has ended, your data can be removed from the project at your request, up to October 31, 2016.

	YES	**NO**
I agree to be audio-recorded	◯	◯
I am willing to be contacted following the interview to verify that my comments are accurately reflected in the transcript.	◯	◯

Your signature confirms:

- You have read what this research project is about and understood the risks and benefits. You have had time to think about participating in the project and had the opportunity to ask questions and have those questions answered to your satisfaction.

- You understand that participating in the project is entirely voluntary and that you may end your participation at any time without any penalty or negative consequences.

- You have been given a copy of this Informed Consent form for your records; and

- You agree to participate in this research project.

_____ _____

Signature of Participant Date

Principal Investigator's Signature:

I have explained this project to the best of my ability. I invited questions and responded to any that were asked. I believe that the participant fully understands what is involved in participating in the research project, any potential risks and that he or she has freely chosen to participate.

_____ _____

Signature of Principal Investigator Date

Appendix G: Email Invitation to Participate in an Interview

Many of you have already generously participated in my online help-seeking survey during orientation. I am looking for entering SOM1 students willing to participate in a 20 minute interview after one of the following: Exam 2, 3 or 4. My research is looking at your perception of time when deciding to seek or not seek help when faced with an academic problem. And because time is an important construct I will keep the interviews short, to the point and at your convenience.

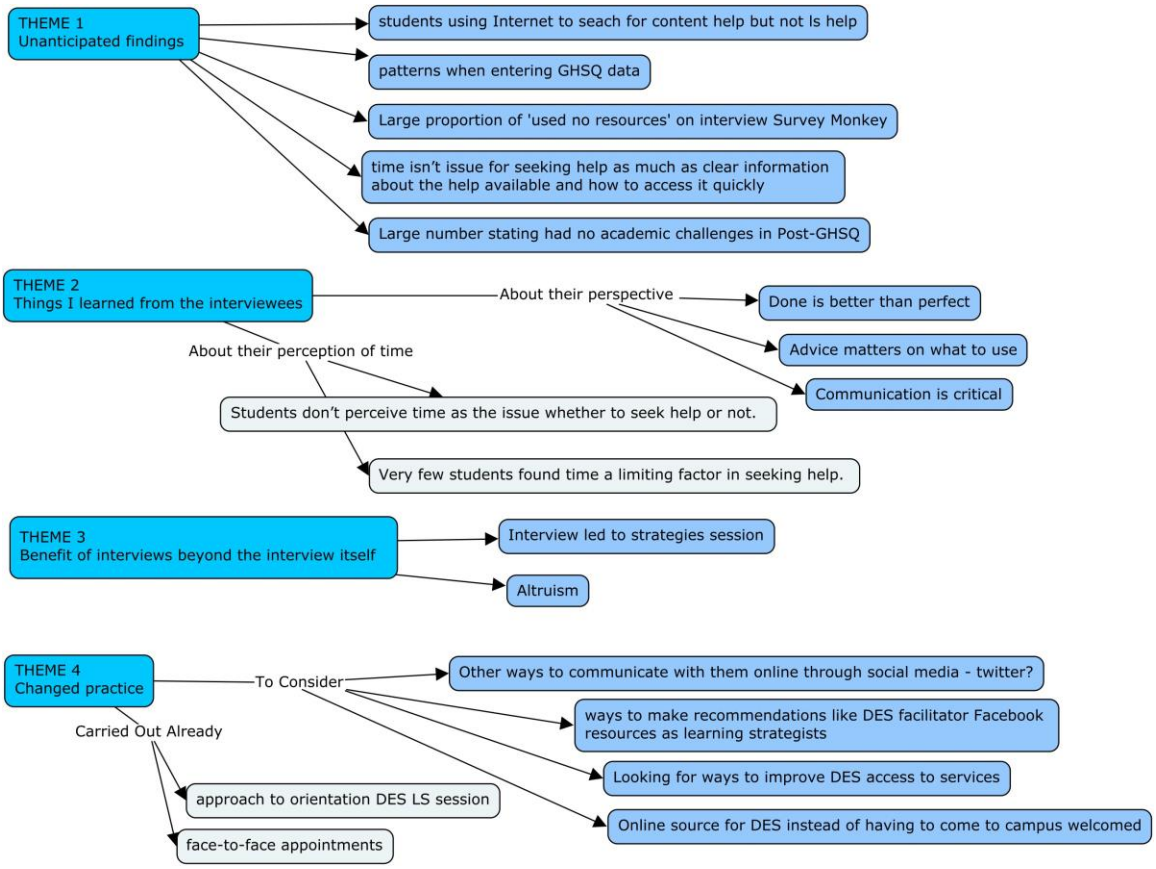
I am interested in talking to students who have not made use of the learning strategy resources as well as those who have. I need participants in each of the following four categories:

So far this term
1. I have not used either MyCoach or the DES face-to-face learning strategy resources
2. I have used DES face-to-face learning strategy resources
3. I have used MyCoach
4. I have used both MyCoach and DES face-to-face learning strategy resources

No matter what category you fall into, you can help me by clicking on this link to Survey Monkey to provide your contact information https://www.surveymonkey.com/r/K7GHZ97

Thanks,
Joanne

Appendix H: Concept Map of Key Themes From Researcher's Journal



Appendix I: Researcher's Journal Key Decision Points in the Chronology and Key Themes

Date	Chronology of Events	Key Decision Point	Key Theme
08-11-16	GHSQ at the DES orientation session		
08-20-16	Noticed patterns entering the paper survey data	Decided to request IRB/REB approval for a post-GHSQ	Unanticipated Findings – clustering of the student responses about sources
09-03-16	Cannot get access to the quantitative data	Redesigned the quantitative data collection	
09-25-16	First request for interviews emailed		
09-27-16	33 interview respondents	Invitation based on resources used	Unanticipated Findings – how many indicated they had used no resources
10-01-16	Interviews Begun		
10-02-16	Participant 5		Things I Learned – student perspective on finishing before moving on
10-08-16	Participant 8	New interview question	
10-09-16	Participant 10		Things I Learned – different MCQ approach
10-22-16	Participant 11		Benefit of Interviews – time one-to-one after interview
10-23-16	Participant 12		Change in Practice – limited science background
10-26-16	Participant 16	New interview question	
10-28-16	Coding/Analysis		Unanticipated Findings – not using the Internet to find strategies
10-29-16	Coding/Analysis		Change in Practice – next orientation be clearer re DES
10-29-16	Participant 21		Benefit of Interviews – time one-to-one after interview
10-29-16	Participant 22	New Interview question	
11-12-16	Coding/Analysis		Things I Learned – few interviewees found time a limiting factor.
11-14-16	Coding/Analysis		Things I Learned – recommendations matter
11-27-16	Coding/Analysis		Unanticipated Findings – disconnect between reported and actual
12-02-16	Coding/Analysis		Unanticipated Findings - not understanding MyCoach
12-08-16	Coding/Analysis	Another pass of interview data	
12-09-16	Post-GHSQ		
12-13-16	Coding/Analysis	Another pass of interview data	
01-01-16	Analysis		Change in Practice – how to use other social media in DES
01-27-16	Analysis of Post-GHSQ results		Unanticipated Findings – 2/3 indicated no academic challenge

Appendix J: REB Approval (Athabasca University)

April 18, 2016

Ms. Joanne Buckland

Centre for Distance Education\Doctor of Education in Distance Education

Athabasca University

File No: 22158

Expiry Date: April 17, 2017

Dear Joanne Buckland,

The Centre for Distance Education Departmental Ethics Review Committee, acting under authority of the Athabasca University Research Ethics Board to provide an expedited process of review for minimal risk student researcher projects, has reviewed you project, 'Time and Its Relationship to Help Seeking Behaviour Toward Learning Strategy Resources with Entering Medical School Students'.

Your application has been **Approved on ethical grounds** and this memorandum constitutes a ***Certification of Ethics Approval***. You may begin the proposed research. The following collegial comments are provided:

Comments on Questionnaire:
The directions state, "If you were having an academic problem, how likely is it that you would seek help from the following people?". However, the final two entries are the Internet and a textbook. These are not people.

Also, you may wish to consider moving the statement "I would not seek help from anyone" to the end of the list as it interferes with the logical flow of the choices.

AUREB approval, dated April 18, 2016, is valid for one year less a day.

As you progress with the research, all requests for changes or modifications, ethics approval renewals and serious adverse event reports must be reported to the Athabasca University Research Ethics Board via the Research Portal.

To continue your proposed research beyond April 17, 2017, you must apply for renewal by completing and submitting an Ethics Renewal Request form. Failure to apply for **annual renewal** before the expiry date of the current certification of ethics approval may result in the discontinuation of the ethics approval and formal closure of the REB ethics file. Reactivation of the project will normally require a new Application for Ethical Approval and internal and external funding administrators in the Office of Research Services will be advised that ethical approval has expired and the REB file closed.

When your research is concluded, you must submit a Project Completion (Final) Report to close out REB approval monitoring efforts. Failure to submit the required final report may mean that a future application for ethical approval will not be reviewed by the Research Ethics Board until such time as the outstanding reporting has been submitted.

At any time, you can login to the Research Portal to monitor the workflow status of your application.
If you encounter any issues when working in the Research Portal, please contact the system administrator at research_portal@athabascau.ca.
If you have any questions about the REB review & approval process, please contact the AUREB Office at (780) 675-6718 or rebsec@athabascau.ca.
Sincerely,

Debra Hoven
Chair, Centre for Distance Education Departmental Ethics Review Committee
Athabasca University Research Ethics Board

REB Modification Approval (Athabasca University)

September 20, 2016

Ms. Joanne Buckland
Centre for Distance Education\Doctor of Education in Distance Education
Athabasca University

File No: 22158

Certification of Ethical Approval Date: April 18, 2016

Dear Joanne Buckland,

The Athabasca University Research Ethics Board has reviewed the modifications to your research entitled 'Time and Its Relationship to Help Seeking Behaviour Toward Learning Strategy Resources with Entering Medical School Students' as outlined in the Modification Request form submitted September 19, 2016 and confirms that the amendments you have outlined are approved.

You may proceed with your project as amended.

At any time you can login to the Research Portal to monitor the workflow status of your application.

If you encounter any issues when working in the Research Portal, please contact the system administrator via research_portal@athabascau.ca.

If you have any questions about the REB review and approval process, please contact the AUREB Office at (780) 675-6718 or rebsec@athabascau.ca.

Sincerely,

Sherri Melrose
Chair, Research Ethics Board

Appendix K: IRB Approval (St. George's University)

St. George's University

Institutional Review Board

18th March 2016

Joanne Buckland
Department of Educational Services
St. George's University, Grenada, W.I.
Email address: jbucklan@sgu.edu

***Re: Approval of SGU IRB Application* 16019-"Time and Its Relationship to Help Seeking Behavior Toward Learning Strategy Resources With Entering Medical School Students"**

Dear Ms. Buckland,

Subsequent to your application for approval for the use of human participants in the captioned research project by the St. George's University Institutional Review Board (IRB), this is to advise that your revised application is hereby approved.

If there are no obstacles and no changes to the research protocol as approved, kindly note that we shall require a progress report twelve months following the date of approval. An annual summary report is due no later than **Monday, 20th March 2017**. The form is also posted on the IRB page of the St. George's University's website. Please submit it to the IRB Administrator, Kareem Coomansingh, email kcoomans@sgu.edu, telephone 473 444-4175 x 3221 and fax 473 444-4388. An e-version is preferred.

In the event that any change(s) is anticipated, as the Principal Investigator, you must notify the IRB to seek permission to make such change(s) before you can proceed. Should you have any questions regarding this approval, please contact the IRB Administrator.

Outcomes of research must be provided to the IRB/SGU Office of Research. Any publications or conference presentations arising from the research should be shared with the Office of Research. All conference presentations and publications are listed in the SGU Annual Report. A comprehensive list of past completed research projects can also be found in this report.

Sincerely,

Robert Hage, MD, PhD, DLO, MBA
Chair, Institutional Review Board
Professor, Department of Anatomical Sciences

cc: Calum Macpherson, PhD, DIC, Director of Research, St. George's University

St. George's University • Grenada • West Indies
Telephone: 473 444-4175 x 3221 • Email: kcoomans@sgu.edu

IRB Modification Approval (St. George's University)

Hi Joanne,

The IRB Chair has reviewed your request for modifications, which includes addition of a post survey, and has approved these changes. Please proceed with the study protocol as stated.

Regards

Kareem Coomansingh, M.P.H.
SGU IRB, Office of Research
St. George's University
St. George's, Grenada, West Indies
Tel: (473) 444-4175 x 3221
Email: kcoomans@sgu.edu