APPLYING THE ARCS MODEL FOR REDUCING GRADUATE STUDENT CLASS DROPOUT

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Chapter 1: The Problem Statement and Its Development

Applying the arcs model for reducing graduate student's class dropout

Introduction

Over the past few decades, graduate student attrition has become a significant concern in higher education institutions worldwide, with approximately 50% of graduate students dropping out of their classes before completion (Allum & Okahana, 2015). The problem of graduate student class dropout has become a pressing issue in higher education institutions, with many students failing to complete their programs due to various reasons (Allum & Okahana, 2015; Braxton, Hirschy, & McClendon, 2004). High dropout rates can negatively impact universities' reputations, student enrollment, and funding opportunities (Braxton, Hirschy, & McClendon, 2004). Another study by (Pembridge, Brandenburg, & Daniel, 2021) found that students in STEM fields are particularly vulnerable to class dropouts. Therefore, reducing graduate student class dropout rates is crucial for both students and institutions. This paper will describe the problem, purpose, review of the literature, and proposed methodology of the impact of the ARCS model on student class dropout.

Statement of the Problem

The problem addressed in this study is the high percentage of graduate students dropping out of classes, which is related to low student engagement. The high rate of graduate student dropout is a persistent issue in higher education institutions that impacts both the students and the institutions (Glaze & Parks, 2019). The reasons for graduate student dropout are complex and multifaceted, but they are often related to a lack of engagement (Tinto, 1993). There are several factors that can contribute to students feeling overwhelmed and unmotivated, which can lead to dropping out of their classes. According to a study by the Council of Graduate Schools (CGS) in

2018, some of the top reasons for graduate student attrition include personal and financial problems, lack of mentorship, academic difficulties, and competing demands on time (Allum & Okahana, 2015; Bonk & Wisher, 2000). Additionally, one of the significant factors that contribute to graduate student dropout is the lack of engagement, as mentioned (Kuh, 2009). Therefore, the lack of engagement reduces their motivation to complete their studies.

Significance of the Problem

The problem of high rates of graduate student dropout due to low levels of engagement is a pressing issue with significant negative consequences for both students and higher education institutions with consequences such as reduced enrollment, decreased funding opportunities, and damaged reputations. Individual students who drop out of graduate programs face a range of negative consequences, including lost time and money, reduced earning potential, and diminished career prospects (Pembridge, Brandenburg, & Daniel, 2021). On the other hand, higher education institutions that experience high rates of graduate student attrition may face decreased revenue, reduced reputation, and decreased program effectiveness (Lovitts, 2001). Additionally, the loss of highly skilled students who drop out of graduate programs can result in a loss of valuable human capital for both institutions and society at large (Allum & Okahana, 2015). Therefore, it is essential to address the problem of graduate student attrition and promote student engagement to ensure the success of both students and institutions.

To address this problem, the ARCS model, which is a motivational design framework, can be used as a theoretical framework.

Theoretical Framework

The theoretical framework of the problem is the ARCS model. The ARCS model, which stands for Attention, Relevance, Confidence, and Satisfaction, is a theoretical framework that can

help engage learners and promote motivation (Keller, 1987). Research has shown that using the ARCS model in instructional design can effectively promote learner motivation and engagement (Kuh, 2009). By applying the ARCS model, instructional designers can create learning experiences that grab students' attention, connect the content to their goals and interests, build their confidence, and provide them with a sense of accomplishment and enjoyment (Keller, 1987). Similarly, (Bonk & Wisher, 2000) examined the effects of the ARCS model on learner satisfaction in an online course. The study found that learners who were exposed to instructional materials developed based on the ARCS model reported higher levels of satisfaction with the course. This approach has been shown to lead to increased student engagement and motivation, as demonstrated in studies by (Keller, 1987; Kuo & Chen, 2020; Bonk & Wisher, 2000).

Purpose Statement

The purpose of this research is to apply the ARCS model to improve student engagement for student dropout rates for graduate students in the Department of Engineering and Technology at Southeast Missouri State University.

Research Questions

The following research questions will be answered in this study:

1. What is student engagement?
2. What is the impact of student engagement on student dropout for graduate students in the Department of Engineering and Technology at Southeast Missouri State University?

Definition of Terms

ARCS Model: a motivational design model that stands for Attention, Relevance, Confidence, and Satisfaction, which is designed to enhance student motivation and engagement in the learning process (Keller, 1987).

Student Engagement: the extent to which students are involved in activities that reflect higher-order cognitive skills and positive academic behaviors, as well as the quality of their interactions with faculty, peers, and staff in ways that support learning and personal development. (Kuh, 2009).

Dropout: the act of leaving a course or program before completion, which is often used interchangeably with dropout in higher education research (Glaze & Parks, 2019).

Limitations

One limitation of this study is that it will only be conducted at one department of the university, which may limit the generalizability of the findings to other departments or institutions. This is a common limitation in research studies, and it is important to acknowledge the potential for limited generalizability when interpreting the results. It is possible that the results of this study may not be representative of other universities or academic departments, and further research may be needed to determine if the findings can be generalized to other contexts.

Chapter 2: Review of Literature

Introduction

This review's initial section will give a general summary of student dropouts, which is also the research's dependent variable. The next section will concentrate on how researchers used the ARCS model in the study. The subsequent critical analysis of earlier studies on the effect of the ARCS model that has affected student dropout in the literature will follow the literature review. The independent variable, student engagement, which has a significant impact on dropout rates, will be discussed in more detail in the section that follows. The relationship between the dependent and independent variables is described in the following section. Each part will include references to other studies as evidence.

Student Class Dropout

Student class dropout refers to the phenomenon of students leaving or discontinuing their education programs before completing their courses. This can happen for a variety of reasons, including personal, financial, and academic factors. Student class dropout is a serious concern in higher education as it not only affects the individual student but also has negative impacts on institutional outcomes such as retention rates, graduation rates, and academic reputation.

Studies have explored the factors that contribute to student class dropout and strategies to prevent it. For example, (Alhassan, Yusuf, & Akeem, 2019) investigated the reasons for student class dropouts in a Nigerian university and found that when students do not get engaged in the classroom then they tend to lose their interest in learning, and in the end, they drop the class because of inadequate academic preparation. Similarly, (Bao, Zhu, & Chen, 2019) identified a range of factors that influence student class dropout, including institutional factors such as academic support services, student engagement, and campus culture. These studies highlight the

importance of understanding the complex factors that contribute to student class dropout and developing strategies to prevent it.

ARCS Model

The ARCS model is a widely used theoretical framework that aims to enhance learner motivation and engagement in educational settings. According to (Keller, 1987), the ARCS model consists of four components: attention, relevance, confidence, and satisfaction. Attention refers to capturing learners' attention through stimuli that are relevant and meaningful to them. Relevance involves making the content and learning activities relevant to learners' goals and interests. Confidence refers to building learners' confidence in their ability to learn and succeed, while satisfaction focuses on providing feedback and reinforcement to learners as they progress toward their goals.

Studies have highlighted the effectiveness of the ARCS model in promoting student motivation and engagement. (Kuo & Chen, 2020) found that instructional designers who used the ARCS model reported higher levels of learner motivation and engagement than those who did not use the model. (Bonk & Wisher, 2000) also found that using the ARCS model in instructional design resulted in higher learner satisfaction and retention rates. Furthermore, the ARCS model has been applied in various educational contexts, including online learning (Kuo & Chen, 2020), nursing education (Torkzadeh & Bahmani, 2019), and language learning (Mnyawami, 2022). These studies have reported positive outcomes, with learners demonstrating increased motivation and engagement because of using the ARCS model.

In addition to the ARCS model, studies have also highlighted the importance of student engagement, interaction with faculty, and motivation in improving student retention rates. (Wang & Eccles, 2012) found that engagement with academic and social activities was positively

associated with student retention. Similarly, a study by Zhang and Kenny (2010) found that interaction with faculty positively impacted student engagement and retention rates. These findings suggest that incorporating the ARCS model into instructional design, along with promoting engagement and interaction with faculty, can potentially improve student retention rates in higher education.

Overall, the ARCS model provides a comprehensive and evidence-based theoretical framework for understanding and improving student engagement. This research aims to extend the existing literature by applying the ARCS model specifically to the issue of graduate student dropout rates.

Student Engagement

Student engagement refers to the degree of involvement and investment that students have in their academic experiences. Various factors can influence student engagement, including student-faculty interaction, which is a critical factor in promoting academic success and engagement (Allum & Okahana, 2015; Glaze & Parks, 2019). To improve student engagement, researchers have utilized the ARCS model, which aims to enhance the Attention, Relevance, Confidence, and Satisfaction of students in the learning process (Keller, 1987).

To enhance student engagement, many studies have applied the ARCS model, which aims to improve the Attention, Relevance, Confidence, and Satisfaction of students in the learning process (Keller, 1987). For example, (Bao, Zhu, & Chen, 2019) used the ARCS model to reduce learning dropout rates among college students in STEAM fields (Kuo & Chen, 2020) found that the ARCS model improved student engagement and learning motivation, while (Yang & Chang, 2021) applied the ARCS model to enhance student engagement in online learning environments. These studies demonstrate the potential effectiveness of the ARCS model in

enhancing student engagement in various academic settings. However, there is still a need to investigate the effectiveness of this model in specific contexts, such as cybersecurity awareness programs, which are the focus of this study. By applying the ARCS model to cybersecurity awareness programs, this study aims to provide insights into how to improve student engagement in this important area of study. Understanding the components of the ARCS model is critical in comprehending the role of motivation in enhancing student retention, which will be discussed in the next section.

Relationship Between the Student Engagement and Student Class Dropout

The relationship between student engagement and class dropout is a complex issue that has been explored by numerous studies. Student engagement has been found to be a significant predictor of academic achievement and retention (Ghavifekr, Afshari, & Siraj, 2014; Lovitts, 2001). However, disengaged students are more likely to drop out of classes and even entire programs (Gardner, 2009). In a study by (Glaze & Parks, 2019), student engagement was found to be negatively related to class dropout rates among undergraduate students. The authors found that students who reported higher levels of engagement, including participation in class discussions and interaction with faculty, were less likely to drop out of their courses. The findings of this study highlight the importance of student engagement in promoting academic success and retention.

On the other hand, studies have also explored the factors that contribute to class dropout rates among students. In a study by (Pembridge, Brandenburg, & Daniel, 2021), the authors found that academic and social integration, including the quality of student-faculty interactions, significantly predicted class dropout rates among undergraduate students. Similarly, a study by (Fredericks, Blumenfeld, & Paris, 2004) found that lack of academic and social integration, low

engagement in the learning process, and dissatisfaction with academic experiences were among the key factors that contribute to student dropout rates. These studies suggest that improving student engagement and fostering positive student-faculty interactions could help reduce class dropout rates and improve student retention. Therefore, understanding the relationship between student engagement and class dropout rates is critical in developing effective strategies to promote academic success and retention among students.

Chapter 3: Proposed Method and Timeline

Methodology

Design:

The proposed design will be a non-experimental quantitative survey methodology. This research will use a mixed survey quantitative design. The survey will be administered in two ways, depending on the preference of the participants. For some participants, the survey will be administered face-to-face, while for others, the survey will be distributed as a paper survey.

Participants:

The population for this study will be graduate students enrolled in the Department of Engineering and Technology at Southeast Missouri State University. In accordance with their availability and desire, participants will select the survey methods they wish to use.

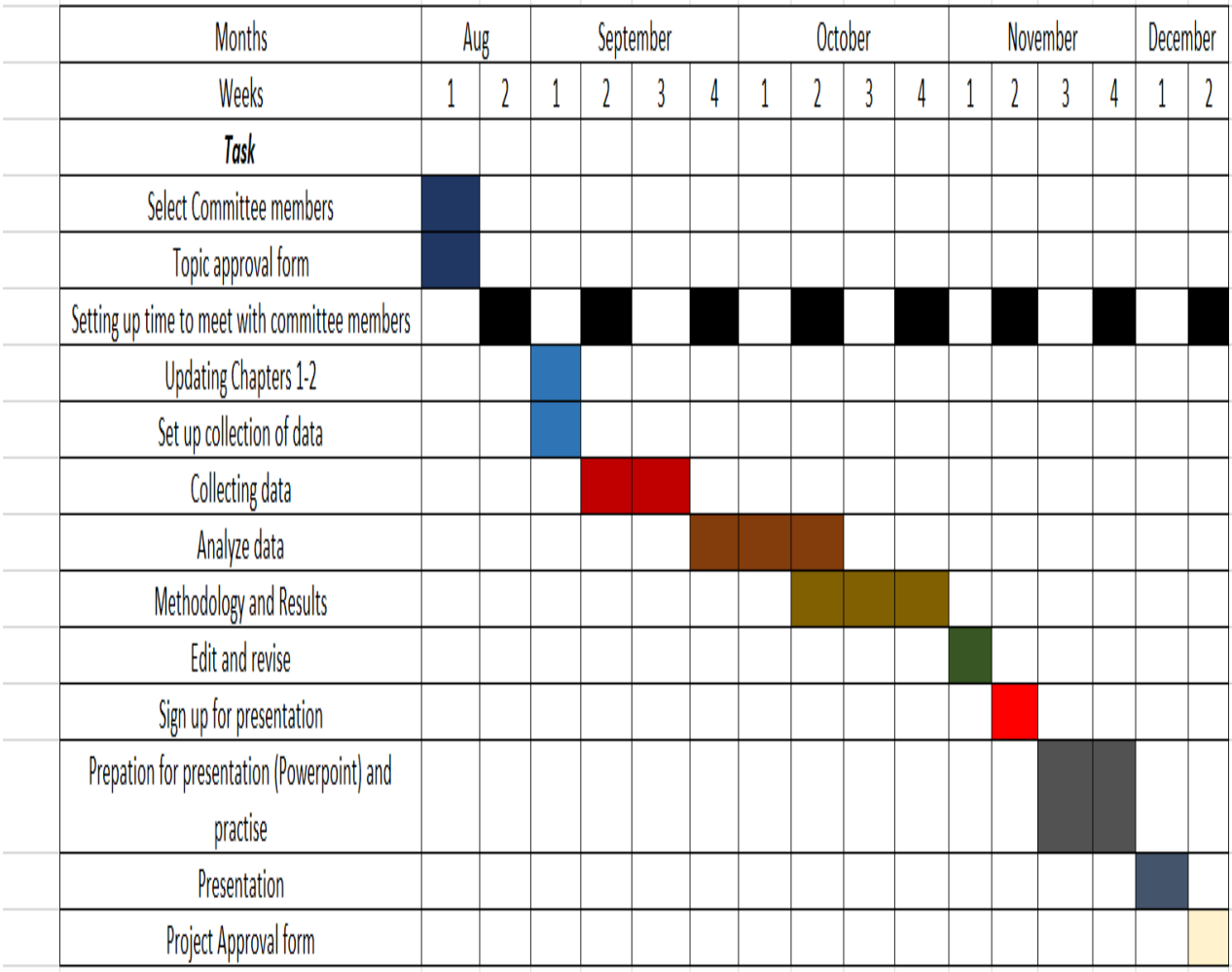
The Instruments:

Data from the paper surveys will be manually entered into a spreadsheet for analysis, while data from the face-to-face interviews will be recorded and transcribed for analysis. Descriptive statistics will be used to analyze the survey data. The responses will be coded and categorized into themes based on the research questions.

Data Collection:

Data collection methods will include paper surveys and face-to-face surveys/interviews. Participants will be provided with a consent form and will be informed that participation in the study is voluntary, and their responses will be kept confidential. The data collected will be stored securely and only accessible by the researcher.

Timeline


Months
Aug
September
October
November
December
Weeks
1 2 1 2 3 4 1 2 3 4 1 2 3 4 1 2
Task
Select Committee members
Topic approval form
Setting up time to meet with committee members
Updating Chapters 1-2
Set up collection of data
Collecting data
Analyze data
Methodology and Results
Edit and revise
Sign up for presentation
Prepation for presentation (Powerpoint) and practise
Presentation
Project Approval form

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