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UTILIZING EDUCATIONAL TECHNOLOGY FOR FINANCIAL LITERACY LEARNING
OUTCOMES

A Thesis by:

ELIASZ MCCULLEN

Submitted to the Office of Graduate Studies

Texas A&M University-San Antonio

In partial fulfillment of the requirements for the degree of

MASTER OF ARTS

May 2024

Major Subject: Curriculum & Instruction

ABSTRACT

Utilizing Educational Technology for Financial Literacy Learning Outcomes

May 2024

Eliasz McCullen

Graduate Thesis Chair: Lorrie Webb

Undergraduate college students were surveyed during education courses at a Hispanic-Serving Institution, Texas A&M University- San Antonio, to investigate whether there is a difference in learning objectives of financial literacy between two types of instructional methods: a simple slide show and a more interactive form of instructional technology. The results of the study indicated that there was no statistically significant difference between the two groups, however, the control group fared slightly better on the posttest. Possible explanations for these findings include limitations in the quasi-experimental design and factors related to the sample characteristics. Nonetheless, the study provides valuable insights into the effectiveness of instructional methods in asynchronous and blended learning environments, informing instructional practices and guiding future research in educational technology.

ACKNOWLEDGMENTS

I would like to express my deepest gratitude to my thesis chair, Dr. Lorrie Webb, for her support, guidance and encouragement throughout the entire process. Her expertise and dedication have been instrumental in shaping this project.

I am immensely grateful to my thesis committee members, Dr. Michael Mary, Dr. Karen Burgard, and Dr. Young Rae Kim for their insightful feedback, constructive criticism, and scholarly mentorship. I am extremely grateful for the learning opportunities they have provided in working with me.

I also extend my sincere appreciation to the Mays Center for Experiential Learning and Community Engagement for providing help, resources and support that facilitated my research endeavors.

To my family, whose unwavering love and encouragement supported me through this journey, thank you. Lastly, I want to thank my friends for their encouragement, support, and camaraderie during this challenging yet rewarding endeavor. Your support has meant the world to me.

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CHAPTER I INTRODUCTION

In the rapidly evolving post-pandemic landscape of higher education and online learning, the utilization of asynchronous instruction has emerged as a powerful tool to engage a diverse student population, transcending geographical and time constraints (Cohen, 2021). This flexible approach enables students to access educational content at their own pace, making it a valuable resource worldwide. However, as this mode of instruction gains popularity, it becomes increasingly crucial to identify the most effective methods for ensuring successful learning outcomes.

The question of instructional effectiveness in asynchronous settings has emerged as a pressing concern for instructional designers, administrators, and instructors (Cohen, 2021). According to the author, effective online learning needs to be learner-centric and self-directed. “Well-designed online learning should be organized around the learners’ needs, not teacher convenience” (p.16). As traditional lecture-based, teacher-centric education evolves towards more student-centric approaches, particularly in online settings, stakeholders seek to understand the advantages and disadvantages of various online learning methods. This shift in pedagogical approaches, urged by Devlin and McKay (2016), emphasizes the need to move beyond mere replication of face-to-face experiences: “as online learning continues to evolve many have proposed that we think differently about our pedagogical approaches, to move beyond the replication of the face-to-face experience” (p. 322). Within the realm of financial education, there is a growing demand to explore and evaluate different approaches, especially within the context of digital technology usage. Despite the significant attention online learning has received, research specifically comparing traditional slideshow presentations to alternative digital instructional modules has been notably limited.

It is clear from the above research and discussion that asynchronous education has been an ongoing topic as technology continues to grow and be a part of society. However, a critical inquiry arises: What constitutes the most effective approach to asynchronous instruction? The need to highlight the advantages inherent in a diverse mix of online learning methods is paramount for instructional designers, administrators, and educators. This study presented an exploration within the domain of financial education, specifically examining the comparative efficacy of traditional slide presentations against alternative modalities of digital modules created in authoring tools – an area that has been previously underexplored in scholarly investigation.

The researcher embarked on this study to reveal the most effective methods of asynchronous instruction, recognizing the impact of technology on higher education. As the technological world continues to evolve it becomes more pressing to assess the efficacy of various instructional methods, particularly in addressing topics such as financial literacy. By undertaking this investigation, the aim is to discern which instructional modality yields optimal learning outcomes for students, especially with the unique demographic composition of Texas A&M University-San Antonio (*Student Demographics - Texas A&M University-San Antonio*, n.d.). This institution, characterized by a significant proportion of first-generation college students, and a predominantly Latinx population, highlights the importance of student-centered approaches that resonate with diverse student backgrounds. Additionally, based on past experience with the student demographics, the researcher felt compelled to instruct students asynchronously and constructed a quasi-experiment that would support the body of data.

Research Problem

This study aims to bridge this gap in the existing literature by investigating the differences in learning outcomes between traditional presentation methods, such as PowerPoint,

and digital modules, such as Articulate Rise, in asynchronous instructional environments. The central research question driving this study is:

What, if any, are the differences in learning outcomes between traditional presentations and digital modules?

By addressing this question, the researcher intends to shed light on the most effective ways to instruct students asynchronously, contributing valuable insights to the field of online education.

To provide a comprehensive understanding of the subject, the researcher designed an experiment, incorporating key educational theories to guide the study. This study adopted a framework of concepts from experiential education (Kolb & Kolb, 2018), scaffolding (Shvarts & Bakker, 2019), constructivism (Von Glasersfeld, 1989), and mastery learning (Bloom, 1987). These theories serve as the foundation for the research, shaping the experiment's design and the researcher's lens. Because the intervention was short, constructivism was most easily applied in the design, however, the researcher's lens was informed by all of these theories.

The outcomes of this study are poised to inform instructional practices, enhance online learning design, and empower educators to make evidence-based decisions regarding the use of educational technology for asynchronous instruction specifically in financial education. Through analysis using quantitative methods, the researcher aims to provide valuable recommendations that can significantly impact the quality and effectiveness of online education, particularly within the context of financial education.

Contextual Factors

The importance of providing quality financial literacy education at Texas A&M University-San Antonio is emphasized by the unique demographic composition of its student

body. As an institution characterized by high levels of first-generation college students, comprising approximately 73% of the student population, A&M-SA serves a significant portion of individuals who may lack prior exposure to financial concepts and resources (Whitney et al., 2018). Moreover, with 77% of students identifying as Latinx, the institution reflects the rich diversity of its surrounding community, which brings forth cultural nuances and challenges that must be addressed in financial education initiatives (*Student Demographics - Texas A&M University-San Antonio*, n.d.).

Additionally, A&M-SA grapples with a student population that experiences a lower than average rate of persistence rate, 11% four-year graduation rate compared to 64% (*Persistence – Rates 2024; Undergraduate Graduation Rates 2022*), which some research has shown to be linked to finances and financial aid (Latino et al., 2020). This socioeconomic reality further emphasizes the critical need for effective financial literacy education to empower students with the knowledge and skills necessary to navigate financial decisions, break the cycle of poverty, and achieve financial stability (Lusardi & Mitchell, 2014).

Understanding the best modality of instruction for these diverse demographics of students is paramount in ensuring equitable access to quality education and fostering positive learning outcomes. By identifying instructional methods that resonate with the unique backgrounds, learning preferences, and challenges faced by students at this institution, educators can tailor financial literacy and other initiatives to maximize effectiveness and relevance. Moreover, determining which instructional modalities yield the most favorable outcomes is essential for allocating resources efficiently and strategically, ultimately contributing to the holistic development and success of students at A&M-SA and generalizing to other institutions with high levels of diverse populations.

CHAPTER II LITERATURE REVIEW

The integration of educational technology has become a central part of the classroom, whether asynchronous, synchronous, or in-person, and, as such, it is a major focus of educational discourse (Delgado et al., 2015; Starcic, 2010). According to the above literature, this discourse is motivated by improved, inclusive classroom experiences and learning outcomes, learner-centric strategies, and innovative instructional methods; however, it's worth mentioning that the researcher discerned a notable gap in financial education within educational technology, and instead explored comparative educational technology in other disciplines with the hope this study could begin to address this gap. This review explores the multifaceted impact of some of the current literature on educational technology in the aforementioned areas.

Theoretical Framework

Financial literacy education plays a crucial role in empowering individuals to make informed financial decisions and achieve long-term financial stability (Lusardi & Mitchell, 2014). However, the effectiveness of financial literacy initiatives often depends on the instructional approaches adopted, particularly in institutions serving diverse student populations like A&M-SA (Menberu, 2024). To address the unique challenges and goals of financial literacy education at this institution, this researcher draws upon a theoretical framework informed by four key theoretical perspectives: Constructivist Learning Theory, Experiential Learning Theory, scaffolding, and Mastery Learning Theory.

Constructivist Learning Theory posits that learners actively construct their understanding of the world through interaction with their environment. In the context of financial literacy education at A&M-SA, constructivist approaches can promote student engagement and ownership of learning by incorporating culturally relevant content and encouraging collaborative

learning experiences. By incorporating interactive and engaging online modules, educators can create interactive experiences for students to construct their understanding of content and learning objectives, all with a culturally relevant lens. “Knowledge is never acquired passively, because novelty cannot be handled except through assimilation to a cognitive structure the experiencing subject already has” (Von Glasersfeld, 1989, p.136). By acknowledging students' diverse perspectives and backgrounds, constructivism fosters a learning environment that honors students' identities while facilitating the acquisition of essential financial or other skills. The experimental intervention in this study specifically drew upon constructivist theory.

Experiential Learning Theory emphasizes the importance of learning through direct experience and reflection. Kolb and Kolb (2018) describe a series of learning cycles for educators to design for their learners. They suggest designing a curriculum that increases with complexity over time so that students “discover more about the practical limits and the wider applications of their new knowledge by taking what they have learned in one situation and using it in another” (p. 9). Given A&M-SA's student body composition, characterized by high levels of first-generation college students and a majority Latinx population, experiential education offers a promising approach to engage students in meaningful financial learning experiences. By immersing students in real-world financial scenarios and encouraging reflection on their experiences, experiential education can foster a deeper understanding of financial concepts and promote active learning among diverse student groups.

The concept of scaffolding, metaphorically speaking, carries various interpretations depending on the perspective of the theorist discussing it. This paper, however, will define scaffolding as the supportive structures and guidance offered to learners as they tackle challenging tasks. In teacher-focused learning, this support may manifest as educators

undertaking tasks that learners are not yet prepared for, or as additional support and tutoring to aid students. Moreover, technology can be strategically employed in this process. As noted by Schvarts and Bakker (2019), "We acknowledge that the concept of scaffolding should be allowed to travel and expand to other learning systems such as whole-class scaffolding or computer-based scaffolding" (p. 18). At A&M-SA, where students may encounter barriers related to their socioeconomic backgrounds and cultural identities, scaffolding techniques play a vital role in navigating complex financial and other concepts. By breaking down learning tasks into manageable steps and providing customized assistance, scaffolding empowers students to leverage their existing knowledge and skills, thereby enhancing their overall learning outcomes.

Mastery Learning focuses on ensuring that all students achieve a predetermined level of mastery before progressing to more advanced concepts through formative assessment and corrective feedback. Bloom (1987) argued that all learners be pushed to reach their full potential. "We must teach each child with the basic assumption that he can learn well when given the support and encouragement needed" (p. 508). Given A&M-SA's efforts to support students with lower-than-national-average persistence rates, mastery learning principles can be instrumental in providing personalized and targeted instruction to meet students' individual learning needs. By offering opportunities for remediation and mastery assessment, mastery learning promotes equitable access to quality financial education and supports students in achieving long-term success.

Impact of Educational Technology on Learning Outcomes

Chen et al. (2019) conducted a study involving 204 college students, in which researchers compared the effectiveness of traditional paper and pencil methods to digital gamification in enhancing learning outcomes. Their findings indicated that interactive games

resulted in higher quiz scores, underscoring the potential of educational technology to positively impact learning. The study recruited participants from four different programs at a large university in Taiwan, and participation incentives were not provided. The researchers utilized a 10-item scale to gauge participant motivation for learning the subject, incorporating a subscale from an instructional materials motivational measure to assess attention. Additionally, they included a four-item scale to evaluate participants' prior knowledge of the subject matter as a control measure. The investigation revealed that the interactive games yielded higher quiz scores, suggesting further research, and leveraging instructional additional technology in the classroom.

Building on this exploration of educational technology, Mshayisa (2020) found that real-time formative assessment tools like Plickers, despite lacking entertainment value, offered benefits such as anonymity in large lecture halls, contributing to a positive learning environment. In this study, researchers studied first-year students (n=85) enrolled in a Food Technology course at a large public university in South Africa. The researchers used the interactive technological component of formative assessment after face-to-face implementation of slides in the classroom. The study used a 5-point Likert scale to discover student perceptions of Plickers, in addition to 2 open-ended questions such as “What did you like about the use of Plickers?” (p. 54). Overall, Mshayisa revealed that students valued the interactive strategies in the classroom and found the tools used in the study to be an opportunity for students to think critically, collaborate and actively engage in class. By blending face-to-face interaction and interactive technology, the researchers adopted a "best of both worlds" approach, potentially optimizing instructional effectiveness.

Ai-Lim Lee et al. (2010) studied 232 senior high school Biology students from 4

randomly selected high schools in Malaysia. Participants underwent a lesson on frog anatomy using a desktop Virtual Reality (VR) software program called V-Rong. Two weeks before the VR lesson students completed the Kolb Learning Style Inventory, a spatial ability test, and a pretest on frog anatomy. Following the lesson, students took a posttest and completed Likert-style questionnaires. Qualitative feedback was gathered from debriefing sessions. The researchers found that in the VR learning environment, features indirectly affected the learning outcomes through interaction and learning experiences, with factors such as presence, motivation, and reflective thinking playing significant roles. Results also revealed a moderating effect of spatial ability. The use of instructional technologies including this example of VR reveals not just an increase in learning outcomes, but student motivation and reflective thinking.

Pridmore et al. (2010) compared lecture-style instruction to multimedia approaches with 204 information technology (IT) students, highlighting the latter's efficacy in increasing student satisfaction and comprehension rates. Lectures, as noted by the authors, have historically been efficient in conveying conceptual knowledge, especially in analytical topics like those in introductory IT classes. They provide a structured approach to information and facilitate the development of a theoretical foundation; however, this style may fall short in promoting higher-order cognitive skills and practical applications of knowledge. The authors compared lecture and multimedia instructional methods and measured learning outcomes in addition to student perceptions, learning interest, motivation, and comprehension. The questionnaires were on a 5-point Likert scale, and the outcome was that the most ideal situation was a blended classroom, but students perceived no weaknesses in a multimedia approach. As the authors propose, "The combination of the lecture and multimedia case study methods is more likely to

lead to a higher quality of learning than either method alone. (Pridmore et al., 2010, p. 304).

Similarly, Stanley and Marsden (2012) demonstrated the effectiveness of problem-based learning (PBL) in fostering valuable skills among accounting students, further supporting the notion that technology-mediated instructional methods can create engaging learning environments. The researchers at Queensland University of Technology (QUT) studied 7 student cohorts over 4 years, using a descriptive case study in a mixed methods questionnaire. The questionnaire, aligned with QUT's Student Evaluation of Unit questions included additional questions specific to project-based learning skills development. Researchers found that students generally enjoyed PBL and reported increased levels of problem-solving, teamwork, and time-management skills. The authors stated:

...the focus of the PBL approach centered on three main features: the importance of questioning by students who were initially presented with incomplete facts (as a professional advisor would experience when dealing with a client for the first time); solving unstructured problems; and students working together in groups sharing their research findings and solving problems for the entire semester. The results indicate that PBL was generally effective in all these areas. (p. 267)

Most participants rated PBL positively and acknowledged its value in skill development.

In summary, insights can be learned from the intersection of educational technology and instructional methodologies. The above authors used a variety of methodologies to underscore the efficacy of technology in enhancing learning outcomes among learners, showcasing the transformative potential of technology in education. Overall, these studies demonstrate how leveraging instructional technology to optimize instructional effectiveness can enhance the learning experiences of diverse student populations.

Shifting Instructional Paradigms

Bush (2012) emphasized the need to move away from traditional teaching paradigms towards more learner-centric approaches, aligning with the findings of Yeung et al. (2021), who underscored the value of educational technology in enhancing the educational experience when grounded in sound learning theories. He suggests that educational technology has the potential to not only enhance learning but to provide assessment for faculty competence. Yeung et al. led a rigorous review of educational technologies of many kinds including video-based instruction, online courses, computer-assisted instruction, conventional classroom instruction versus computerized instruction, conventional classroom instruction versus conventional instruction supplemented with computerized instruction, mobile devices, simulations, animations, games, and flipped classrooms with effects on learning outcomes. After this comprehensive review, researchers found that, generally, technology is most useful when applied as an instructional method, such as information viewed on a screen rather than paper.

In summary, the previous studies suggest that technology is most effective when utilized as an instructional method, particularly when information is presented on a screen rather than on paper. Bush (2012) advocates for a shift away from teacher-centric, lecture-style approaches and more towards a learner-centric approach. The work of Yeung et al. (2021) aligns with the idea of using educational technology for classroom enhancement, rather than as a stand-alone instructional methodology. As noted by the authors, “Thus, this review provides important new data showing that the effects of technology on learning depend critically on how the affordances of that technology align with effective learning principles (p. 1622). The authors discuss how critical it is for educators and curriculum developers to apply technology with the principles that would best be aligned with them to benefit the students, otherwise they could

potentially become a detriment to learners. Like all tools, educational technology should be applied appropriately. The rigorous review of their works suggests that a blended classroom may be a path to excellence for many learners and highlights the importance of integrating technology into teaching practices to optimize learning outcomes and educational experiences.

Perceptions of Educational Technology

School districts can be wary of investing in new technologies if they are not backed by data and show results in the classroom. Educational research can assist in this, as Pi and Hong (2016) investigated the impact of video podcasts on learning outcomes, revealing that formats incorporating both the instructor and visual aids yielded the highest test scores, underscoring the importance of pedagogical design. The researchers questioned whether video podcasts provide an effective learning environment. For their study, they recruited 96 undergraduate students from a Chinese university of education and registered them all with an eye movement tracker for calibration for the study to measure their engagement. Then the participants were randomly split into four groups and shown four versions of podcasts; one was slides only, one was only the instructor speaking, the third was the instructor with slides, and lastly a view of an entire classroom from a desk point of view. The instructor's verbiage was the same in all four video styles. The participants also took a pretest to account for knowledge of the subject matter, Developmental Psychology, and a posttest to measure learning after intervention. The posttest contained 15 questions. "The results of the study showed that of the four video podcast modes studied the Instructor and PPT mode most enhanced the learners' learning, which supported the first hypothesis that a video podcast with both the instructor and PPT slides best facilitates the learning outcome" (Pi & Hong, 2016, p. 141). The authors suggested in their discussion that the cognitive load of social cues from seeing an instructor in addition to the slides enhanced

participant learning.

Additionally, Edelberg (2020) explored the perceptions of instructional technology leadership among 85 administrators at an Indiana school district, revealing varying perspectives among educational stakeholders. Edelberg adapted a survey from Brush and Bannon (1998) for participants to complete, and then ranked their means. They found that upper administrators such as superintendents tended to rank highly experiences and skills related to showing teachers how to operate technology, but less so instructional experiences and credentials. Administrators wanted and ranked highly the incorporation of technology in their planning and classrooms, and wanted assistance for their teachers in learning the technology. The participants in this study valued the skill of teaching technology more than they valued experience in a classroom. “Results indicate that respondents perceive educational experiences and credentials as not very important relative to other skills and experiences related to the role of instructional technology leadership” (p. 269). The author’s findings shed light on perspectives among educational stakeholders regarding instructional technology leadership. These findings suggest a prioritization of skills related to technology implementation and teacher support over traditional educational experiences and credentials. This research highlights the leveraging of technology in the classroom for instructional purposes being increasingly valid.

Jones and Paolucci (1999) proposed a framework for evaluating the effectiveness of educational technology systems on learning outcomes, laying the groundwork for future research in this area. The authors emphasize the cost of technology at both the higher education and district levels and state that an empirical framework of measuring success and adding value before purchase is imperative. They identified a framework of Instructional System Design

(ISD), using instructional objectives, delivery systems, and learning outcomes as three main components. The authors create a framework of objectives by synthesizing learning domain, learner profile, tasks and grouping, with a delivery system that is decided only after the designer understands the learner profile and tasks and therefore the overall objectives. Learning outcomes are then measured in the forms of cognitive, performance, and attitudinal. The authors believe that with more empirical evidence, including the help of their framework, the perception of technology in education will grow favorably. The researcher of this study would like to move this idea forward as well.

In summary, the reviewed literature underscores the potential of educational technology to transform education by fostering learner-centric approaches, especially blended learning, and innovative teaching methods. However, successful integration requires thoughtful consideration of pedagogical principles and a commitment to enhancing the educational experience (Cohen 2021). By synthesizing findings from diverse studies and drawing upon theoretical frameworks, this review provides valuable insights into the most effective ways to instruct students asynchronously, thereby contributing to the body of knowledge in educational technology research, however, the researcher found was a notable gap in the research in financial education and educational technology. This study may be a step in bridging that gap.

CHAPTER III METHOD

The selection of a quasi-experimental methodology for this study was driven by the need to compare two distinct instructional styles and uncover the most effective approach for achieving optimal learning outcomes. Quasi-experimental designs offer a pragmatic approach to research, allowing for the manipulation of variables in a real-world setting while maintaining some degree of control over extraneous factors (Cook & Campbell, 1979). In this study, the researcher employed a quasi-experimental design to assess the impact of traditional slideshow presentations versus interactive instructional technology on students' understanding of financial literacy concepts. This methodology facilitated the comparison of two instructional modalities within the constraints of an educational environment, providing valuable insights into the practical implications for educators.

Research Design

The researcher created two QR codes for student participants to access for the study. The codes were randomized and given out in classrooms and divided participants into a control and experimental group. Both groups first completed the same pretest in Qualtrics, before entering their specific group instructional tool, and then they completed the same posttest. The control group consisted of PowerPoint slides with information on the topic of financial literacy related to credit cards and the credit system. The experimental group had the same content and learning objectives in an interactive technology that required their touch screen initiation. The interactions included formative assessment checks, check boxes, clicking to continue through stops, and drag-and-drop sections for this group.

Sampling. Students at Texas A&M University-San Antonio (A&M-SA) were the

participants in the study. A&M-San Antonio is a Hispanic Serving Institution (HSI), an institution with over 77% Latinx population, and has a high percentage of first-generation students (*Student Demographics - Texas A&M University-San Antonio*). It was likely that the participants had some barriers to financial wellness, such as race or first-generation college student status. It's worth noting that, based on where the researcher studies, this population and sample was a convenience sample.

The researcher conducted the surveys in Education classes of mostly upper level undergraduate levels, towards the end of a semester. There were a total of 44 participants completing the surveys, with 24 pretests taken by the control group, 21 posttests by the control, and 20 pre and posttests taken by the experimental group. However, because the surveys were tracked by IP address and all did not match up, the researcher only used 18 of the control and 14 of the experimental. In his work on multivariate statistics in the social sciences, Stevens (2001) recommends a nominal number of 15 data points per variable, therefore a minimum of 30 participants was advised for this quantitative study, thus the study still is within the recommended guidelines.

Data Collection. The researcher reached out to instructors of undergraduate classes in educator preparation to request time to recruit for this study during one class session. While addressing each class, the researcher discussed what the study entailed and the purpose. Consent forms (Appendix A) were handed out, collected after students signed, and then QR codes were distributed to those who voluntarily participated. After informing the class of all reasonable actions and options during the study participants took 5-10 minutes of class time to look through slides and instructional materials and fill out surveys before the researcher left. No incentives were offered.

Instruments. The pretest and posttest surveys (Appendix B and C) used in this study

were developed by the researcher and former Financial Education Coordinator from the Mays Center for Experiential Learning and Community Engagement, a department on campus dedicated to various student services. These surveys were designed to measure learning objectives on the credit presentation, and were then revised for the purposes this study. Each survey consisted of the same five questions and was used to compare learning outcomes between the control and experimental groups. Additionally, each pretest included demographic data questions such as combined household income, ethnicity, highest educational attainment of maternal and paternal figures, and age group. All data were collected through Qualtrics.

Analysis Procedures. An analysis of success in learning outcomes was conducted based on pre and posttest scores, and the researcher then used an Independent Samples T-test with a significance of 0.05 to determine how the two groups' scores changed between their pretests and posttests.

CHAPTER IV RESULTS

This study aimed to investigate the differences in learning outcomes between traditional presentation methods, such as PowerPoint, and digital modules, such as Articulate Rise, in a normally face-to-face learning environment. The research question leading to this study arises from the growing importance of educational technology applied in education and the need to identify effective methods for engaging students in online learning environments. This study employed a quasi-experimental design with participants randomly assigned to either a control group exposed to traditional slides or an experimental group exposed to digital modules. By collecting pretest and posttest data from both groups, the study sought to evaluate changes in learning outcomes over the course of the instructional intervention. Through analysis of the collected data, including a means comparison, the study aimed to illuminate any discernible differences in learning outcomes between the two instructional modalities.

Group Statistics

Table 1 represents the raw data of the pretests and posttests in the control and experimental groups. A total 37 students participated in the study, 18 of whom were in the control group and 19 in the experimental, with an average pre-score of 4.00 and 4.00 respectively. The post-scores climbed to 4.44 in the control group and 4.16 in the experimental.

Table 1

Group Statistics

	Test	N	Mean	Std. Deviation	Std. Error Mean
PreRaw	control	18	4.00	.907	.214
	experimental	19	4.00	1.000	.229
PostRaw	control	18	4.44	.784	.185
	experimental	19	4.16	.834	.191

Independent Samples T-Test

Table 2 presents the comparison of means for the control and experimental groups using Independent Samples t-test analysis in addition to the Levene's Test for Equality of Variances to check for equal variances among the samples. In the Levene's Test, equal variances were assumed, meaning the groups had similar population variances in this case. Both the control and the experimental groups started with a mean of 4.0 on a 5.0 scale, and the control group increased to 4.44, over the experimental group score of 4.16. Analysis of the t-test found, with 95% confidence, no statistically significant difference between the control and experimental groups' means.

Table 2

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
PreRaw	Equal variances assumed	.946	.337	.000	35	1.000	.000	.315
	Equal variances not assumed			.000	34.940	1.000	.000	.314
PostRaw	Equal variances assumed	.057	.812	1.075	35	.290	.287	.266
	Equal variances not assumed			1.077	34.998	.289	.287	.266

Descriptive Statistics

Ethnicity. Table 3 displays the frequency and percentage of participants belonging to different ethnic groups. Categories included White/Caucasian, Hispanic, Black/African, and Native American. Participants had the option to select more than one category. Of the

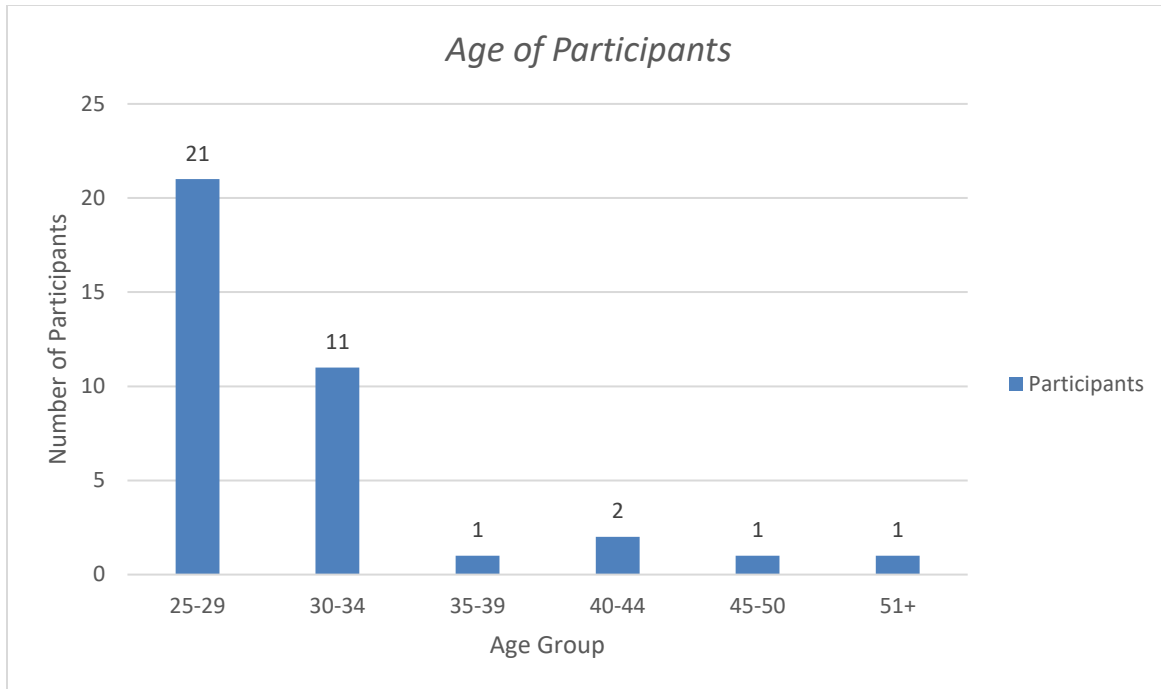
participants, 62.2% identified themselves as Hispanic. This is lower than the overall average of the institution, which is approximately 77% (*Student Demographics - Texas A&M University-San Antonio*, n.d.), suggesting the sample has a slightly different composition than the overall population demographic of the institution.

Table 3

		<i>Ethnicity</i>			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	White/Caucasian	10	27.0	27.0	27.0
	Hispanic	23	62.2	62.2	89.2
	Black/African	2	5.4	5.4	94.6
	Native American	1	2.7	2.7	97.3
	47	1	2.7	2.7	100.0
	Total	37	100.0	100.0	

Age. Figure 1 provides information on participants' ages. The categories were stated in ranges, which included 18-24, 25-29, 35-39, 40-44, 45-50, and 51+. No participants reported themselves in the youngest range; however, most (56.8%) chose the 25-29 range. The second highest ranked percentage (29.7%) was the 30-34 option, and a small percentage placed themselves in each of the other older age groups. The surveyed students were mostly upper-level education students, which is in alignment with these results.

Figure 1



Income. Table 4 below presents the frequency and percentage of participants falling into different income brackets. Categories include income ranges of \$0-\$30,000, \$31,000-\$60,000, \$61,000-\$90,000, and \$91,000-\$120,000. Most participants (37.8%) earned the lowest income, 35% earned between \$31,000 and \$60,000, and only 2.7% earned more than \$91,000.

Table 4

		<i>Income</i>			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	0-\$30,000	14	37.8	37.8	37.8
	\$31,000-\$60,000	13	35.1	35.1	73.0
	\$61,000-\$90,000	7	18.9	18.9	91.9
	\$91,000-\$120,000	2	5.4	5.4	97.3
	\$121,000+	1	2.7	2.7	100.0
	Total	37	100.0	100.0	

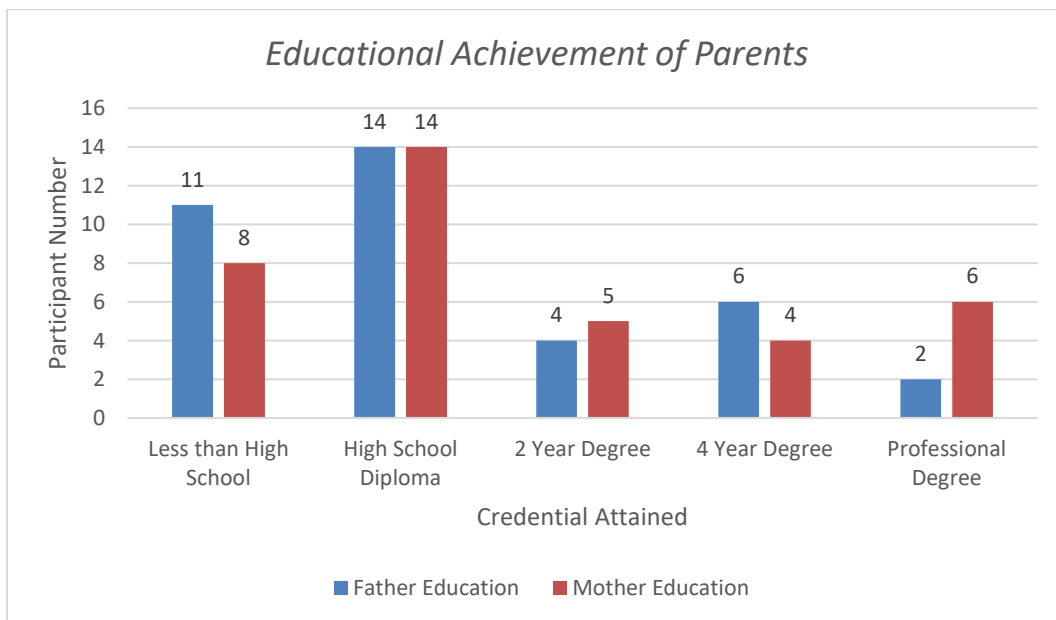
Educational Attainment of Parents. In Figure 2, information on the educational attainment of parental figures (mothers and fathers) of the participants is provided. This figure

presents the frequency of participants whose mothers and fathers achieved various levels of education. Categories included "Less than High School," "High School Diploma," "2 Year Degree," "4 Year Degree," and "Professional Degree."

In this chart, the data show that the majority of students who participated in this study are first-generation college students, meaning that neither of their parents graduated from a four year higher educational institution (Whitney et al., 2018).

The data offer insights into the educational background of the participants' families, reflecting the level of academic attainment among parental figures. First-generation college students can encounter barriers to attendance and persistence, and the intersection of financial well-being and academics is an important issue for this demographic. Understanding the educational context of participants' families can provide context for interpreting the study's findings, particularly in relation to socioeconomic factors and their potential influence on learning outcomes.

Figure 2



Household Size. Table 5 displays the frequency and percentage of participants belonging to different household sizes. Categories included the number of individuals in each household, ranging from 1 to 6 or more. The table offers insights into the household composition of the sample, highlighting variations in family size. The majority of participants lived in a household of 2-4 people, 83.7%. In a previous study the researcher found that students at this university were more likely than their peer institutions to live with family rather than alone when compared to students at peer universities, suggesting they may feel they have a financial safety net (McDaniel et al., 2020).

Table 5

		<i>Household Size</i>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	8.1	8.1	8.1
	2	8	21.6	21.6	29.7
	3	11	29.7	29.7	59.5
	4	12	32.4	32.4	91.9
	6	3	8.1	8.1	100.0
	Total	37	100.0	100.0	

Discussion of Significance

The data revealed no statistically significant differences between the control and experimental groups at either the pre-test stage ($t(35) = 0, p = 1$) or the post-test stage ($t(35) = 1.075, p = .290$). Thus, evidence does not suggest that the intervention had a significant impact on the measured learning outcomes compared to the control condition.

The findings of the t-test analysis indicated that neither intervention led to significant improvements in learning outcomes compared to the control condition. However, the control group's higher mean post-intervention suggests it may have been more successful for the population. Possible explanations for these insignificant results may include limitations in the

experimental intervention design, such as participant frustration with the pacing and control with the digital tool. The experimental group received a design that contained forced stops that required clicks to proceed, clicks for understanding, and drag and drops for matching. Judging by the pretest scores, it is possible that the content was simply too easy for this group of higher-level students and they became frustrated when they could not move forward more quickly, unlike the control group which allowed them to scroll at will and finish quickly. These findings suggest that students who are in asynchronous learning environments may require a high level of control over their content, and highlights the importance of learning levels and differentiation.

CHAPTER V
CONCLUSION
Limitations

Some limitations to this study were sample size, sample diversity, timing of the study, having both groups participate in the same room, and challenge level for the participants. The study sample had multiple issues. The participants represented a convenience sample, which was the College of Education at A&M-SA, from faculty who responded to the researcher's emails. These classes were mostly upper level education courses and had a somewhat different demographics makeup from the university's mean. To achieve a sample that was similar to the population of the university, it may be preferable to have a more diverse group, and a larger group. It would have been preferred to use additional analytical procedures, but since the sample size was somewhat small it limited the ability to do so.

Additionally, the timing was difficult for students participating because it was near the end of the Fall semester when students were engaged in studying for finals and writing papers. The sample of students were likely burned out from the semester and it was a challenge to compel them to engage in additional testing that was unrelated to their studies and grades.

Also, it is worth noting that the high scores on both groups' pretests may indicate that the content and surveys may have been too easy for this group, potentially leading to a loss of interest. The content and survey instruments had originally been developed for First Year Seminar, therefore a group of upper-level students likely needed different content. Lastly, having both groups in the same room may have been a limiting factor because when the participants using the digital modules with built-in stops and clicking saw the control group finishing early, they may have become more frustrated and clicked through carelessly.

Possible Future Research

There are several avenues for potential future research that could enhance understanding of instructional effectiveness in online learning environments. One area of focus could be on expanding the sample size and diversity of participants to better represent the broader student population. Utilizing a more diverse and representative sample from other colleges and disciplines would allow for more robust conclusions about the generalizability of the findings. Additionally, future studies could explore alternative analytical procedures to provide deeper insights into the observed phenomena and compare variables such as age, ethnicity, highest educational attainment of parent, and test scores, perhaps in a Principle Component Analysis. Recruiting students near the beginning of the year could mitigate the issue of burnout and increase engagement potential. Furthermore, there is a need to calibrate the content of the interventions to the level of the participants and revise survey tools to better suit the academic needs of the population. If the content is brought up to the academic needs of the learners, the issue of frustration over mandatory stops to finish the content could potentially be mitigated. Overall, addressing these needs in future research could contribute to a more comprehensive understanding of this area in instructional practices.

In conclusion, this study investigated the effectiveness of traditional slideshow instruction versus interactive instructional technology in improving financial literacy among undergraduate college students at a Hispanic-Serving Institution. While no statistically significant change was found in learning between groups post intervention, the study still provides valuable insights into instructional practices for asynchronous learning environments and addresses a gap in the literature on financial education research using instructional technology. The findings suggest that both instructional methods may be equally effective in enhancing financial literacy outcomes; however, acknowledging potential limitations in the intervention design and sample is important

as that may have led to biased results. Moving forward, educators and researchers can use these insights to inform their instructional practices and curricular development, ensuring the selection of appropriate methods, to the benefit of their student learning. As Yeung et al. notes (2021), “In order to make the most of the resources invested in educational technology to increase student achievement, technology must be carefully considered according to the learning principles that it affords” (p. 1623). Everything in the classroom, online or face-to-face, must be applied with the most careful consideration of what methods will most benefit learners.

As Ai-Lim Lee et al. (2010) noted, a framework of instructional technology emphasizes the significance and motivation in the learning process. “In this framework, VR features influence learning outcomes indirectly through the mediation of usability and psychological factors of learning experience such as presence, motivation, cognitive benefits, control and active learning, and reflective thinking” (Ai-Lim Lee et al., 2010). Considering the insights that integrative instructional technology promotes student motivation, future research and classwork should incorporate technology into student learning.

References

- Ai-Lim Lee, E., Wong, K. W., & Fung, C. C. (2010). How does desktop virtual reality enhance learning outcomes? A structural equation modeling approach. *Computers & Education*, 55(4), 1424–1442. <https://doi.org/10.1016/j.compedu.2010.06.006>
- Bloom, B. S. (1987). A response to Slavin's mastery learning reconsidered. *Review of Educational Research*, 57(4), 507–508. <https://doi.org/10.3102/00346543057004507>
- Brush T., Bannon S. (1998). Characteristics of technology leaders: A survey of school administration in the United States. *International Studies in Educational Administration*, 26, 47–56.
- Bush, M. D. (2012). Educational technology as a means for connecting improved learning outcomes and scholarly communications. *Educational Technology*, 52(6), 26–30. <https://www.jstor.org/stable/44430196>
- Chen, S.-W., Yang, C.-H., Huang, K.-S., & Fu, S.-L. (2019). Digital games for learning energy conservation: A study of impacts on motivation, attention, and learning outcomes. *Innovations in Education and Teaching International*, 56(1), 66–76. <https://doi.org/10.1080/14703297.2017.1348960>
- Cohen, J. A. (2021). A fit for purpose pedagogy: online learning designing and teaching. *Development and Learning in Organizations*, 35(4), 15-17. <https://doi.org/10.1108/DLO-08-2020-0174>
- Campbell, D. T., & Cook, T. D. (1979). *Quasi-experimentation*. Chicago, IL: Rand Mc-Nally, 1(1), 1-384.
- Delgado, A., Wardlow, L., McKnight, K., & O'Malley, K. (2015). Educational technology: A review of the integration, resources, and effectiveness of technology in K-12 classrooms.

- Journal of Information Technology Education: Research*, 14, 397–416.
<https://www.jite.informingscience.org/documents/Vol14/JITEv14ResearchP397-416Delgado1829.pdf>
- Devlin, M., & McKay, J. (2016). Teaching students using technology: Facilitating success for students from low socioeconomic status backgrounds in Australian universities. *Australasian Journal of Educational Technology*, 32(1).
<https://doi.org/10.14742/ajet.2053>
- Edelberg, T. (2020). Emphasizing technology over instruction: Adapting a 20-year-old survey to examine the climate of k–12 instructional technology leadership in public school districts. *Journal of School Leadership*, 30(3), 257–274.
<https://doi.org/10.1177/1052684619884783>
- Jones, T. H., & Paolucci, R. (1999). Research framework and dimensions for evaluating the effectiveness of educational technology systems on learning outcomes. *Journal of Research on Computing in Education*, 32(1), 17.
<https://doi.org/10.1080/08886504.1999.10782266>
- Kolb, A., & Kolb, D. (2018). Eight important things to know about the experiential learning cycle. *Australian Educational Leader*, 40(3), 8–14.
<http://ezproxy.tamusa.idm.oclc.org/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=132913378&site=ehost-live&scope=site>
- Latino, C. A., Stegmann, G., Radunzel, J., Way, J. D., Sanchez, E., & Casillas, A. (2020). Reducing gaps in first-year outcomes between Hispanic first-generation college students and their peers: The role of accelerated learning and financial Aid. *Journal of College*

Student Retention: Research, Theory & Practice, 22(3), 441–463.

<https://doi.org/10.1177/1521025118768055>

Lusardi, A., & Mitchell, O. S. (2014). The Economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44.

<https://doi.org/10.1257/jel.52.1.5>

McDaniel, A., Montalto, C.P., Regan, E.P., & Rehr, T.I. (2020). Study on collegiate financial wellness 2020 key findings. Center for the Study of Student Life.

<https://cssl.osu.edu/posts/632320bc-704d-4eef-8bcb-87c83019f2e9/documents/2020-scfw-key-findings-report-combined-accessible.pdf>

Menberu, A. W. (2024). Technology-mediated financial education in developing countries: a systematic literature review. *Cogent Business & Management*, 11(1), 2294879.

<https://doi.org/10.1080/23311975.2023.2294879>

Mshayisa, V. V. (2020). Students' perceptions of Plickers and crossword puzzles in undergraduate studies. *Journal of Food Science Education*, 19(2), 49–58.

<https://doi.org/10.1111/1541-4329.12179>

Pi, Z., & Hong, J. (2016). Learning process and learning outcomes of video podcasts including the instructor and PPT slides: a Chinese case. *Innovations in Education & Teaching International*, 53(2), 135–144. <https://doi.org/10.1080/14703297.2015.1060133>

Pridmore, J. L., Bradley, R. V., & Mehta, N. (2010). Methods of instruction and learning outcomes: A theoretical analysis of two approaches in an introductory information technology course. *Decision Sciences Journal of Innovative Education*, 8(2), 289–311.

<https://doi.org/10.1111/j.1540-4609.2010.00258.x>

- Shvarts, A., & Bakker, A. (2019). The early history of the scaffolding metaphor: Bernstein, Luria, Vygotsky, and before. *Mind, Culture, and Activity*, 26(1), 4–23.
<https://doi.org/10.1080/10749039.2019.1574306>
- Stanley, T., & Marsden, S. (2012). Problem-based learning: Does accounting education need it? *Journal of Accounting Education*, 30(3), 267–289.
<https://doi.org/10.1016/j.jaccedu.2012.08.005>
- Starcic, A. I. (2010). Educational technology for the inclusive classroom. *Turkish Online Journal of Educational Technology - TOJET*, 9(3), 26–37. <https://eric.ed.gov/?id=EJ898012>
- Stevens, J. P. (2012). *Applied multivariate statistics for the social sciences* (0 ed.). Routledge.
<https://doi.org/10.4324/9780203843130>
- Student Demographics - Texas A&M University-San Antonio*. (n.d.). Texas A&M University-San Antonio Student Demographics. Retrieved March 13, 2024, from <https://www.tamusa.edu/office-information-research/student-demographics.html>
- Texas A&M University. (2024). *Persistence – Rates*. Analytics.
<https://analytics.tamus.edu/persistence-rates/>
- U.S. Department of Education. (2022). *Undergraduate Graduation Rates*. National Center for Education Statistics (NCES) Home Page, a part of the U.S. Department of Education.
<https://nces.ed.gov/fastfacts/display.asp?id=40>
- Von Glasersfeld, E. (1989). Cognition, construction of knowledge, and teaching. *Synthese*, 80(1), 121–140. <https://www.jstor.org/stable/20116670>
- Whitney, S., E., Benson, G., & Wesaw, A. (2018). *First-generation student success: A landscape analysis of programs and services at four-year institutions* (pp. 1–84). Student Affairs

Administrators in Higher Education. <https://firstgen.naspa.org/files/dmfile/NASPA-First-generation-Student-Success-FULL-REPORT.pdf>

Yeung, K. L., Carpenter, S. K., & Corral, D. (2021). A comprehensive review of educational technology on objective learning outcomes in academic contexts. *Educational Psychology Review*, 33(4), 1583–1630. <https://doi.org/10.1007/s10648-020-09592-4>

Appendix A Consent Form

Texas A&M University-San Antonio

College of Education & Human Development

CONSENT FORM



TITLE OF STUDY: Learning Outcomes and Educational Technology in Financial Literacy

PROTOCOL NUMBER:

DEAR STUDY PARTICIPANT:

You are invited to participate in a research study of student learning.

You were selected as a possible participant because you are a student at Texas A&M University-San Antonio.

We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: Eliaz McCullen, Department of Curriculum and Instruction.

Purpose of Study

To explain differences between learning after exposure to regular slides versus other types of educational technology. We want to learn what types of asynchronous instruction is best, especially for financial education.

Background Information The purpose of this study is: to explore whether educational technology has an impact on learning outcomes.

Procedures:

If you agree to participate in this study, we will ask you to do the following things:

Watch a slide show, then answer a short quiz.

Including demographics questions, taking care to put thought into open-ended questions. Please feel free to move to a more private area before proceeding to this questionnaire for your own privacy.

Risks and Benefits of participating in the Study

The study includes the following risks:

Mental stress of quiz-taking. If at any time you feel distressed, you are free to withdraw from the survey and can contact the Student Counseling Center at 210-784-1331 or on campus in the back of Modular C.

THIS PROJECT HAS BEEN REVIEWED BY THE
TEXAS A&M UNIVERSITY-SAN ANTONIO INSTITUTIONAL REVIEW BOARD
FOR THE PROTECTION OF HUMAN SUBJECTS.
Phone: (210) 784-2317, Graduate Studies and Office of Research

1 of 4

Texas A&M University-San Antonio
College of Education & Human Development
CONSENT FORM



The benefits to participation are:

Potential improvement of financial understanding after watching videos.

Reflecting on persona financial wellness may bring personal benefit.

If changes to the potential or actual risks or benefits to you occur, you will receive a report of significant new findings and/or be asked to re-consent.

Confidentiality:

The records of this study will be kept private. Reports resulting from this study will not include any information that will make it possible to identify you as a participant. Research records will be stored securely and only researchers will have access to the records.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Texas A&M University-San Antonio. If you decide to participate, you are free to not answer any question or to withdraw at any time without affecting those relationships.

Contacts and Questions:

You may ask any questions you have now. If you have questions later, **you are encouraged** to contact the co-Principal Investigator at emccu01@jaguar.tamu.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the IRB Chair at irb@tamusa.edu, or by phone (210) 784-2317.

You will be given a copy of this information to keep for your records.

THIS PROJECT HAS BEEN REVIEWED BY THE
TEXAS A&M UNIVERSITY-SAN ANTONIO INSTITUTIONAL REVIEW BOARD
FOR THE PROTECTION OF HUMAN SUBJECTS.
Phone: (210) 784-2317, Graduate Studies and Office of Research

Texas A&M University-San Antonio
College of Education & Human Development
CONSENT FORM



Statement of Consent:

The signature below affirms that you are at least 18 years old, have received a copy of this consent form, have understood the above information, and agree to voluntarily participate in this research.

Signature: _____ Date: _____

Signature of parent or guardian: _____ Date: _____
(If minors are involved)

Signature of Investigator: _____ Date: _____

(PI should only include signature lines of participants that are signing the form to consent. You may not need all the lines and are not required to keep all of them unless you are collecting signatures for each line.)

THIS PROJECT HAS BEEN REVIEWED BY THE
TEXAS A&M UNIVERSITY-SAN ANTONIO INSTITUTIONAL REVIEW BOARD
FOR THE PROTECTION OF HUMAN SUBJECTS.
Phone: (210) 784-2317, Graduate Studies and Office of Research

Appendix B Pretest

Instrument one: Pretest

Demographics:

1. What is your age?

18-24

25-29

30-34

35-39

40-44

45-50

51+

What is your ethnic background? (please check all that apply)

White/Caucasian

Asian - Eastern

Asian - Indian

Hispanic

Black

Native American

Other (with a blank field for respondents to enter their racial identity)

Prefer not to answer

What is the highest level of education your mother completed?

- a. Less than high school
- b. High school diploma
- c. 2 year degree (e.g. Associate's degree)
- d. 4 year degree (e.g., Bachelor's degree)
- e. Master's degree
- f. Professional degree (e.g. M.D., J.D., D.D.S. etc)
- g. PhD or other doctorate

What is the highest level of education your father completed?

- a. Less than high school
- b. High school diploma
- c. 2 year degree (e.g. Associates degree)
- d. 4 year degree (e.g., Bachelor's degree)
- e. Master's degree
- f. Professional degree (e.g. M.D., J.D., D.D.S. etc)
- g. PhD or other doctorate

What is your annual combined household income?

- a. \$0-\$30,000
- b. \$31,000-\$60,000
- c. \$61,000-\$90,000

- d. \$91,000-\$120,000
- e. \$120,000+

How many people are in your household?

Kimberly pays her entire balance every month. She;

- Never owes interest on her purchases
- Never has a principal of \$0
- Likely has bad credit
- Pays more than 100% in interest on her purchases

The smallest amount of a credit card bill that a credit card holder must pay each billing cycle; usually between 3-10%

- Maximum Payment
- Minimum Payment
- Fixed Payment
- APR Payment

When you purchase something with a credit card, you

- Automatically improve your credit score
- Buy it now and promise to pay later
- Pay for it now but receive it later
- Decrease your debt

What is a minimum monthly payment?

- The minimum annual percentage rate on credit card
- The minimum amount on your credit card bill you need to pay each month
- The minimum you must purchase with your credit card each month
- The minimum interest you rack up each month

Interest rate charged for balances on a credit card

- APR
- Principal
- Collateral
- Fees

Appendix C Posttest

Instrument two: Posttest

Kimberly pays her entire balance every month. She;

- Never owes interest on her purchases
- Never has a principal of \$0
- Likely has bad credit
- Pays more than 100% in interest on her purchases

The smallest amount of a credit card bill that a credit card holder must pay each billing cycle; usually between 3-10%

- Maximum Payment
- Minimum Payment
- Fixed Payment
- APR Payment

When you purchase something with a credit card, you

- Automatically improve your credit score
- Buy it now and promise to pay later
- Pay for it now but receive it later
- Decrease your debt

What is a minimum monthly payment?

- The minimum annual percentage rate on credit card
- The minimum amount on your credit card bill you need to pay each month
- The minimum you must purchase with your credit card each month
- The minimum interest you rack up each month

Interest rate charged for balances on a credit card

- APR
- Principal
- Collateral
- Fees

Appendix D IRB Approval



Office of Research and Health Sciences

Central Academic Building, Suite 411
One University Way, San Antonio, Texas 78224
Phone: (210) 784-2317 | irb@tamusa.edu

To: Dr. Carolyn Webb

From: Dr. Dawn Weatherford

Date: June 6, 2023

Re: Exempt Determination: Protocol 2023-34

The IRB protocol application submitted by you titled, “**Learning Outcomes and Educational Technology in Financial Literacy**” has been reviewed. This application falls under the Exempt Review, Category 2, as listed under the Code of Federal Regulations, title 45 part 46. Any changes to the Exempt research must be reviewed by the IRB in advance of implementation.

The determination for this Exempt research expires June 5, 2028.

Before the determination expires, the research will be due for renewal if it is still ongoing. Please notify the IRB Office by May 5, 2028, to avoid a pause in data collection.

Upon completion of the research, a completion report must be submitted to irb@tamusa.edu.

A handwritten signature in black ink, appearing to read "Dawn Weatherford".

Dawn Weatherford, PhD
IRB Chair

PLEASE NOTE: It is the responsibility of the primary researcher to amend their IRB protocol to add any future individuals who will be handling research data before they join the study. These individuals must be added to the approved protocol via a protocol amendment and must complete the CITI online course before they may handle research data or interact with human research subjects. If new individuals are not added to the protocol and trained PRIOR TO ANY HUMAN SUBJECTS CONTACT, the IRB may revoke the primary researcher’s approval to conduct the research project.

IRB OFFICE USE ONLY

Last Name

_____ IRB

Log# _____

VITA

Eliasz J. McCullen

314-973-9567 • Eliasz.McCullen@gmail.com

KEY QUALIFICATIONS & OUTCOMES

- Values-driven Curriculum and Instruction Masters student with 8+ years of project management experience, 5 years of experience developing and designing experiential curriculum with stakeholders
- In eight months, managed, developed and implemented a pilot Financial Literacy common core standards curriculum program for an international company while supervising a team of other creatives including assessment and differentiation for **500** high school and first year college students with the intention of national expansion
- Utilized Kanban project management technique while supervising a graduate assistant resulting in a **100% increase** in student engagement
- After conducting a needs assessment utilized **Articulate** to develop a web-based training program ensuring content would be engaging for key demographics
- Dynamic in designing, instructing, and evaluating adult and youth curriculum based on needs assessment, key stakeholder input, and application of adult learning theory and pedagogy
- Effective in launching of curriculum into learning management system (LMS) including TalentLMS, Thinkific and other systems, using authoring tools such as Rise, Adobe suite, and Camtasia for various types of curricula, including Learning and Development
- Experienced in working with SMEs and other stakeholders, 4+ years of experience in ADDIE, curriculum development, delivery, and assessment

EDUCATION & CERTIFICATIONS

Master of Arts, Education, Curriculum and Instruction, Texas A&M University- San Antonio	Expected May 2024
Bachelor of Arts, Psychology, University of Missouri – St. Louis	2006
National Society for Experiential Education (NSEE) – Experiential Education Academy (EEA)	2021
Neighborworks Certification in Financial Capability	2019
Web Design Professional , University of Texas at San Antonio	Expected April 2024
Adobe Certified Professional in Visual Design , Texas Tech University Office of Continuing and Professional Education	Expected May 2024

EXPERIENCE

Financial Proficiency Program Manager, Hispanic Association of Colleges and Universities April 2023-Present

- Created content as subject matter expert for an online curriculum aligned with TEKS and Common Core national standards
- Authored materials for financial literacy in multiple tools, including Articulate and Canva, entered into a Learning Management System (LMS)
- Supervised a team of creatives to create assets and direct content to authoring tools and LMS
- Oversaw the design of 3d simulations and managed contracted employees
- Conducted pre and post-test data analysis in Qualtrics

Financial Education Coordinator, Texas A&M University- San Antonio September 2021- April 2023
Mays Center for Experiential Learning and Community Engagement

Due to excellent performance, was promoted in Fall of 2021 to take on more Financial Literacy curriculum and instruction, as well as development of directly supervised Financial Literacy Fellows and Graduate Assistants.

- Authored training and development materials for, and onboarded 20 new employees into department
- Managed stakeholder relationship with new Amerigroup partnership, including \$30,000 grant for Graduate Assistant, additional presentations for client base, and reporting metrics for stakeholder group
- Implemented a reflection activity as part of the Financially Relevant Educational Extravaganza (FREE) during Financial Literacy Week, resulting in a 100% increase in event attendance and a notable 21% increase in student satisfaction levels.
- Led team of 8 graduate and undergraduate students in creating and delivering engaging presentations that led to a 56% increase financial competency scores among freshmen

Coordinator for Programs and Partnerships, Texas A&M University- San Antonio

July 2019- 2021

Mays Center for Experiential Learning and Community Engagement

- Created a financial literacy program aimed at retention for students in danger of NSAP in Spring of 2023 with increases in SLOs of an average of 17%
- Authored training and development materials for, and onboarded 20 new employees into department
- Created and established Financial Literacy Fellows- provides up to \$34,000 in scholarship and stipend money to 7 students per year, oversee 200 service hours per student, educating 1300+ students in AY21-22
- Recruited, hired, trained 2 graduate interns to triple delivery impact; Outreach in first semester of program impacted 470 students who gained competency in 6 components of financial literacy

Sustainability Operations Coordinator, Texas A&M- Kingsville

February 2014- October 2018

- Formulated and implemented the very popular ReCycle Bikes bicycle rental program which impacted 1300+ students in the 3.5 years running since January 2015
- Oversaw peer-to-peer educational Eco-Reps; formulated and implemented peer-to-peer mentoring through ReCycle Bikes program
- Developed and implemented social and environmental sustainability outreach to students in the form of talks and presentations

KEY PROJECTS & OUTCOMES

- Developed, designed, and facilitated training materials for Employee Development Day on behalf of Rainbow P.A.W.S. for an introduction to Safe Space Training
- Led life skills, socio-emotional learning, and leadership programming for at-risk youth (ages 8-14) in the Corpus Christi area with outdoor recreation setting, impacting 300+ students in section 8 housing with at least 2 weeks of curriculum during time with non-profit
- Assisted with decision-making in non-profit program implementation
- Worked with key stakeholders as both instructional designer and subject matter expert to develop, design, and facilitate Workforce Development courses on Credit and Financial Leadership
- Developed course material for TU CASA students after working with stakeholders, presented material and activity for students and was invited to return multiple times
- Supervisor and coordinator for 2 years for Community-Based Work Study, C2C Engaged Program, which provided \$4000/year, hands-on work experience for 8-9 students per semester with community partners, provided 16 mentoring sessions per student yearly
- Expanded on outreach through collaboration with partners in GEAR UP Texas and local School Districts

TRAININGS & TECHNOLOGY

Proficient in: PowerPoint, Microsoft Suite, Google Suite, Articulate Suite, Canva, Talent LMS, Blackboard, Lectora

Familiar with: iMovie, Camtasia, Vyond, Adobe Suite, JIRA, GitHub, Photoshop

Familiar with Languages: Python, HTML

LEADERSHIP & COMMITTEES

President's Commission on Equity- Executive Member	July 2021- 2023
President's Commission on Equity- Cultural Understandings and Knowledge - Chair	July 2021-2023
Rainbow PAWS (Pride at Work and School) Co-Chair 2019-2021	Active Member 2019-2023
Coalition (student group) - Staff Advisor	November 2021-2023
TIAA Inclusion & Diversity Council-Temporary Member	September 2021- April 2022

SPEAKING ENGAGEMENTS & PRESENTATIONS

Texas A&M University- San Antonio, Employee Development Day May 2022

- Developed and facilitated an introduction on the university proprietary Safe Space training using my own slides and research, delivered face-to-face discussion, enrichment activity, and resources.