THE EFFECTS OF USING AN ONLINE CREDIT FOCUSED PERSONAL FINANCE
MODULE ON STUDENTS’ UNDERSTANDING OF CREDIT

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Abstract

This study examined the effect of a credit focused personal finance module on high school students’ understanding of the positive and negative effects of credit as measured by a pre and post-test comparison. This study involved a collaborative effort between a teacher educator, an inservice teacher at Greene Central High School, and a preservice teacher to develop a credit focused personal finance module in order to increase high school students’ understanding of the positive and negative effects of credit. The research question of this study is: What effect does a credit focused personal finance module have on high school students’ understanding of the positive and negative effects of credit as measured by a pre and post-test comparison? At the conclusion of the study, students and the teacher completed surveys about the credit module experience. The results show that students in the experimental group scored 13 points higher on average on the final assessment than students in the control group, though students in the control group experienced the largest growth.

*Keywords:* economics education, personal financial literacy, online learning module (OLM)

**Research Question**

What effect does a credit focused personal finance module have on high school students’ understanding of the positive and negative effects of credit as measured by a pre and post-test comparison?
The Effects of Using an Online Credit Focused Personal Finance Module on Students’ Understanding of Credit

The Partnership for 21st Century Skills (P21) was founded in 2002 as a force uniting the business community, education leaders, and policymakers to make 21st century readiness the center of U.S. K-12 education and to launch a national conversation on the importance of 21st century skills for all students (Partnership for 21st Century Skills, n.d.). P21 included financial, economic, business, and entrepreneurial literacy as part of their framework for 21st century learning. Additionally, P21 identified three main goals of this multifaceted literacy as knowing how to make appropriate personal economic choices, understanding the role of economy in society, and using entrepreneurial skills to enhance workplace productivity and career options (Partnership for 21st Century Skills, n.d.).

P21 included financial literacy goals because research revealed a gap in personal finance knowledge of young adults from the United States and other countries. According to the study, the Program for International Student Assessment (PISA) conducted by the Organization for Economic Cooperation and Development in 18 different countries, young people in the United States, the world’s largest economy, know less about money than their peers in eight other countries. Knowing less about money means knowing less about how to make wise financial decisions. Furthermore, teenagers in the Shanghai region outscored everyone else despite living in a nominally communist country (Schuetze, 2014). The financial literacy section of PISA tested approximately 29,000 15-year-olds. There were five levels of difficulty in the test, which was taken by students in 2012 in 18 countries, whereas students in 65 countries were assessed in the main sections on reading, mathematics, and science. The students took a paper-based test that
lasted 2 hours. The tests were a mixture of open-ended and multiple-choice questions that were organized in groups based on a passage setting out a real-life situation. A total of about 390 minutes of test items were covered and students took different combinations of different tests (OECD, n.d.). Compared with other skills tested and tallied by the study, like math, reading, and problem solving, the study suggests money management is not a skill that most young people have developed. While education experts appear to agree that money management is an increasingly necessarily skill, the PISA findings manifest that not enough has been done to teach it. The present study will attempt to identify whether new teaching strategies and tools, particularly online learning modules (OLMs), have positive effects on students’ learning of personal finance topics.

**Literature Review**

**Introduction**

In determining studies to use in this literature review, I chose to include studies showing a dearth of a uniform requirement of a personal financial literacy (PFL) and/or economics course for graduation across the 50 states. Furthermore, I wanted to include studies that assess how well other countries are teaching economics and PFL. In addition, I chose to include studies describing the lack of content knowledge in economics and PFL among many k-12 educators in the United States. Equally important, I included some studies evaluating the effectiveness of online learning modules (OLMs), simulations, and games. The main themes I chose to organize the literature review around were: the minute number of states that require students to take an economics or personal finance course in high school as a graduation requirement, the use of OLMs, simulations, and games in the classroom, a general lack of content knowledge in
economics and personal finance among many elementary and secondary social studies educators, and strategies other countries use in teaching economics and PFL. These themes emerged because I wanted to explore possible problems with the economics and PFL curriculum and problems with instruction. Since I chose an online learning module as the treatment in this study, it was imperative to research the effectiveness of online learning modules in order to explore the best practices of OLMs.

The impact of the Great Recession on American society is still felt today, yet there has been little discussion about the influence of economic and PFL education on the financial behavior of most American adults. Much of the education reform debate has focused on the new Common Core standards and STEM fields; however, not enough dialogue has been given to economic and PFL education. Lusardi and Mitchell (2013) provided support for economic and personal financial education’s importance by arguing that the 21st century global economy requires more responsibility from individuals for making sound financial decisions, and that many American adults have insufficient knowledge to make perspicacious financial decisions. Since teachers teach wise financial decision-making at school, elementary, middle, and secondary-level teachers have a pivotal role in teaching students principles of economics and personal finance. In a report by Walstad and Buckles (2008) analyzing the 2006 National Assessment of Educational Progress in Economics, they argued that personal finance is not the focus in most secondary economic courses. They discussed that most secondary teachers usually teach personal finance and economics quickly at the end of the school year or semester. As cited in “Civic and economic education: The nexus” (2003), Margaret Branson, in quoting Dahl, described the importance of economics and personal finance education:
Only in a society in which relatively few citizens live in real poverty could there be a situation in which the mass of the population could intelligently participate in politics and develop the self-restraint necessary to avoid succumbing to the appeals of demagogues. A society divided between a larger, impoverished, ill-educated mass and a small favored elite results either in oligarchy or in tyranny. (p. 67)

Thus, it is imperative that social studies educators devise effective instructional strategies so students not only retain information about economics and personal finance, but that they can apply new concepts and skills to prepare students to become contributing citizens. According to a 2009 Sallie Mae survey, (as cited in Golden, 2010) only 17 percent of college students pay their balance in full each month, and the average card balance for students rose to $3,173. Furthermore, a 2010 survey conducted by the National Endowment for Financial Education found that 90% of American adults have financial concerns and 13% have concerns about credit card debt (NEFE, 2010).

Research findings analyzing the 2006 National Assessment of Educational Progress in Economics revealed a positive and significant relationship with test scores and the use of a game or simulation, as either part of a class or extracurricular activity (Walstad & Buckles, 2008). One explanation is that these hands-on activities reinforced economic and personal finance concepts students learn in general economics courses or mixed economics and government courses. Research conducted by Lamb and Annetta (2013) shows that the use of online simulations in a high school chemistry class promotes increased understanding of chemistry topics through interactive and open-ended questioning. Additionally, Mcnaughton, Wallen, Shu Kie, and Crawford (1967) suggest that students’ development of cognitive skills in social studies can be enhanced with organized teaching modules.
Challenges to PFL and Economic Education

The Council for Economic Education (CEE) conducts a survey every two years into the state of economic and financial education in the United States. Although the 2014 Survey of the States shows significant progress over the past fifteen years since the survey was first conducted, there are still many improvements to be made. Fortunately, all fifty states and the District of Columbia include economics in the K-12 standards for the first time as of 2014; however, there has been no improvement in the number of states requiring students to take an economics course in high school as a graduation requirement. Since 2011, only twenty-two states require students to take an economics course in high school as a graduation requirement. Four more states now require students to take a personal finance course (or require that personal finance be included in an economics or civics course) as a high school graduation requirement. Additionally, only six states require the testing of personal finance, which is only one more than in 2011 (Council for Economic Education, 2014).

In addition to the dearth of uniform graduation requirements for personal finance and economics across the country, there is also a general lack of content knowledge in economics and personal finance among many elementary and secondary social studies educators (Lucey, Hatch, & Giannangelo, 2014). Educators of all grade levels should have the pedagogical and content knowledge to teach these concepts and skills to their students. Although it is beneficial to students of economics and personal finance when their educators have taken related courses in college (Bosshardt & Watts, 1994; France, Summary, & Vasegh-Daneshvary, 1989), research studies (McKenzie, 1971; McKinney, McKinney, Larkins, Gilmore, & Ford, 1990; Lucey, Hatch, & Giannangelo, 2010; Sanchez, 2010) revealed that elementary and middle-level educators do not have strong knowledge of economics and personal finance. Efforts to
implement a holistic financial education curriculum require a teaching force that both comprehends the content and educates using best instructional practices.

Students are learning crucial personal finance and economics skills too late to change their financial behavior. A review of the literature suggests that poor curriculum design and instructional choices have limited younger students’ learning of personal finance and economics for the past thirty years. Schug and Birkey (1985) conducted interviews of seventy randomly selected, urban elementary school students and found that economic understanding is imparted through personal experience; furthermore, they opined that formal economic instruction should start at the “upper primary or the intermediate grades” (p. 41). In spite of literature (Laney & Schug, 1998) purporting that such learning can occur in the elementary and intermediate grades, the majority of classrooms in early grades do not adequately prepare children for managing their finances. Martin and Oliva (2001) assert the need to for students to develop financial literacy in early childhood. Mundrake and Brown (2001) strongly suggest that students should explore career paths and make spending decisions during their first years in school. If elementary and intermediate educators inadequately employ appropriate personal finance and economics instruction, children will only rely on their domestic experiences to influence their learning in secondary classrooms. It is imperative that social studies educators recognize that lifelong understanding and adherence to wise financial practices begin at an early age.

**Improving PFL and Economic Education**

One reason why Shanghai, Australia, New Zealand, and Korea are so successful at teaching personal finance and economics skills is they have education systems with clear and ambitious standards, so that every student knows what is required to be successful. Therefore, it
would be beneficial if all fifty states required high school students to take a course in personal finance and economics as a graduation requirement.

In addition to requiring more from students, the literature suggests that school systems must also raise their expectations of social studies teachers. The literature advises that it is beneficial to students of economics and personal finance when their educators have taken related courses in college (Bosshardt & Watts, 1994; France, Summary, & Vasegh-Daneshvary, 1989). Given the general lack of content knowledge in economics and personal finance among many secondary social studies educators (Lucey, Hatch, & Giannangelo, 2014), it would be wise if school systems and state policymakers required all elementary and secondary social studies pre-service teachers to take at least six hours of economics courses. The literature recommends that school principals and administrators should create and implement professional development that arms educators with effective instructional strategies and assessment for teaching personal finance and economics.

Lucey (2007) argued that financial education is failing to meet the needs of all learners. Lucey recommended that social studies educators create art-based curricula to allow students to explore moral issues in personal finance thereby developing an understanding of human accountability for financial decisions.

**Conclusions**

Although the effect of an online learning module on students has begun to be developed, more research is needed to synthesize a concrete determination on high school students using an online credit module. The research reviewed shows both the challenges and the strengths of economic and PFL education in the United States and around the world. The results of the studies and the reviews of experiments reveal that research will never be complete on online
learning modules. This literature review is able to illustrate the expansive amount of data collected through studies and experiments, and it also explains the differences between our knowledge of economics and PFL in the past and today. The disparities in the findings and the modification of methodology over time suggest that more research is needed, thereby further justifying the purpose of this proposed action research study.

Methodology

Population and Sample

The population of the present study was high school social studies students. The purposive sample in the present study included (grade level) civics and economics students in a rural high school in North Carolina. The high school, serving grades 9-12, has a current enrollment of 784 students consisting of 37 percent Caucasian, 50 percent African American, and 13 percent Hispanic. A purposive sample was chosen because randomization was not possible due to the fact that students are enrolled in established course sections.

This study was performed within two classes of high school students enrolled in a standard civics and economics class. The control class was made up of 19 students, while the experimental class totaled 22 students. The majority of students in both classes were sophomores (80 percent) with a decreasing percentage being freshmen (15 percent) and juniors (five percent). Within the control class, 47 percent of the students were female while 53 percent are male. The experimental class was made up of 55 percent females and 45 percent males. Additionally, the control class had a racial makeup as follows: eight African American students, 10 Caucasian students, and one Hispanic student. The experimental class had a racial makeup of 11 African American students, four Caucasian students, and seven Hispanic students. Both classes in this
study were standard classes, meaning classes that simply follow the standard course of study without designed increases for rigor to designate Honors or Advanced Placement credit.

**Description of Treatment**

An online credit module was implemented within the treatment classroom for two ninety-minute lessons. First, the researcher introduced the online credit module and explained the purpose of the study, reminded students of their rights as participants in the study, and delivered instructions for beginning the module. The teacher instructed students in the treatment group to open the link to an interactive credit module on Weebly. Students in the treatment class used iPads provided by the school to access the credit module and complete the assessments. In order to assess how much prior knowledge of the positive and negative effects of credit students have, students completed a pre-test using Socrative, a password-protected online assessment tool, consisting of a mix of 16 short answer and multiple choice questions. Students first read the first page of the module titled “Overview of Credit,” and then they watched four videos and viewed three graphics describing: a credit score; what makes a good credit score and why a good credit score matters; the difference between a credit report and a credit score; and tips about how to build credit from scratch. These videos lasted 15:37 and 20 minutes was planned for the students to read the information, watch the four videos, view the three graphics, and take notes using an accompanying handout created by the researcher on the first page. Students then moved on to the second page of the module about the positive effects of credit, and they read and took notes on the information. Next, students read and took notes on the negative effects of credit on the third page of the module. The teacher instructed students to click on the button “Credit Card Payment Calculator” and students practiced determining the minimum monthly payment required to pay off a credit card bill within various periods of time. Students read and completed the
corresponding section of the handout on tips for avoiding credit card debt on the fourth page of the module. Students read, but were not required to write down, definitions in the glossary of twelve credit terms on the fifth page of the module. With 15 minutes left in class, the teacher instructed the students to complete the post-test on Socrative consisting of 16 multiple choice and short answer questions. Finally, the teacher debriefed the credit module for the remainder of the class period by giving the following as a prompt: What did you learn are some positive effects of credit and what are some negative effects of credit? The teacher also asked students in both the treatment and control groups: What are some tips for avoiding credit card debt? To provide additional feedback to the researcher, students in the experimental group completed a three question reflection, which asked about their thoughts on the credit module.

For the control group, the teacher introduced the lesson with the following prompt: What defines credit? Students then took the pre-test for fifteen minutes. The teacher delivered the exact information from the credit module via a mini-lecture and a top-down map. The students and teacher filled out the top-down map together. The teacher explained each point on the top-down map while the students took notes on their own copies. After the teacher taught her own lesson, the students in the control group completed the post-test. The teacher debriefed the credit module for the remainder of the class period by giving the following as a prompt: What did you learn are some positive effects of credit and what are some negative effects of credit? The teacher also asked the students in the control group: What are some tips for avoiding credit card debt?

Data Collection

The present study utilized a non-equivalent control group pretest-posttest design. The study period lasted two ninety-minute lessons during which the lesson on the positive and negative effects of credit was taught. The treatment class utilized the online credit module to
learn the new material, whereas the control class relied on a top-down map and a mini-lecture. The control group still took the pre-test and post-test. Students in both the control group and the experimental group were only allowed to use their notes to complete the pre-test and post-test.

The experimental group had the online credit module as a treatment intervention, and the experimental group took a pre-test and a post-test to assess those students’ prior knowledge and learning of the material after the implementation of the module. The teacher was given the module in advance and used it to adjust her own lesson plan for the control class.

Some limits of this study are linked with the consideration of test scores as an accurate means to determine overall student understanding. In an attempt to counteract the restrictions associated with assessment, additional data collection methods were taken as part of this study. Data was collected in the form of the following items found in the Appendices: pre and post-test scores collected through Socrative; student surveys collected through the Credit Module Student Survey; and a teacher reflection collected through the Credit Module Teacher Survey following the study. Assessments were implemented at the beginning and after the completion of the credit module for the treatment class and regular instruction for the control class. A brief student survey collected through SurveyMonkey was conducted at the end of the lesson after the teacher finished debriefing students in the experimental class. The researcher observed the implementation of the credit module in the experimental group by periodically walking around the classroom observing the students and taking notes about how they reacted to and engaged with the module. In order to be identified in a way that protected the students’ privacy, students were not required to write their names on the assessments, but instead they were assigned a number based on the roster for each class. The student ID consisted of three parts: the teacher ID (LD), the section ID (A for 1st period and B for 3rd period), and the student number (number
assigned based on each student’s spot on the class roster). My hope is that these surveys provided some principal feedback from students about the credit module as a whole. An observation field notebook was used to record observations of how students in the experimental group responded to the online credit module. The notebook consisted of anecdotal notes and quotes from students. Finally, a teacher reflection was completed later that evening, so the administrating teacher could have an opportunity to document the actual implementation while her thoughts were still fresh.

**Data Analysis**

In order to determine the effect of a credit focused personal finance module on high school students’ understanding of the positive and negative effects of credit, descriptive statistics were compared. The instructor for both classes was the same. Students completed a pre-test in order to establish baseline data and show what they already knew about credit. The percentages of the whole test averages on both the pre and post-tests were analyzed. An analysis of the percent change from the pre-test to the post-test was also made.

Another method for determining the effect of this module is the investigation of responses of both student surveys from the experimental group and teacher reflections (see Appendices D and E). Students in the experimental class completed a brief survey following the lesson in which the online credit module was implemented. They answered questions that both measured their understanding of the advantages and disadvantages of credit and their overall opinion of the online credit module as it connected to understanding. Answers to these provided questions gave insight into students’ perception of their own level of understanding and the role the online credit module had in any increase of their understanding. Furthermore, the teacher completed a reflection in which she described her observations of overall student response and
comprehension of the lesson topic. SurveyMonkey and Socrative were used as methods to collect data because they provided data for each student’s responses to the questions, were readily accessible because students used iPads, and allowed easy access online. Johnson (2008) has advocated the use of surveys, questionnaires, and teacher reflections as appropriate data collection techniques in action research studies. Experimental group students in 1st period spent two ninety-minute class periods completing the credit module. The teacher taught her own lesson plan for two ninety-minute periods with the same information about using credit to control group students in 3rd period. “End” data was collected through the post-tests and student surveys.

**Results**

The following research question guided the present study: What effect does a credit focused personal finance module have on high school students’ understanding of the positive and negative effects of credit as measured by a pre and post-test comparison? In order to answer the research question, the researcher used three different data sources: 1) assessment scores, 2) teacher reflections, and 3) student surveys. Findings in each area are described below.

**Assessment Scores**

In order to compare the pre-test scores between the control class and the experimental class, averages of the overall class scores were taken. These average scores for the control class are detailed below in Figure 1. It should be noted that the size of the control group was smaller (7) by four students than the experimental class (11). The tests were scored out of 100, but since neither class scored higher than 43.50%, the chart values for the y-axis range from 0 to 50.
Figure 1. Percentages of control and experimental class score averages for the pre-test and post-test.

The average scores for the pre-test were 21% for the control class and 42% for the experimental class. These scores provide a baseline for both classes with which the post-test could be measured. The post-test revealed an average of 30.29% for the control class and 43.55% for the experimental class. Of the two classes, the control class experienced the largest growth from the pre-test to the post-test. The control class observed an average score of 30.29% on the post-test, which represented a 9.29% increase from scores on the pre-test. In contrast, the experimental class observed an average score of 43.55% on the post-test, which resulted in a 1.55% increase from scores on the pre-test.

**Teacher Reflection**

After the implementation of the online credit module, the instructing teacher completed a reflection (see Appendix E for a sample). The teacher was asked to reflect on the overall success of the online credit module, the ability to reach/miss established learning goals, and overall
perceptions of student understanding as it related to the completion of these activities. These questions were open-ended by design.

The teacher’s perceptions of the online credit module were generally positive. In response to the question evaluating whether the teacher believed the online credit module was successful or not, the teacher said: “Yes, because when teaching Personal Finance Literacy, credit cards are not taught in depth as they should be. I feel like this module opened their eyes in seeing that while having a credit card can be convenient, it can also hurt them if they abuse the power of the card.” According to the teacher, the primary learning goal, FP.PFL.1.4 “Summarize how debt management and creditworthiness impact an individual’s ability to become a responsible consumer and borrower,” was met. Upon reflection, the teacher noticed an increased perception of student understanding that she tied directly to the implementation of the online credit module. Evidence for an increase in student understanding is shown in the following comment from the reflection: “One student labeled credit cards as being a “double-edged sword,” meaning that while credit cards can help build your credit score to be able to purchase things such as a house, credit cards can also hurt you if you spend more money than you actually can afford to pay off.”

Student Surveys

At the end of the study period, the experimental class was given a very brief three question password-protected survey conducted via SurveyMonkey (see Appendix D for a sample). All three questions were Likert-based where students were asked to provide their general opinions of the online credit module as a useful learning tool. Questions generally asked students to rate the usefulness of online learning modules as learning tools, their understanding of the content taught, and the future usage of online learning modules in social studies courses.
The four choices were strongly agree, agree, disagree, and strongly disagree. For the purpose of analyzing this data, a strongly agree response was assigned a value of four, agree a value of three, disagree a value of two, and strongly disagree a value of one. If a student left a particular question blank, a value of zero was assigned.

When students were asked if the online credit module was a useful learning tool, the average response was positive with an average rating of 3.17 out of a possible 4 points (see Table 1). Students provided an average rating of 3.17 when they were asked if completing the online credit module increased their level of content understanding. A rating of 2.75 was given when students were asked if the online credit module was a learning tool they would like to see utilized more often in social studies classrooms in the future.

Table 1 - Student Survey Score Averages

<table>
<thead>
<tr>
<th>Questions</th>
<th>Averages (out of 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useful Learning Tool</td>
<td>3.17</td>
</tr>
<tr>
<td>Increased Understanding</td>
<td>3.17</td>
</tr>
<tr>
<td>Future Usage</td>
<td>2.75</td>
</tr>
</tbody>
</table>

Discussion

Pre and Post-test

The research question of this action research study focused on discovering if an online credit module increased students’ understanding of the positive and negative effects of credit in a high school Civics and Economics class. The investigation of test scores, teacher reflections, and
student surveys over a two, ninety-minute lesson period did show a slight increase in overall student understanding through increased test scores and positive teacher and student reflections.

Test results showed a very slight increase in the average test scores from the implementation of the pre-test to the post-test; however, there was less growth in the experimental class’s scores than the traditional class’s scores. These findings are similar, if less dramatic, than findings in relevant literature, regarding the assertion students’ development of cognitive skills in social studies can be enhanced with organized teaching modules (Mcnaughton et al., 1967). Three factors that could have negatively affected the outcome of this study were, the small numbers of students that turned in consent forms, ten minutes were lost during the beginning of the lesson on the first day of the credit module implementation, and some questions on the pre-test could have been worded better. Because of the longer than expected time it took to receive IRB approval, students were only given two days to complete the two consent documents required for this researcher to use their scores in the study. Students lost almost ten minutes of time at the beginning of class on the first day of the module’s implementation because of technical difficulty utilizing the pre-test delivery tool. The Another factor that could limit the study’s findings is that questions 14 and 15 of the pre-test were somewhat confusing after the researcher and instructing teacher later reviewed the data. For example, the question “What is the amount you owe a credit card company at any given time - how much you can charge up to?” could be better said as “What is the amount of money you owe a credit card company after using your credit card to make a purchase?” The answer is balance and no one in either class knew the answer. It would also be beneficial to include a definition for balance in the glossary of terms, since it was not defined on any page of the module. These changes would hopefully make the question clearer to students and improve their mastery of the question. In addition, the question
“What is the name of the website where consumers can request a free credit report once every 12 months?” could have been phrased better to indicate the name of the government-sponsored website, because there are many fake websites that offer consumers a free credit report but annualcreditreport.com is the only legitimate site where consumers can request their credit report for free.

**Teacher Reflection**

A teacher reflection relating to the online credit module revealed that the teacher viewed the module positively. The teacher’s comments reveal that the online credit module provided students with basic knowledge on owning a credit card. One reason for the teacher’s positive ratings of the online credit module might be that she completed the survey before the researcher analyzed the student test scores and surveys. Another reason for the teacher’s optimistic comments could be that she enjoyed the change of pace that the module provided. Evidence from the debriefing of both the experimental and control groups might have suggested to the teacher that the module was successful. In her reflection, the teacher reported that students “…were surprised that credit cards can actually hurt you,” and “One student labeled credit cards as being a “double-edged sword.” In a future implementation of this module, I would make the teacher complete the reflection after an analysis of student test scores and reflections.

**Student Surveys**

In addition, student completed surveys noted that a majority of students self-perceived an increased level of content understanding and felt that the online credit module was a useful learning tool that they would like to see used in future lessons. The students were not as supportive of the use of an online learning module in future lessons. This discrepancy might be
because students valued the information about credit taught in the module but they might not have liked its passivity. Some students might have benefitted from more guidance in the form of occasional checks for understanding after every page of the module. The teacher could have incorporated a formative assessment such as a widget that quizzed students’ understanding of the material presented in the module. Perhaps students did not recommend the use of an online learning module in future lessons because the credit module required them to be held accountable for their own learning. Instead of regular instruction where the teacher actively guides students through instruction, the implementation of this online credit module gave students the freedom to take charge of their own learning.

Conclusions

The discrepancy between students’ and the teacher’s positive reflections on the survey and students’ actual scores might exist because the online credit module was too passive. Students likely would have benefitted from more guidance throughout the module by using checks for understanding in the form of widgets to gauge whether students understood the main points of each page of the module. Another way to make the module more active would be to make students debrief with a partner before the whole-class debrief led by the teacher. The students would be able to share their thoughts about the module with their peers, and this could lead to a more thoughtful whole-class discussion. The increase in student understanding from the pre-test to post-test for the experimental group could have been improved by including teacher-led checks for understanding at the conclusion of each module. Based on the estimated times required to complete each page of the module included in the methods section, the teacher could have stopped the students for a few minutes to briefly check for student understanding. This could have consisted of a brief formative assessment strategy such as thumbs up, thumbs down.
or some other way to gauge the students’ understanding of the information on each page of the module. The brevity and limited focus of the student survey could pose a problem for overall findings. This short survey consisted of only three questions that sought to understand student feelings of the online credit module in limited detail. More information could be gathered in future studies on this subject if the student experience was approached in a more comprehensive manner. Since the researcher did not anticipate the IRB approval process to take three weeks, the study’s implementation was somewhat rushed and it would have made the researcher more comfortable if he could have met with the faculty mentor once more to review the step-by-step implementation of the study. In the future it would be beneficial to change the appearance of the credit module by bolding all of the important terms and making the text on each page of the module more readable.

**Conclusions and Future Study**

Because of the dearth of research into using online learning modules for teaching economic and personal finance concepts, more research is required in order for social studies educators to determine best practices for teaching economics and PFL. It would be beneficial to the field as a whole to discover new information about not only how students react to online learning modules, but why they have these perceived reactions. Checks for understanding should be utilized after each page in the online credit module in order to make sure students have grasped the key points of each page. With the use of a check for understanding after each page of the module, more time in advance for students to complete the consent forms, and slight changes in the pre and post-test questions, more research must be done exploring the effectiveness of using simulations and games to teach credit and other economic and PFL concepts.
References


Appendix A: Credit Module Pre-test Questions

Quiz name: Credit Module Pre-test

1. What is your student ID?
2. What allows users to obtain goods, services, or money in return for future payments?
3. What is debit?
4. What are some reasons why American consumers use credit?
   A) Credit can help with an expensive, unexpected emergency and give you the flexibility to repay over time.
   B) Credit cards can immediately be canceled if stolen. Also, if you report a lost or stolen card promptly, you are protected against its unauthorized use.
   C) Your credit card statement is an itemized list of your monthly expenditures, which can be helpful when it comes to budgeting.
   D) Credit cards are accepted at more places than checks, and they are generally faster to use.
   E) Bills can be paid automatically via credit card, consolidating several payments into a single lump sum.
   F) Using a credit card with a rewards program may earn you benefits like free travel.
   G) All of the above are reasons why consumers use credit
5. What happens when you do not pay your balance in full when it is due?
6. In your opinion, is using credit a positive or a negative thing? Why do you feel this way?
7. What are some advantages of using credit?
   A) Immediate possession
   B) Flexibility
   C) Safety
   D) Emergency funds
   E) All of the above are advantages of using credit
8. All of the following are disadvantages of using credit EXCEPT
   A) Overspending
   B) Higher cost
   C) Impulse buying
   D) Extremely low interest rates
9. What is the rate of interest that is paid every year on a loan for the use of the money?
10. What does a bank or lending institution require in order for you to have a credit card?
11. What is the opportunity cost of using credit? What will you have to give up in order to pay for the item?
12. What is a credit score and why does having a great credit score matter?
13. What do lenders want to know about you before offering you credit?
14. What is the amount you owe a credit card company at any given time - how much you can charge up to?
15. What is the name of the website where consumers can request a free credit report once every
12 months?
16. You want to borrow $1000. Which payment method will cost you more: one paying 36 monthly payments of $36 a month, one paying 12 monthly payments of $92, or one paying 6 monthly payments of $200 a month?
   A) $92 a month for 12 months
   B) $36 a month for 36 months
   C) $200 a month for 6 months
   D) Not enough information is available
Quiz name: Credit Module Post-test
1. What is your student ID?
2. What are four main advantages of using credit?
   A) Immediate possession
   B) Flexibility
   C) Safety
   D) Emergency funds
   E) All of the above are advantages of using credit
3. What is credit and what are some reasons why consumers should use credit cards?
4. What is a credit score?
5. What is the difference between a credit report and a credit score?
6. How does your credit score influence your ability to take out a line of credit?
7. What is the difference between secured credit and unsecured credit?
8. Describe a situation in which using a credit card would be more appropriate than using a debit card or charge card.
9. All of the following are disadvantages of using credit EXCEPT
   A) Overspending
   B) Higher cost
   C) Impulse buying
   D) Extremely low interest rates
10. How do credit card companies make so much money off their customers?
11. How can creditors legally collect on their loans if you fail to repay the money?
   A) Mail or phone calls
   B) Repossess collateral for secured credit
   C) Suing the debtor for the loan and court costs
   D) Withdrawing money from one's savings account
   E) A, B, and C only
12. What can consumers do to improve their credit scores?
13. Jamal, Amir, and Sue each want to purchase an Xbox One that costs $500 and finance it with credit.
   A. Jamal paid $45.00 a month for 12 months
   B. Amir paid $12.00 a week for one year
   C. Veronica paid $25.00 a month for two years
   Of the three loans, which one paid the most to borrow the $500 and which paid the least?
   A) Veronica; Jamal
   B) Jamal; Amir
   C) Amir; Veronica
D) Amir; Jamal

14. What are the advantages and disadvantages of using credit to pay for: a. College or vocational school tuition? b. A car to get to work? c. A vacation?

15. What are some tips consumers can use to avoid falling into credit card debt?

A) Avoid temptation
B) Use debit instead of credit
C) Put away the plastic
D) Know what you owe
E) All of the above

16. What have you learned from this experience?
Overview of Credit

Many adults—and many students—have wallets and purses filled with credit cards, including some which they have “maxed out” (meaning they have spent up to their credit limit). Credit is a promise to pay later for goods or services purchased today. It is an amount of financial trust extended to you by a lender based on your ability and willingness to repay. Most people find obtaining credit easy but the continuing monthly repayment of principal and interest difficult. Credit should be used carefully and within the limits of your resources.

Most credit cards charge high interest rates (as much as 18 percent or more) if you do not pay off your balance in full each month. If you owe money on your credit cards, the smartest thing you can do is pay off the balance in full as quickly as possible. Few investments will give you the high returns you will need to pay off your balance with an 18 percent interest charge. That is why you are better off reducing your
Appendix D: Credit Module Student Survey Questions

Please select your level of agreement with the following statements:

I feel online learning modules via Weebly are useful learning tools

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

After completing this online credit module, I better understand the content covered in this unit

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

I would like to see online learning modules used in this and future history courses

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>
Appendix E: Teacher Survey Questions

**Online Credit Module Teacher Reflection**

<table>
<thead>
<tr>
<th>Instructor Name</th>
<th>Dates of Instruction</th>
<th>Classes Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What material was covered during this week’s instruction? (Please list topics covered in both classes, noting any differences)

Control Class:

Experimental Class:

What did the online credit module center on in the experimental classroom?

Overall, in your opinion, was the online credit module successful? Why or why not?

What specific learning goals were met?

What specific learning goals were not met?
<table>
<thead>
<tr>
<th>In your opinion was student understanding increased through the implementation of the online credit module?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are some specific evidences you observed that caused you to think student understanding was or was not increased?</td>
</tr>
</tbody>
</table>
Appendix F: Consent Letter from Principal Patrick Greene

Greene Central High School

140 School Drive
Snow Hill, North Carolina 28580
Telephone: (252) 747-3514
Fax: (252) 747-3972

Mr. Patrick Greene, Principal
Mr. Juan Castillo, Assistant Principal
Mr. Dexter Simms, Assistant Principal
Mrs. Uvonda Willis, Assistant Principal

Dr. Guldry,

I am writing to provide my support of your involvement in a collaborative research experience with Mr. Franch and Greene Central High School (GCHS) teachers and students. I understand that Mr. Franch will be working under the direction of our social studies faculty here at GCHS. I understand that this research will include implementation of an online credit module by Ms. Downs in her 1st period class.

I realize that the focus of the research study is to test the effect of a credit focused personal finance module on high school students’ understanding of the positive and negative effects of credit as measured by a pre and post-test comparison. In addition, I understand that our teachers and students are merely providing a venue for the research study. I support your collection of data related to the online credit module and your use of our school as a venue.

I look forward to the continued collaboration between ECU and GCHS.

Sincerely,

Patrick Greene
Principal
Greene Central High School
Appendix G: Assent Form Template

East Carolina University

Informed Consent to Participate in Research
Information to consider before taking part in research that has no more than minimal risk.

Title of Research Study: The Effect of Using a Personal Finance Module on Students' Understanding of Credit

Principal Investigator: Mr. Daniel Franch (Person in Charge of this Study)
Institution, Department or Division: Literacy Studies, English Education, and History Education
Address: 1116 E. 10th Street Apt. 1B Greenville, NC 27858
Telephone #: 919-798-6481

Researchers at East Carolina University (ECU) study issues related to society, health problems, environmental problems, behavior problems and the human condition. To do this, we need the help of volunteers who are willing to take part in research.

Why am I being invited to take part in this research?
The purpose of this research is to examine the effect of an online credit module on high school students’ understanding of credit. You are being invited to take part in this research because you are a student in Ms. Downs’s 1st or 3rd period civics and economics class. The decision to take part in this research is yours to make. By doing this research, we hope to learn what effect(s) a credit focused personal finance module have on high school students’ understanding of the positive and negative effects of credit as measured by a pre and post-test comparison.

If you volunteer to take part in this research, you will be one of about 41 people to do so.

Are there reasons I should not take part in this research?
I understand I should not volunteer for this study if I am unable to attend class due to medical reasons the days the study will be conducted.

What other choices do I have if I do not take part in this research?
You can choose not to participate.

Where is the research going to take place and how long will it last?
The research will be conducted at Greene Central High School. You will need to come to Ms. Downs’s room during your normal 1st or 3rd period civics and economics class two times during the study. The total amount of time you will be asked to volunteer for this study is 3 hours over the next month.

**What will I be asked to do?**
You will be asked to do the following: Attend class during the first two weeks of November. You will also be asked to complete a pre-test using Socrative involving 16 free response and multiple choice questions that test your prior knowledge of credit. Students in 1st period will complete the online credit module via Weebly. You will complete a credit quick quiz between the pre-test and the post-test consisting of five questions in order to gauge how well you are learning the material. At the completion of the lesson, you will complete a 16 question post-test via Socrative that will test how well you have learned the information about credit and allow you to give feedback. At the conclusion of the study you will be asked to complete a three question survey that assesses your perceptions of the benefits of an online credit module.

**What might I experience if I take part in the research?**
We don’t know of any risks (the chance of harm) associated with this research. Any risks that may occur with this research are no more than what you would experience in everyday life. We don't know if you will benefit from taking part in this study. There may not be any personal benefit to you but the information gained by doing this research may help others in the future.

**Will I be paid for taking part in this research?**
We will not be able to pay you for the time you volunteer while being in this study.

**Will it cost me to take part in this research?**
It will not cost you any money to be part of the research

**Who will know that I took part in this research and learn personal information about me?**
ECU and the people and organizations listed below may know that you took part in this research and may see information about you that is normally kept private. With your permission, these people may use your private information to do this research:

- East Carolina University. Any agency of the federal, state, or local government that regulates human research. This includes the Department of Health and Human Services (DHHS), the North Carolina Department of Health, and the Office for Human Research Protections.
- The University & Medical Center Institutional Review Board (UMCIRB) and its staff have responsibility for overseeing your welfare during this research and may need to see research records that identify you.

**How will you keep the information you collect about me secure? How long will you keep it?**
In order to prevent students from being identified by name, students will be given a student ID based on their class period and number on the roster. Data that has been collected will be kept in a locked file cabinet in the locked office of the PI.
What if I decide I don’t want to continue in this research?
You can stop at any time after it has already started. There will be no consequences if you stop and you
will not be criticized. You will not lose any benefits that you normally receive.

Who should I contact if I have questions?
The people conducting this study will be able to answer any questions concerning this research, now or in
the future. You may contact the Principal Investigator at 919-798-6481 (days, between 9:00am and
5:00pm)

If you have questions about your rights as someone taking part in research, you may call the Office of
Research Integrity & Compliance (ORIC) at phone number 252-744-2914 (days, 8:00 am-5:00 pm). If
you would like to report a complaint or concern about this research study, you may call the Director of the
ORIC, at 252-744-1971

I have decided I want to take part in this research. What should I do now?
The person obtaining informed consent will ask you to read the following and if you agree, you should
sign this form:

• I have read (or had read to me) all of the above information.
• I have had an opportunity to ask questions about things in this research I did not understand and
  have received satisfactory answers.
• I know that I can stop taking part in this study at any time.
• By signing this informed consent form, I am not giving up any of my rights.
• I have been given a copy of this consent document, and it is mine to keep.

Participant's Name (PRINT)                                   Signature                            Date

Person Obtaining Informed Consent: I have conducted the initial informed consent process. I have
orally reviewed the contents of the consent document with the person who has signed above, and
answered all of the person’s questions about the research.

Person Obtaining Consent (PRINT)                            Signature                            Date
Title of Research Study: The Effect of Using a Personal Finance Module on Students' Understanding of Credit

Principal Investigator: Mr. Daniel Franch (Person in Charge of this Study)
Institution, Department or Division: Literacy Studies, English Education, and History Education
Address: 1116 E. 10th Street Apt. 1B Greenville, NC 27858
Telephone #: 919-798-6481

Researchers at East Carolina University (ECU) study issues related to society, health problems, environmental problems, behavior problems and the human condition. To do this, we need the help of volunteers who are willing to take part in research.

Why is my child being invited to take part in this research?
The purpose of this research is to examine the effect of an online credit module on high school students’ understanding of credit. Your child is being invited to take part in this research because your child is a student in Ms. Downs’s 1st or 3rd period civics and economics class. The decision to take part in this research is your child’s and yours to make. By doing this research, we hope to learn what effect(s) a credit focused personal finance module have on high school students’ understanding of the positive and negative effects of credit as measured by a pre and post-test comparison. If your child volunteers to take part in this research, your child will be one of about 41 students to do so.

Are there reasons my child should not take part in this research?
I understand that my child should not volunteer for this study if my child is unable to attend class due to medical reasons the days the study will be conducted.

What other choices does my child have if my child does not take part in this research?
Your child can choose not to participate and will instead be provided an alternative class activity.

Where is the research going to take place and how long will it last?
The research will be conducted at Greene Central High School. Your child will need to come to Ms. Downs’s room during either 1st or 3rd period civics and economics class two times during the study. The total amount of time your child will be asked to volunteer for this study is 3 hours over the next month.

What will my child be asked to do?
Your child will be asked to do the following: Attend class during the third week of November. Your child will also be asked to complete a pre-test using Socrative involving 16 free response and multiple choice questions that tests your child’s prior knowledge of credit. Students in 1st period will complete the online credit module via Weebly. Your child will complete a credit quick quiz between the pre-test and the post-test consisting of five questions in order to gauge how well your child is learning the material. At the completion of the lesson, your child will complete a 16 question post-test via Socrative that will test how
well your child has learned the information about credit and allow your child to give feedback. At the conclusion of the study, your child will be asked to complete a three question survey that assesses their perceptions of the benefits of an online credit module.

**What might my child experience if my child takes part in the research?**
We do not know of any risks (the chance of harm) associated with this research. Any risks that may occur with this research are no more than what your child would experience in everyday life. We do not know if your child will benefit from taking part in this study. There may not be any personal benefit to your child, but the information gained by doing this research may help others in the future.

**Will my child be paid for taking part in this research?**
We will not be able to pay your child for the time your child volunteers while being in this study.

**Will it cost my child to take part in this research?**
It will not cost your child any money to be part of this research.

**Who will know that my child took part in this research and learn personal information about my child?**
ECU and the people and organizations listed below may know that your child took part in this research and may see information about your child that is normally kept private. With your permission, these people may use your child’s private information to do this research:
- East Carolina University. Any agency of the federal, state, or local government that regulates human research. This includes the Department of Health and Human Services (DHHS), the North Carolina Department of Health, and the Office for Human Research Protections.
- The University & Medical Center Institutional Review Board (UMCIRB) and its staff have responsibility for overseeing your child’s welfare during this research and may need to see research records that identify your child.

**How will you keep the information you collect about my child secure? How long will you keep it?**
In order to prevent students from being identified by name, students will be given a student ID based on their class period and number on the roster. Data that has been collected will be kept in a locked file cabinet in the locked office of the PI.

**What if I decide I do not want my child to continue in this research?**
Your child can stop at any time after the study has already started. There will be no consequences if your child stops and your child will not be criticized. Your child will not lose any benefits that your child normally receives.

**Who should I contact if I have questions?**
The people conducting this study will be able to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator at 919-798-6481 (weekdays between 9:00am and 5:00pm).

If you have questions about your child’s rights as someone taking part in research, you may call the Office of Research Integrity & Compliance (ORIC) at phone number 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director of the ORIC, at 252-744-1971.
I have decided I want my child to take part in this research. What should my child do now?

Please read the following statements, and if you agree, you should sign this form:

- I have read (or had read to me) all of the above information.
- I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.
- I know that my child can stop taking part in this study at any time.
- By signing this informed consent form, I am not giving up any of my rights.
- I have been given a copy of this consent document, and it is mine to keep.

____________________________________
Child’s name

Parent's Name (PRINT)  Signature  Date

Person Obtaining Informed Consent: I have conducted the initial informed consent process. I have orally reviewed the contents of the consent document with the person who has signed above, and answered all of the person’s questions about the research.

Person Obtaining Consent (PRINT)  Signature  Date
### Appendix I: Timeline of Study

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 1-2, 2015</td>
<td>The teacher introduced the credit lesson in both the experimental and control class and made students take the pre-test at the beginning of class.</td>
</tr>
<tr>
<td>December 1-2, 2015</td>
<td>The teacher then implemented the credit module for the experimental class and taught her own lesson plan to the control class.</td>
</tr>
<tr>
<td>December 3-18, 2015</td>
<td>The researcher analyzed the data and wrote the results of the study.</td>
</tr>
</tbody>
</table>
Appendix J: Experimental Group Note-taking Strategy

Name: ___________________________

Credit Module Quest
Directions: Use this worksheet to guide your note taking while completing the credit module

Overview of Credit
1. What is a credit card?

______________________________________________________________________________
______________________________________________________________________________

2. What is a debit card?

______________________________________________________________________________

3. What is a charge card?

______________________________________________________________________________

Four Credit Videos
1. Notes from first video

______________________________________________________________________________

2. Notes from second video

______________________________________________________________________________

3. Notes from third video

______________________________________________________________________________

4. Notes from fourth video

______________________________________________________________________________

Advantages of Using Credit
1. Immediate Possession -

______________________________________________________________________________

2. Flexibility -

______________________________________________________________________________

3. Safety -

______________________________________________________________________________

4. Emergency Funds -

______________________________________________________________________________
What Lenders Want to Know About You (Write the four main questions lenders ask)
1. 

2. 

3. 

4. 

Disadvantages of Using Credit
1. Overspending - 

2. Higher Cost - 

3. Impulse Buying - 

Credit Card Payment Calculator (Use the space below to calculate how long it will take to pay off credit card balances of $5,000, $10,000, and $20,000 at interest rates of 15%, 18%, and 21%)
Helpful Credit Card Tips

1. Avoid temptation - 

2. Use debit instead of credit - 

3. Put away the plastic - 

4. Know what you owe - 

Appendix K: Control Group Note-taking Strategy
Appendix L: Lesson Plan for Control Group

LET'S TALK ABOUT CREDIT

Don’t let it deceive you!

TYPES OF CREDIT ACCOUNTS

➤ Bank card

➤ Example: Visa or Mastercard

➤ 4 methods of payment:

➤ online, over the phone, in the mail, drop off.

AVOID LATE FEES!!

TYPES OF CREDIT ACCOUNTS

➤ Store card

➤ Example: Target

➤ The best use of a store card is that you will get rewards & discounts

➤ You can apply online or in the store

TYPES OF CREDIT ACCOUNTS

➤ Travel & Entertainment

➤ Example: American Express

➤ Get rewards for booking vacations on your travel credit card

WHAT LENDERS WANT TO KNOW ABOUT YOU

➤ Are you RELIABLE?

➤ Do you have a STEADY INCOME?

➤ Do you earn enough money to REPAY the loan?
➤ Do you have a good CREDIT SCORE?


COSTS & FEATURES OF A CREDIT CARD

➤ Annual Percentage Rate (APR): amount of interest on your loan that you will pay annually.

➤ Low APR’s will fall 10% or less.

➤ Grace Period: Amount of time after payments are due before penalties occur.

➤ Ex: student loans generally have a 6 month grace period.

➤ Credit Score: a number given to you that lets lenders know your capacity to pay back the loan.

OTHER TYPES OF CARDS

➤ Charge Cards

➤ You are required to pay the balance in full at the end of the month.

➤ You don’t have a risk of owing a balance with interest.

➤ Debit Cards

➤ Linked to your checking or savings account.

➤ You can’t purchase things you don’t have the money for.

HELPFUL CREDIT CARD TIPS

➤ AVOID Temptation

➤ Use debit instead of credit

➤ Put away the plastic

➤ Know what you owe