

**Assessing the Effectiveness of Simulation Activities in a High School Financial Literacy  
Classroom**

by

**Tiffany Smietana-Lysell**

Bachelor of Science, Indiana University of Pennsylvania, 2015

Master of Education, Messiah University, 2019

Submitted to the Graduate Faculty of the  
School of Education in partial fulfillment  
of the requirements for the degree of  
Doctor of Education

University of Pittsburgh

2023

UNIVERSITY OF PITTSBURGH  
SCHOOL OF EDUCATION

This dissertation was presented  
by

**Tiffany Smietana-Lysell**

It was defended on

May 19, 2023

and approved by

Dr. Michael Gunzenhauser, Professor and Chair, Department of Educational Foundations,  
Organizations, and Policy

Dr. Sally McCombie, Professor Emeritus, Indiana University of Pennsylvania

Dissertation Director: Dr. Sharon Ross, Associate Professor, Department of Health and Human  
Development

Copyright © by Tiffany Smietana-Lysell

2023

# Assessing the Effectiveness of Simulation Activities in a High School Financial Literacy Classroom

Tiffany Smietana-Lysell, B.S., M.Ed

University of Pittsburgh, 2023

Financial Literacy is one of the subject areas taught in Family and Consumer Sciences (FCS) courses which is not graduation requirement for high school students across Pennsylvania. The problem of practice I addressed is that Greensburg Salem High School (GSHS) students are graduating without the financial literacy knowledge and skills to become successfully independent adults. Three inquiry questions that guided my dissertation in practice are: 1) *How is student financial literacy knowledge impacted by a simulation activity compared to the Next Gen Personal Finance (NGPF) curriculum and teaching practices?*; 2) *What are the teacher's perceptions of implementing the simulation activity compared to the standard curriculum/practices?*; and 3) *Was the teacher able to implement the Budget Project simulation activity with high levels of fidelity?* Two GSHS Financial Literacy classes participated in the inquiry project: one group of students completing a new Budget Project simulation activity and the other group completing the standard NGPF Budgeting Unit. Measures included a student pre/post survey to assess their financial literacy knowledge, an individual interview with the intervention classroom teacher, and observations of intervention implementation via a fidelity checklist. The descriptive statistics from the survey and fidelity data, combined with the codes from the teacher interview, revealed positive results in both the intervention teacher and the students. Students had higher financial literacy knowledge retention and understanding after completing the Budget Project, and the teacher reported ease of use and productive experiences with students. Future implications include

modifying the GSHS Financial Literacy curriculum to include more simulation activities, including the Budget Project, and enhancing professional development for educators teaching financial literacy.

**Table of Contents**

**1.0 Naming and Framing the Problem of Practice ..... 12**

**1.1 Broader Problem Area..... 12**

**1.2 Organizational System ..... 15**

**1.3 Stakeholders ..... 17**

**1.3.1 Building Departments and Administration .....17**

**1.3.2 FCS and Other Teachers .....18**

**1.3.3 Principals and Guidance Counselors .....18**

**1.3.4 Greensburg Salem School Board and Beyond .....19**

**1.3.5 Community of Greensburg PA .....20**

**1.4 Statement of Problem of Practice ..... 20**

**1.5 Review of Supporting Knowledge ..... 22**

**1.5.1 Purpose of Review .....22**

**1.5.2 Defining Financial Literacy and Wellness .....22**

**1.5.3 Urgent Need to Address Financial Literacy .....23**

**1.5.4 Financial Literacy Acquisition Factors .....24**

**1.5.4.1 Personal Factors..... 25**

**1.5.4.2 Prior Financial Education..... 26**

**1.5.4.3 Attitude Toward Learning Financial Literacy ..... 27**

**1.5.5 Principles of Teaching Financial Literacy to Adolescents .....28**

**1.5.5.1 Differentiation ..... 28**

**1.5.5.2 Real World Tasks ..... 30**

1.5.5.3 Just-in-Time Instruction .....	31
1.5.6 Summary .....	32
2.0 Theory of Improvement .....	34
2.1 Theory of Improvement .....	34
2.2 Driver Diagram.....	35
2.2.1 Aim Statement .....	35
2.2.2 Primary Systems Drivers.....	35
2.2.3 Secondary Systems Drivers .....	36
2.2.4 Change Ideas and Interventions .....	37
2.3 Improvement Systems Measures.....	40
2.3.1 Process Measures .....	41
2.3.2 Driver Measures .....	41
2.3.3 Outcome Measures.....	42
2.3.4 Balance Measures.....	42
2.4 Intervention Description .....	43
2.5 Study Setting and Sample .....	44
2.6 Inquiry Questions and Predictions .....	45
2.7 Methods and Measures .....	47
2.7.1 Measures .....	47
2.7.1.1 Fidelity Observation .....	47
2.7.1.2 Student Survey .....	47
2.7.1.3 Teacher Interview .....	48
2.7.2 Data Collection Procedures .....	48

2.7.3 Analysis Plan .....	49
<b>3.0 Results .....</b>	<b>51</b>
3.1 Implementation Fidelity.....	51
3.2 Student Survey Results .....	51
3.3 Posttest Open-ended Questions .....	53
3.3.1 Intervention Group .....	54
3.3.2 Control Group .....	55
3.4 Teacher Semi-Structured Interview Results .....	56
3.4.1 Theme 1: Strengths of the Budget Project .....	57
3.4.2 Theme 2: Shortfalls of Next Gen Personal Finance .....	58
3.4.3 Theme 3: Recommendations for Improvements .....	59
<b>4.0 Learning and Actions .....</b>	<b>61</b>
4.1 Main Findings .....	61
4.1.1 Findings Related to Inquiry Question 1 .....	61
4.1.2 Findings Related to Inquiry Question 2 .....	62
4.1.3 Findings Related to Inquiry Question 3 .....	63
4.2 Impact of the Change Idea on the System.....	64
4.3 Strengths and Weaknesses.....	65
4.3.1 Strengths .....	65
4.3.2 Weaknesses .....	65
4.4 Next Steps and Implications .....	66
4.4.1 Implications for Practice .....	66
4.4.2 Implications for Research .....	70



<b>4.5 Conclusion</b> .....	<b>71</b>
<b>5.0 Reflection</b> .....	<b>72</b>
<b>5.1 Learning to Know</b> .....	<b>73</b>
<b>5.2 Learning to Do</b> .....	<b>73</b>
<b>5.3 Learning to Be</b> .....	<b>74</b>
<b>5.4 Learning to Live Together</b> .....	<b>75</b>
<b>5.5 Summary</b> .....	<b>76</b>
<b>Appendix A Appendices and Supplemental Content</b> .....	<b>77</b>
<b>Appendix A.1 Driver Diagram for the Theory of Improvement to Improve Financial Literacy Knowledge and Skills Among Greensburg Salem High School Students</b> .....	<b>77</b>
<b>Appendix A.2 Budget Project Student Packet</b> .....	<b>78</b>
<b>Appendix A.3 Budget Project Facilitator Guide</b> .....	<b>88</b>
<b>Appendix A.4 Financial Literacy Teacher Interview Questions</b> .....	<b>97</b>
<b>Appendix A.5 Fidelity Observation Checklist</b> .....	<b>99</b>
<b>Appendix A.6 Student Pre and Post Survey</b> .....	<b>101</b>
<b>Bibliography</b> .....	<b>105</b>

**List of Tables**

**Table 1. Mean (SD) and % Correct Knowledge Score & Growth (% Change) for Intervention and Control Students..... 52**

**Table 2 Themes, Categories, and Descriptions for Teacher Interview Data Analysis ..... 56**

## List of Figures

<b>Figure 1. Student Perceptions of Skills Following the Budget Module.....</b>	<b>53</b>
---	-----------

## **1.0 Naming and Framing the Problem of Practice**

### **1.1 Broader Problem Area**

Family and Consumer Sciences (FCS) is the school course that is designed most closely to support students' transition into young adulthood. FCS is formerly known as "Home Economics" in schools across the world. According to the American Association of Family and Consumer Sciences' (AAFCS) definition of FCS, it is a "field of study focused on the science and the art of living and working well in our complex world" (2018, para. 1). This short definition stands for values that promote a positive and healthy well-being at every stage of one's life. Historically, this class, offered to middle school and high school students, was for females to prepare to take care of the household while the males prepared for the workforce. Laundry, cooking, and sewing were the main focuses of FCS classes in the early 1900s. Now, these course offerings have evolved to prepare all students for successful, independent lives throughout their various future endeavors. Yet, there are stereotypes of FCS courses that the courses only teach cooking and sewing lessons and that they are just schedule fillers for students in need of credits (Barnum, 2018).

Throughout the past twenty years, FCS course offerings and enrollment have collectively been declining in high schools across the United States. Between the years of 1986 to 1996, universities that were graduating students certified in Family and Consumer Sciences education dropped from 852 to 315 graduates (Zehr, 1998). Between 1991-2001, Career and Technical Education (CTE) teacher preparation programs, which encompasses FCS, showed a 10% decrease in their educational offerings across the United States (Godbey & Johnson, 2011). Furthermore,

from 2000 to 2012 the number of students taking FCS courses in school declined by 38% in the United States (Danovich, 2018).

There are many factors that may have contributed to this decline in enrollment in FCS. Perhaps a primary contributing factor is the No Child Left Behind (NCLB) Act, established in 2001. NCLB focused on improving education and student performance for children in school through standards and testing. One unintended consequence of this policy is that it effectively shifted schools' priorities and course offerings away from FCS because it is not a core subject or a subject included in standardized tests. Antuna (2010) wrote about the impact of the NCLB Act on Family and Consumer Sciences courses in Arizona. Over a ten-year period starting in 1994, Family and Consumer Sciences enrollment numbers stayed steady, along with other elective courses, like Art and Music. Continuing data collection an additional five years, enrollment decreased and FCS teachers and district administrators did not see that FCS curriculum aligned with the mission and standards of NCLB. Because of these issues, FCS post-secondary pre-service programs were eliminated as undergraduate degrees from a number of accredited colleges and universities.

In 2010, a renewed focus was brought back to FCS as an important school subject because of the increase in childhood obesity. A lack of nutrition education for students on proper food preparation and adequate nutritious food consumption, potentially contributing to the childhood obesity epidemic (Lichenstein & Ludwig, 2010). FCS is the school subject area that focuses on this topic, in addition to goal setting, decision making, and developing 21<sup>st</sup> century skills. Although the importance of FCS seems to be more supported today based on its curriculum to teach critical life skills to students, there is little evidence that this heightened awareness is translating to an increase in FCS course offerings and enrollment.

In the state of Pennsylvania (PA), financial literacy courses are a not requirement for graduation (Williams, 2019). As of 2015, only 15% of high schools across the state of PA required all students to take a personal finance course to graduate, and the number of students taking these classes continues to drop. In 2019, Pennsylvania Senator Anthony H. Williams formed a plan to create personal finance courses for grades K-12, make it a state requirement for graduation, and have a sector within the Department of Education referred to as Financial Education (Williams, 2019). Later that year, movement through legislation pushed for personal finance classes in PA high schools to count toward required credits in other subject areas. While this is a step in the right direction, these efforts have been at a standstill since 2020 with the start of the COVID-19 pandemic. In PA, each school district's policies determine whether or not students are required to pass a personal finance course before graduating high school.

There is a gap in the skills that students are graduating high school with and those that are needed for decision making and future readiness as an adult. Many high school graduates have reported they did not feel prepared to live an independent life following graduation (Shaklee et al., 2017). At GSHS, graduates have reported feeling unprepared to make the best choices while living on their own after high school. The national standards for FCS have recently been restructured to align with various career and employability skills, like 21<sup>st</sup> century outcomes and Common Career Technical Core standards (AAFCS, 2022). These standards support many different programs of study and career clusters. Similarly, enrolling students in FCS courses in high school could be one way to increase these 21<sup>st</sup> century skills and learning opportunities for adolescents prior to graduation. FCS classes, like financial literacy, could be an effective way to bridge the gap between financial literacy knowledge and skills with career readiness and personal development. .

## 1.2 Organizational System

Greensburg Salem School District (GSSD) is in the suburbs of Pittsburgh, PA in a town called Greensburg. Approximately 3,250 students attend schools in the district, with a poverty rate of 49% in the district compared with nearly 19% in the surrounding community (Data USA, 2019). Nearly 89% of Greensburg residents are Caucasian and 4.5% are African American. Grades 9-12 of Greensburg Salem are located on the high school campus. This building has its own Principal and Associate Principal who are in charge of course schedule arrangements and leading almost 80 faculty members.

Greensburg Salem takes pride in their achievements and recognitions. When first walking into the GSHS building or skimming through the website, you will notice how student-centered the district is. Trophies and plaques are not the first items that you see in the lobby, like in other schools; instead, student artwork and projects are proudly on display. The most updated mission statement of GSSD reads:

“The Greensburg Salem School District will work collaboratively with the community in educating all students to become productive and responsible citizens. This will be accomplished by recognizing the value of each individual and promoting personal growth and academic achievement through the implementation of innovative strategies and the integration of current technologies in a safe and caring environment. We will follow the Greensburg Salem Pathway to Success, our GPS, move toward our vision of all children acquiring high standards of Character, Leadership, Scholarship, and Service.”  
(Greensburg Salem School District, n.d.)

The four pillars mentioned (character, leadership, scholarship, and service) are described in more detail on the website, with aspirations of creating scholars, community connections, and

building student character. National and State FCS standards and district curriculum support these pillars as well as the other subject areas offered at the high school.

The FCS department, consisting of two teachers, is grouped with the Business, Media, and Technology Departments, and the Department Chair for FCS is also a production media teacher. The FCS courses offered at the high school level consist of Child Development I, II, and III, Financial Literacy, Nutrition, and Foods I and II. The high school has a guidance department for students to utilize when scheduling classes for the upcoming school year. There are three counselors for approximately 1,000 students in the building. Guidance counselors are also responsible for keeping track of graduation requirements for students. Starting in the 2022-2023 school year, GSSD is requiring all incoming ninth graders and future high school students to take a semester of Financial Literacy as a requirement to graduate. With the graduation rate of GSHS at 93% and 2,729 students in the whole district (GSSD, 2020), this new financial literacy requirement is going to impact many Greensburg Salem students and community members for years to come.

My positionality in this system is an FCS teacher that joined the district in October 2021. However, I am completing my seventh year as a teacher in PA, so my past experiences of teaching across the state have created a solid foundation for my current role. My opinion and expertise are respected across the faculty, staff, and administration within the high school building, which helps with my influence on the current state of the problem. With personal and professional values in education that align with those of the GSSD, like the importance of hands-on experiences and transferrable content, this also helps with my position as an FCS teacher and current doctoral student implementing change toward my problem of practice.



## **1.3 Stakeholders**

The ETD template default text alignment is right/left justified. If you would prefer to have your text left aligned, you can modify the Normal style to be left justified by right-clicking on Normal in the Styles pane and selecting Modify. Then you select the alignment you would prefer in that menu. You should also be aware that other elements such as captions and bibliography entries may still be using different alignments. You shouldn't need to adjust any of the Headings or other styles, but you should review the other sections to make sure any other alignments haven't been effected.

### **1.3.1 Building Departments and Administration**

Each department is made up of a chair teacher that leads the other teachers in the subject area. Together, they play a different role in their subject area and can have direct influence on student enrollment and enjoyment. There is a close and respectful relationship between the building administration and the high school teachers, which is helpful for suggesting and implementing change. However, there are still jobs that each administrator and teacher are to do that may interfere with progress toward improvement. Graduation requirements must be met by students and teachers must prepare students for standardized testing.

### **1.3.2 FCS and Other Teachers**

FCS teachers are in charge of promoting and advertising their own classes to appeal to students, counselors, and administration. Enrollment for all offered FCS courses were maxed out for the 2021-2022 school year; however, these high admission numbers are not consistent from school year to school year. Also, there are only two FCS teachers at the high school level, which limits the number of elective course offerings that are available to students.

Starting in the 2022-2023 school year, all incoming ninth grade students and all future graduates of GSHS will be required to pass the Financial Literacy course offered in the high school. This will take yearly enrollment of under 100 students in this course to approximately 250 students. Teachers in the FCS and Business Education departments are required to teach Financial Literacy, but many have never taught this class before. There have not been discussion about teacher training and preparation for teaching this course for the 2022-2023 school year. Assigning this course to more teachers will limit the number of other courses that they teach in their subject area. Enrollment may decline for other course offerings, making this a major adjustment for teachers.

### **1.3.3 Principals and Guidance Counselors**

Besides the FCS teachers, the principals and guidance counselors hold the most power in the success of FCS course enrollment and student interest because they directly deal with student scheduling. Guidance counselors work more with student schedules. They assist in suggesting and choosing the best classes to add to students' schedules based on their interests and goals. There is some level of support and promotion from both the principals and guidance counselors that assist

in the current success of the FCS program; however, as stated previously, this support is not guaranteed.

Building principals decide the final budget allotment for all courses in need, like the grocery budget for FCS culinary classes and extra teaching budget for the FCS Child Development Preschool Practicum, as well as the final teacher schedules for the school year. As prices increase for necessary class materials, like food and craft supplies, there is no guarantee that the budget amount given for the FCS courses to use during the school year will be enough for all supplies needed. It is the duty of administrators to divide the school district budget between different departments through the district. It is also the role of administrators to make cuts and eliminate causes of higher expenditures. In this case, FCS materials cost more than most other subjects in the Senior High School. When corners get cut, so do FCS courses and teachers.

#### **1.3.4 Greensburg Salem School Board and Beyond**

The Greensburg Salem School Board is in charge of hiring teachers and staff, budget allotments for each building in the district, and other orders of business. Very rarely do members of the board make their way into the classrooms to see how their hires and money are put into action. A lot of the information of what the school board members know of classroom activities is what is published in the newspaper, social media, or emailed to them directly by principals, faculty, or families. Enrollment, budget allotments, schedules, and alike information is relayed from the building principals to the school board. It is unclear if the members of the board are aware of varying enrollment of FCS courses from school year to school year or whether they believe FCS

courses are necessary for students to add to their schedules. It is important to continuously advocate for financial literacy and other courses in the FCS subject area to all levels within the GSSD.

### **1.3.5 Community of Greensburg PA**

Community engagement within FCS courses relies solely on outreach from the teachers. It is up to us to coordinate visits for community to come into the classroom, get them approved by the building administration, make time in the school day and curriculum for guest speakers, and offer compensation, if needed, out of the classroom budget. Local accountants in Greensburg, PA have talked to financial literacy students in the FCS classroom about taxes. District career coordinators have assisted FCS students in creating personalized career paths and financial goals. Parents in the community want what is best for their children; usually, this means they want their child to have the best shot at a good post-secondary education, scholarships, and internship opportunities. Because FCS does not offer this to the extent that is expected by some parents in the district (i.e., direct Advanced Placement preparedness, College in High School credits), community support for this subject (?) is minimal.

## **1.4 Statement of Problem of Practice**

With all of the evidence and data presented so far, one can see how the issues involving FCS education in the GSSD stem from persistent and broader problems on the national level, such as the effects of NCLB. With the decreasing enrollment of FCS high school students (Zehr, 1998),

to the decline of college and university program offerings and certified graduates (Godbey & Johnson, 2011), FCS has had an unstable foundation for decades. It is difficult to grapple with the idea that students spend thirteen years in a school system yet graduation unprepared to go out into the world and face basic daily tasks that require them being financially literate. **Greensburg Salem High School students are graduating without the financial literacy knowledge and skills to become successfully independent adults.**

Research shows that young adult debt is very high and families struggle financially with debt management and general budgeting each year. According to Experian's 2020 State of Credit Report, Americans aged 24 and younger have an average of over \$10,000 in debt (DeMatteo, 2021). This report also showed that debt increases throughout the generations; young adults have more debt than their parents, who had more debt than their parents, etc. FCS courses, like financial literacy, teach foundational and essential information to high school students to set them up for future success.

The timing is right to introduce change into the organizational system. A new and developing focus of the school district is "future readiness" with the mission that "Greensburg Salem educates the whole child so all graduates are prepared as productive and responsible citizens ready to serve the communities of their future" and the vision that, "...all graduates are prepared as pillar citizens and human beings with the knowledge and understandings for character, leadership, scholar, and service minded skills, ready to serve their local and global communities for personal, social, economic, and environmental stability and growth" (GSSD, 2020, p. 1). It is unlikely that these goals will be achieved and that our students will be prepared for their futures without exposure to personal finance education.

Financial literacy is a main pillar of FCS curriculum, and even though GSHS students are now required to take this course prior to graduation, there is not consistency in the scope or sequence of the curriculum within these courses across the teachers who will be teaching Financial Literacy to all incoming ninth grade students. As an FCS teacher, it is perplexing for me to see that the District is failing to properly prepare these students for life outside of high school. Without financial literacy education, it is unlikely that these students have acquired skills to budget, take out a loan, or save money. Though FCS will be a required subject in the 2022/2023 school year, there are opportunities to improve the curriculum, teacher buy-in and district support.

## **1.5 Review of Supporting Knowledge**

### **1.5.1 Purpose of Review**

The purpose of this review of supporting scholarship was to frame the problem of practice and was guided by the following questions:

- What is financial literacy and why is it important?
- What are some principles of teaching financial literacy to adolescents?
- What impacts students' prior knowledge or acquisition of financial literacy?

### **1.5.2 Defining Financial Literacy and Wellness**

Redmund (2010) defines financial literacy as “a person’s competency for managing money,” (p. 279) and can be measured individually or in a group setting, like social class data or

high school course scores. Financial illiteracy, on the other hand, involves having problems with debt, choosing mutual funds with higher fees, being less likely to participate in stocks, ineffectively managing or accumulating wealth and/or being less likely to plan for retirement (Lusardi, Mitchell & Curto, 2010). Researchers have made the argument that teaching financial literacy to children and adolescents is critical in our time (e.g., Lusardi, Mitchell, and Curto, 2010; Wagner, 2019).

In different words, financial literacy is knowing something about money, being able to communicate about finances effectively, possessing confidence in future planning, and making appropriate financial decisions. One's financial literacy is determined on an individual and group level, depending on the environment (e.g., high school classroom, support group) (Redmund, 2010). One's knowledge of personal finance can be difficult to scale because it may be an opinion on his or her own confidence in making financial decisions. In a class or other group settings, state or national standards can determine whether students are financially educated and able to make responsible decisions with money. Either way, it is a measure of how much someone knows about consumer decisions and their consequences.

### **1.5.3 Urgent Need to Address Financial Literacy**

Research shows that young adult debt is very high and families struggle financially each year. According to Experian's 2020 State of Credit Report, Americans aged 24 and younger have an average of over \$10,000 in debt. This report also shows that debt increases through the different generations (DeMatteo, 2021). Given these trends, a persistent question in education concerns the role of K-12 schooling in supporting students' readiness for entering young adulthood. As students progress through the schooling system, lessons in life skills have broadly been replaced with core subjects as a means to satisfy state and local educational requirements. This gap may leave students

less prepared to enter adult life. For example, a study by Garcia-Aracil, Monteiro, and Almeida (2018) surveyed students of all backgrounds in Spain about their own perceptions of their preparedness for the working world after high school. While students reported handling post-secondary life with confidence, it was concluded by the authors, based on the data, that future graduates could benefit from lessons that focus on career preparation and readiness. Such lessons would include twenty-first century skills, like effective communication and technology training, to ready students to be reliable employees.

Not only is financial literacy crucial for individual success and wellness but can also have a positive impact on the country's economy. The U.S. President's Advisory Council on Financial Literacy has stated that "far too many Americans do not have the basic financial skills necessary to develop and maintain a budget, to understand credit, to understand investment vehicles, or to take advantage of our banking system. It is essential to provide basic financial education that allows people to better navigate an economic crisis such as this one" (Lusardi & Mitchell, 2014, p. 37). A review article by Lusardi and Mitchell (2014) looked at how an increase in financial knowledge among Americans might impact the economy. Conclusions from this study explained that if more efforts were put in place for financial literacy education, the US economy could improve in areas of Social Security benefits, mortgage trends, and even higher qualities of life for Americans. It was stated that financial literacy is a "human capital" (p. 38) and a bigger investment into such education could have higher returns for everyone (Lusardi & Mitchell, 2014).

#### **1.5.4 Financial Literacy Acquisition Factors**

There are multiple factors that affect current levels and acquisition of financial literacy. Personal factors such as income, education, race/ethnicity or current knowledge. What a student



has already learned or experienced can impact their acquisition of money management in school. Also, attitudes and perspectives of students can impact their experience in a financial literacy course.

#### **1.5.4.1 Personal Factors**

Financial wellness presents itself as an equity issue, as there are disparities by education, income and race/ethnicity. There is a positive correlation between financial literacy and one's income status and overall educational attainment (Wagner, 2019). Wagner (2019) examined the relationship between financial education programs and adult financial status and success to see if one's social class and prior education impacted their knowledge of finances. The results of this study show that individuals who received more training in financial literacy had higher incomes as adults. Those with lower incomes had less financial training and less overall completion of general education. Another group of researchers focused on comparing financial and healthcare decision making between African-American and White older adults (Han, Barnes, Leurgans, Yu, Bennett, and Boyle, 2020). Participants' race/ethnicity were examined along with age, gender, and their general education, as well as their backgrounds and environmental influences. It was determined that older, White participants made better financial and health decisions than those of the African American race. White participants outperformed African American participants in all areas due to socioeconomic status and available resources that each group had exposure to during adolescences.

Financial literacy can include five particular topics of money management: financial counseling, investing, credit cards, insurance, and loans. Allgood and Walstad (2016) conducted research with adults and determined that those who had more knowledge in each of the five finance topics scored higher on financial literacy and reported feeling comfortable with their monetary

decisions throughout their lives. Individuals who felt confident in their financial decisions ended up making better decisions than those who reported feeling unsure about money-related decision making. According to a study by Chang and Lyons (2007), those who are financially disadvantaged tend to have less knowledge of various concepts within financial literacy.

#### **1.5.4.2 Prior Financial Education**

Students may receive some financial education outside of school from their parents or community groups. Studies show that students with prior knowledge of budgeting tend to make healthier consumer decisions, have less debt, and higher retirement funds (Lührmann et al, 2018). A research study involved 900 students over 25 various high schools to test the knowledge of adolescents and the financial consequences of their choices. Retirement, investing, and savings were some focal points, as well as the concept of time and their decisions. Throughout the span of this study, it was concluded that prior knowledge of finances leads to consistency with spending, saving, and positive financial decisions. Also, previously educated students tend to make better choices in a timelier manner, versus second-guessing their financial decisions or making costly decisions first. Intertemporal decisions, meaning choices that impact one's future, are sometimes foreign thoughts to high school students. Some do not realize that their current and near-future choices can make a long-term impact on their financial well-being. It is assumed that students learn about these long-term impacts from their parents, but that is not always the case. With proper financial education, students enrolled in such courses have a better chance of making financial decisions that have a positive impact on their futures. These types of lessons can shift how young adults make their financial decisions, create a solid foundation for their future.

McCormick (2009) also dug into the theories of prior financial education of students but on a more personal level. Here, he noted the impact that parent financial decisions have on their

child's future financial decisions. While it is important for adults to understand personal finance because they are dealing with it directly, children are also heavily impacted by the financial choices of their parents. By proactively teaching children financial wellness, they will have a solid foundation for their futures instead of being influenced by the unknown financial education from their parents. It is stated that childhood financial literacy is much lesser known than those services offered to adults, as children are not directly dealing with finances on a daily basis. When creating financial literacy lessons for children, McCormick suggests focusing more on one topic at a time or a "teachable moment," as children will encounter various financial happenings at different points in their life. For example, when taking a child grocery shopping, have them keep track of expenses or do a cost comparison while in their store. Tackling this issue proactively and in transferrable ways, outside influences that may be negative could be counteracted by useful lessons through education.

#### **1.5.4.3 Attitude Toward Learning Financial Literacy**

A student's outlook on learning and financial literacy can have an impact on the acquisition of the important concepts of money management. This can hold true for any subject but difficult to have as a student because of lack of interest or difficulty of the material. A Swedish study looked at each participant's emotional attitudes and cognitive understanding of personal finance (Skagerlund, Lind, Strömbäck, Tinghög, and Västfjäll, 2018). This study found that individuals should have a positive outlook on numbers, including basic mathematics, in order to be financially healthy. Educational interventions that focus on this theory can be more successful in areas where previous financial education attempts have failed. Learning should not be dreaded by students but viewed as an opportunity to create a better future for themselves. Finance education students can

benefit greatly from this perspective, especially because they will face consumer decisions every day in their future as adults.

Not only is a positive outlook on learning important for obtaining financial skills, but within that, it is beneficial to identify negative behaviors that could affect one's spending habits and absorption of financial knowledge. Seuntjens et al. (2016) explored the topic of greed and adult spending habits and outlooks on financial literacy. In this context, greed was referred to as spending more each month than suggested, having more impulse purchases, and having lower self-control. These individuals had less awareness of finances and continued to want more, leading to higher spending and debt, with less money contributing to savings. It was noted, though, that there are some positive aspects to this type of greed, such as goal setting and generating more income. Essentially, greed can be a catalyst for debt. Making impulse decisions without thinking through the financial consequences can have long-term, negative effects. This paired with lack of financial knowledge could be a contributing factor to high debt rates. However, this could be counteracted with money management courses and positive attitudes toward learning financial literacy.

### **1.5.5 Principles of Teaching Financial Literacy to Adolescents**

According to the published literature, there are two key principles important for the teaching of financial literacy to adolescents, which are differentiation and prioritizing authentic content.

#### **1.5.5.1 Differentiation**

As with all classrooms, differentiation is needed to ensure absorption of content knowledge in the classrooms due to various student interest, learning styles, and prior education (Compen et

al, 2019). Teaching below a student's learning or interest level could leave the students with little new knowledge to use on their own, while teaching beyond their current state of financial awareness could be intimidating and less useful to students. This concept can be applied similarly in a financial literacy class. Many studies show that teaching finances, in particular, prove to be more successful when the approach is tailored to the students. A review of literature showed that a student's learning goals should be considered along with their individual financial capability and the teacher's pedagogical skills when preparing for a finance course (Compen, De Witte, and Schelfhout, 2019). While this review reported the lack of research linking success in finance for students with specific professional development lessons for teachers, it does bring to light the basics of managing a classroom and accommodating every student.

There are a lot of factors to consider when creating content to benefit many different students, like race, ethnicity, socio-economic status, and personal interest. The primary factor believed to have the highest impact on student engagement and knowledge attainment was taking into account the lifestyles and backgrounds of the participating adult students (Chang & Lyons, 2007). This differentiation made the content immediately relatable and usable for those who completed the course. The authors also noted that success could be attributed to how the lessons were delivered. Teachers relayed content through activities and lectures that were of the learning and interest levels of the students. This made it more enjoyable to participate, resulting in higher attainment of financial literacy. While this study was completed with adult finance students, these same strategies be equally beneficial to high school students. Racial/ethnic diversity should not be disregarded in differentiation, as there is a connection there between race and financial stability among families (Han, Barnes, Leurgans, Yu, Bennett, and Boyle, 2020).

Various instructional methods can be used for financial literacy and should be based on the students' age, needs, and preferences. Lesson delivery is an important aspect to consider, especially with teaching different age groups. Older high school students generally want to be treated as adults, while this approach may not be as successful with younger students. Borden, Serido, and Collins (2008) conducted a study with college students where the finance course was taught via a short seminar. Because college students attend class often, with work outside of the classroom, they enjoyed this seminar approach because they were able to relate most or all the content to their current financial situations. Successful financial education does not require massive amounts of studying, class work, or lesson extensions in order to be impactful to students (Kaiser & Menkhoff, 2017). Through the results of this study, it was concluded that financial literacy cannot be taught blindly by teachers. Lessons must be thought out, differentiated, and relevant to the students' lives. Various delivery methods were tested to come to this conclusion, and higher rates of success have been traced back to teaching basic budgeting skills instead of more specific topics, like the stock market or money market accounts (Kaiser & Menkhoff, 2017).

#### **1.5.5.2 Real World Tasks**

While creating differentiated classroom experiences, it is also important to consider how the students can use the content outside of school. Best practices for teaching money management have been studied, and a common theme among this research has been one word: authentic. Lessons that fall into this category are ones that are easily transferrable to life outside of the classroom and can be implemented right away or in the near future.

To study the impacts of real-world tasks incorporated into financial literacy lessons, Sawatzki (2017) created a course that involved simulations of three main tasks: buying bread, playing laser tag, and catching the bus. Each of these activities had their own smaller tasks, like

calculating the cost of laser tag tickets for a group of people or deciding on a bus pass based on your work schedule and budget allotments. Students were applying basic mathematics skills to solve problems that they would encounter in the real world. While some of these student participants have not personally completed these tasks on their own yet, their families have, which made this lesson successful and relatable.

Another study was completed with different simulation activity which placed students in the stance of business, sales, and investing. Henry, McCormack, and Saeed (2019) used this activity to test the effectiveness and growth of students' financial knowledge from the beginning to the end of the program. Students practiced negotiations and risk management while working in groups and sharing ideas to complete the task. The authors concluded that if a simulation activity is properly designed, student take-aways from the experience will go beyond the explicit lesson. In this study, aside from learning financial components, students were able to enhance their 21<sup>st</sup> century skill and real-world application. Activities like these simulations can get the students as close to the real situation as possible. Even though students may be years away from deciding on a bus ticket or investing their income, this practice provided hands-on experiences that students will be able to apply later in life.

### **1.5.5.3 Just-in-Time Instruction**

Fernandes, Lynch, and Netemeyer (2014) analyzed over two hundred studies to narrow down the best approaches for teaching financial literacy in a high school classroom. The goal of reviewing these approaches is for these students to eventually report being financially successful adults. Instead of teaching basic budgeting skills or specific topics, it is suggested that teachers use a “just in time” approach and teach the financial knowledge as the students need it. They would be learning as they go rather than acquiring all the finance curriculum lessons all at once. This

review article also suggested teaching soft skills rather than direct budgeting lessons. For example, instead of teaching about stocks and bonds, one could educate students on risk and reward or organization and planning ahead.

### **1.5.6 Summary**

Best practices for teaching financial literacy to adolescents and adults have been explored through previous studies and methods. While some of these studies were conducted in countries outside of the United States, their findings are still applicable to the United States' school system and lifestyle. Students' perceptions of finances and healthy living are a reflection of their parents' behaviors, attitudes, and decisions, as well as lifestyles they see depicted in the media. Foundational concepts of effective financial literacy lessons for adolescents include immersive and hands-on experiences. Student emotion, lifestyle, interest, and other personal factors must be considered when designing an effective financial literacy program. When being delivered, these factors must also be examined to differentiate the content to make it as transferrable as possible to students. Focusing on what the students already know, while understanding their academic levels in math and soft skills, and combining that with financial concepts that are most relevant to them now or in the very near future, could be an effective approach. These studies support that students learn this content best when it is tailored to the previous financial knowledge of each student, as personal backgrounds play a part in interest and prior understanding and experiences. The best approach is to make the lessons as transferrable as possible to students and differentiated to their personal goals.

Financial literacy courses and simulations show positive results across all of these sources, so it is validating to continue pursuing this problem of practice while taking my school community,



culture, and students into account. Since a number of financial concepts are years away from being applicable for high school students (e.g., loans, buying a house, retirement), it is suggested that lessons should focus on soft skills rather than the actual financial concepts. Problem solving and critical thinking are skills that serve a potential avenue for making connections to real-world events and decisions in the future. It is warned that teachers should refrain from teaching “confidence” over content. Students who feel overly confident in their finances are less likely to seek assistance and more likely to partake in riskier behaviors. Moving forward, it is important to increase students’ exposure to financial literacy given the positive impact it can have on their future financial literacy knowledge and skills.

## 2.0 Theory of Improvement

### 2.1 Theory of Improvement

The problem of practice is that *students graduating Greensburg Salem High School do not possess the financial literacy knowledge and skills to become successfully independent adults*. A theory of improvement, as defined by Perry et al (2020), “responds to the question ‘*What will work to improve the problem?...[and] describes how the scholarly practitioner will move from problem analysis to actually tackling the problem during the testing phase* (p. 90). The goal of the theory of improvement is to increase financial literacy knowledge and skills in GSHS students prior to graduation. Upon completing the change ideas, students will understand the need and usefulness of acquiring financial literacy life skills as they become independent adults, and teachers will be more prepared to educate students on these topics. The Driver Diagram (**Appendix A**) highlights the details for this theory of improvement, including the aim, primary and secondary drivers, and change ideas.

With the recently updated requirement that students will be taking financial literacy prior to graduation from GSHS, allowing for broader access and availability, improvement can focus on implementing the best teaching practices and student learning experiences. There are several indicators that will show improvement in the curriculum, student knowledge, and teacher buy-in for these changes at GSHS. Improvement will be measured by growth in knowledge from students enrolled in Financial Literacy. Student evaluations of understanding and effectiveness will also gauge the success with curriculum and classroom environment modifications and additions to using Next Gen Personal Finance (NGPF) in the classroom. If financial literacy teachers are aware

of best practices and activities to use during different units in the curriculum, it is predicted that students will not only learn more about personal finance but gain skills and knowledge to carry with them throughout the rest of their lives.

## **2.2 Driver Diagram**

### **2.2.1 Aim Statement**

*By the 2025-2026 school year, students at Greensburg Salem High School will graduate with the financial literacy knowledge and skills to live successfully as independent adults.*

### **2.2.2 Primary Systems Drivers**

Evaluating what impacts the aim, we have three primary drivers. Primary systems drivers “[identify] where within the system key leverage points exist as working areas for improvement” (Perry et al, 2020, p. 92). The *classroom environment* is a focus because it is a foundational piece for students to achieve proficiency and retention in personal finance knowledge. Enhancing students’ financial literacy skills is also primarily affected by *teacher buy-in and enthusiasm*. If the educators are not enthusiastic about this required content and if they are not willing to learn and implement the newest and best information about personal finance and money management and pedagogical approaches for teaching this content area, students may not hold onto important finance information as it is needed throughout adulthood. Additionally, to graduate young adults with life skills to live successfully as an independent, students must have *access and availability*

to a financial literacy course. With little access to this education, fewer students will be exposed to lessons and activities that prepare them for a successful future.

### 2.2.3 Secondary Systems Drivers

Secondary systems drivers “[specify] what is required to change to achieve outcome... [and] identifies actionable approaches, places, [and] opportunities” (Perry et al, 2020, p. 92).

*Classroom Environment.* There are two secondary drivers that inform the primary driver of the classroom environment. The learning environment is not just the physical set-up of the room, like seating arrangements or posters on the wall. *Effective curriculum* impacts the classroom environment by providing transferrable content and realistic expectations. As a secondary driver, good financial literacy curriculum will create a solid and meaningful path for students to follow as they acquire life skills. Along with good curriculum are the *classroom activities*. These impact the classroom environment as a secondary driver, also, because they go hand-in-hand teaching standards and meeting objectives. With enjoyable and impactful classroom activities that meet the needs of all students, the environment in the classroom will be one that fosters student learning and engagement to achieve the aim.

Teachers are also secondary drivers for classroom environment, as they are the biggest piece of the foundation. With *confidence to teach the topic of financial literacy* and passion for the content, educators will create an environment for learning. This also goes with the secondary driver of the teachers having *financial literacy skills and knowledge*. Acquiring this knowledge as a teacher will radiate onto the students in the financial literacy classroom.

*Teacher Buy-in and Enthusiasm.* The secondary drivers for this primary driver include *teacher confidence* and *financial literacy knowledge and skills*. Each year, there seems to be more

requirements and duties for teachers that implementing something new could seem daunting. Teachers of financial literacy classes must have enthusiasm for reaching the aim and improving the life skills education for students. *Teacher confidence in teaching financial literacy* will assist in the willingness to modify the current situation with financial literacy courses. If teachers are more confident in their subject area, it can be assumed that they will teach the topic with rigor and passion. *Teacher skills and knowledge on teaching financial literacy* is a secondary driver for teacher buy-in and enthusiasm, too, because knowing as much as possible about the topic and being trained effectively could make one feel more comfortable with teaching a classroom of students. Some of the most enthusiastic teachers would be the ones that not only know about financial literacy but have an eagerness for passing along these skills to high school students.

*Access and Availability of Financial Literacy Courses.* There are two secondary drivers here, with the first one focusing on *funding for the financial literacy curriculum and activities*. Despite there being free personal finance content available online, an increase in budget allotment for these classes would offer support for teacher training, having more qualified teachers, and greater access to financial literacy courses at GSHS. *Course enrollment* impacts course access, too, because it increases the students' exposure to financial literacy education, which can assist in meeting the overall aim to graduate students with financial literacy knowledge and skills.

#### **2.2.4 Change Ideas and Interventions**

Perry et al (2020) describe the change ideas and interventions as, “what is required to change to achieve outcome” and what “identifies actionable approaches, places, [and] opportunities” (p. 92). Below, I describe 4 potential change ideas, drawn from my theory of improvement.

*Update and Redesign the Curriculum.* There are so many topics under the financial literacy umbrella that it is difficult to narrow down the content into a nine-week course for high school students. Time should be taken to evaluate the most important pieces of information for high school students by looking at their interests, the most transferrable and relatable skills, and modern trends with personal finance. Currently, NGPF is used for GSHS Financial Literacy curriculum. This program was chosen because of its accessibility to teachers and students, ease of use for both parties, and that it has no cost to use. Lessons are flexible enough to be used in numerous settings and different teaching styles, like student-led sessions and games. NGPF is a great resource, but it has so many activities, lessons, and other content that much needs to be sifted through to make the most impact on students in a short amount of time. By keeping up with national and state finance education standards in FCS and Business Education, many steps need to be taken to create the best curriculum for students in this generation. At GSHS, ninth grade students will complete NGPF lessons in their required Financial Literacy class. Although some topics and skills taught in this course may not be used by these students for years, this age group was chosen due to ease of scheduling for ninth graders. Through this intervention, new lessons could be used and evaluated as a way to improve the current practices in the classroom. Updating and redesigning the curriculum will impact the teachers as primary drivers as well as secondary drivers of having a well-rounded curriculum and pedagogy. Additionally, improving curriculum will create a better learning environment in the classroom with enhanced learning opportunities and knowledgeable, confident educators. By having the most current curriculum, GSHS students will graduate with the skills needed for independency.

*Professional Development for Teachers on Financial Literacy Education.* As stated previously, the newly required Financial Literacy courses will be dispersed between the GSHS

FCS and Business Education teachers. It is common for these departments to not collaborate on curriculum due to time constraints and lack of similar classes. Now, by sharing this required personal finance course, it is important for all of the teachers in the FCS and Business Education department to be on the same page and streamline content and teaching practices so that all students at GSHS are receiving the same education, regardless of their teacher. Providing professional development to the financial literacy teachers would enhance the classroom activities and curriculum to provide a better learning experience for the students. It will also be beneficial for teachers, as receiving training for this subject area will increase confidence and knowledge to deliver to students. In turn, professional development will impact the primary drivers of classroom environment and teacher buy-in and enthusiasm. FCS and Business Education teachers will have the opportunity to learn the most current trends (i.e., online banking, peer-to-peer payment apps) in personal finance and teaching these topics. Additionally, basic teaching practices could also be a part of these professional development trainings. This will provide information for teachers to use all the resources possible to relate the information to their particular students in the best possible way. Teachers will also feel more confident in their ability to properly educate teenagers on personal finance. Students will benefit from the consistency and fluidity of the financial literacy course, as well as the significance and transferability of the content as a result of these trainings, which will assist in reaching the aim.

*Financial Literacy as a District Graduation Requirement.* As previously mentioned, this change idea will begin being implemented during the 2022-2023 school year as a graduation requirement for ninth grade students and all future students going through GSHS. With this in place, all students will be reached in the financial literacy classroom. This change has already

shown positive effects on the secondary drivers of classroom enrollment and funding for these courses and the primary driver of access and availability of financial literacy courses.

*Increase of the Financial Literacy District Budget Allotment.* Using the NGPF program is free for teachers and students. However, other costs should be considered now that Financial Literacy is a required course at GSHS. As more students add financial literacy to their schedules due to the graduation requirement, the district has adjusted budget allotments to allow for more spending for financial literacy courses. In order to accommodate the influx of student enrollment to the previously optional course, new teachers may need to be hired so that other course offerings are not disturbed. Additionally, outside resources, like games, literature, guest speakers, and general class materials will be needed to properly conduct this course. Training for teachers, like continuing education credits and professional development opportunities is an important factor, too, that should be considered when budgeting for Financial Literacy. An increase in the budget allotment for this course would be beneficial for the students, teachers, and district as they begin this journey toward preparing all students to be financially successful after high school

### **2.3 Improvement Systems Measures**

There are four improvement systems measures that are used to guide research and determine the effectiveness of change ideas in the driver diagram. In the subsequent sections, I detail potential systems measures that could be assessed to understand whether change is occurring in the system.



### **2.3.1 Process Measures**

*Process measures* “answer how the change idea is working...[and] if the change idea that [the practitioner] introduced is producing the results as they predicted” (Perry et al., 2020, p. 107). Process measures for the proposed change ideas can have many different forms. *Evaluating changes in the school district budget for the financial literacy course* can determine the level of support from the school district for this new graduation requirement for high school students. Acknowledging Financial Literacy and its importance in conversation, district policies, and budget adjustments will show that the system is changing toward reaching the aim. *Attendance and feedback from financial literacy teacher professional development opportunities* will reveal their effectiveness, as well, and any areas for improvement for this intervention. *Tracking student progress, retention, and interest* throughout the duration of the class can measure whether or not creating lesson plans and a scope and sequence for the financial literacy course is being done in the most efficient way.

### **2.3.2 Driver Measures**

*Driver measures* “let us know if the change is working to improve the system in progress...[and] serve as intermediaries between the change and the outcome” (Perry et al., 2020, p. 106). Driver measures, like *teacher confidence while navigating through the curriculum with students*, can help understand the impact of the change ideas. This will assist with evaluating teacher buy-in and enthusiasm. *Keeping track of the classroom activities and techniques* used will assist in creating the most ideal classroom environment. This will also assist in creating the best objectives for students in a financial literacy course while following necessary standards.

### 2.3.3 Outcome Measures

*Outcome measures* “help scholarly practitioners understand the performance of the system as a whole and whether or not the change they introduce is producing an impact at the systems level. [They] are directly related to the aim statement (Perry et al., 2020, p. 104). A way that the outcome can be measured for the change ideas would be *to evaluate and analyze the financial literacy skills of the students before, during, and after the completion of the course*. Results from these exams will show improvement from learning and areas of need as the program develops. *Receiving feedback from GSHS graduates* who have had the opportunity to use content from their financial literacy class in the real world would be another way to measure if the aim is being achieved.

### 2.3.4 Balance Measures

*Balance measures* “help the scholarly practitioner see if the change they have introduced has in fact been an improvement for the whole system or if it has cost the system” (Perry et al., 2020, p. 108). Implementing these change ideas helps to achieve the aim of students graduating with independency skills, but it can have an impact on the many other working parts of GSHS. *Tracking the changes within other courses at GSHS*, like enrollment or student interest, could reveal any negative impacts that increasing student access and availability might have on other content areas. Also, keeping an eye on these changes can show effects of how more teachers will be needed to teach financial literacy now that it is required for graduation, which will directly impact the course options available for high school students. The possibility of teachers feeling burnt out or encumbered by having another class added to their course load of classes to teach high

school students. *Student ability to handle the newly required course and workload* on top of other classes in their schedule is another potential balance measure worth examining.

## 2.4 Intervention Description

NGPF is a free online curriculum for financial literacy education (NGPF, 2022), has been used at GSHS for the past few years. It offers many different forms of lesson delivery and activities for the most important topics, like credit cards, basic money management, and investing. With new teachers taking on financial literacy classes in 2022-2023 due to the new graduation requirement at GSHS, this will be the first time that some teachers will be using NGPF. The previous literature suggests that simulations, hands-on activities, and just-in-time instruction are a few proven ways to increase financial literacy knowledge and understanding in high school students. Using this evidence, the change idea is to implement a 5-session simulation activity that incorporates transferrable and relevant information in a way that meets the learning needs, preferences, and interests of the students at GSHS.

The Budget Project is a simulation activity that I created to immerse students in making independent adult decisions as realistically as possible for a high school student. The Budget Project guides students through financial decision-making in the areas of housing, transportation, insurance, savings, food, and miscellaneous expenses. This project leads them through calculating their net income, suggested budget allotments, the job search process, living arrangements (e.g., rent, utilities, transportation), paying bills, insurance coverage, medical expenses, and other factors that adults face in their monthly budgets. Packets were distributed to students to guide them through the simulation (**Appendix B**). Various equations, hyperlinks, and other resources were

provided for students to assist them through the project. Internet access was necessary for efficiency and effectiveness of delivery.

The class participating in the intervention completed the Budget Project instead of usual NGPF activities. The financial literacy teacher of the course was given a facilitators guide (**Appendix C**) prior to this week-long Budget Project to follow and implement it as intended. I was in the room to assist, as needed, as the teacher guided students through the project. This project was administered face-to-face by the course instructor to one classroom of 21 Financial Literacy students. The simulation was delivered over the course of 5 continuous school days and lasted approximately 65 minutes each day. Students were to master each part of the Budget Project before moving on, as each section used prior knowledge from the Budget Project to navigate through the standards and essential topics of budgeting. All of these details were outlined in the facilitator's guide.

## **2.5 Study Setting and Sample**

Two financial literacy courses at GSHS were a part of this study: a control classroom and an intervention classroom. The control classroom followed the standard adopted curriculum. The role of the teacher in the control classroom was to use the NGPF curriculum as directed by the school district for the budgeting unit as normal, choosing the activities and lessons that they saw fit over the 5 sessions. The intervention teacher was chosen due to willingness to participate as well as no scheduling conflicts so that I could be present to observe the intervention during class. The intervention classroom took part in the Budget Project intervention and I supported the teacher in implementing the Budget Project in place of the NGPF activities in their classroom.

There were 39, students enrolled at GSHS in financial literacy courses who participated in the project, with most of them current ninth grade students. There are approximately 1000 students in the high school, but a smaller population was utilized for this evaluation. Twenty-one students participated in the Budget Project in their financial literacy course and 18 students were recruited from a separate financial literacy course to serve as the control group. All students enrolled in these classes and matched the demographic makeup (e.g., race/ethnicity, income level) of the population of students at GSHS.

These participants and classrooms were selected because they are in my place of practice that I have direct influence on daily. Freshmen students have not had academic exposure to financial literacy curriculum thus far in their schooling, and they are at the age where they might begin to apply for jobs, plan their futures, and open bank accounts. This is good timing for students of this age because they can move forward with future readiness while having information on navigating their finances. This is the first year teaching Financial Literacy for many of these educators at GSHS. However, expertise from teaching Business Education provided feedback for determining the usefulness of the Budget Project, areas of need for future professional development, and overall feelings of confidence and buy-in to adapting to changes in the Financial Literacy curriculum at GSHS.

## **2.6 Inquiry Questions and Predictions**

Inquiry question 1: *How is student financial literacy knowledge impacted by a simulation activity compared to the adopted Next Gen Personal Finance curriculum and teaching practices?*

Inquiry question 2: *What are the teacher's perceptions of implementing the simulation activity compared to the standard curriculum/practices?*

Inquiry question 3: *Was teacher able to implement the Budget Project simulation activity with high levels of fidelity?*

Predictions for this intervention were that students participating in the Budget Project would have more well-rounded knowledge and retention of best money management practices in comparison to those students participating in the NGPF activities (control group). This is due to the immersive and transferrable nature of the Budget Project process. This activity was also adapted to the needs of the GSHS students more so than a general activity that has been created by experts from all over the country. For the teacher involved, I predicted to receive positive feedback about the Budget Project itself, including the feasibility of implementation and utility for teaching budgeting in Financial Literacy. Analyzing the fidelity of the teachers will help with understand the ease of use and delivery of the project as well as crucial aspects of the Budget Project that cannot be left out. At the conclusion of this project, data can assist in helping teachers grow professionally while teaching these topics, improve the simulation activity, and find better ways to teach Financial Literacy to GSHS students.

## 2.7 Methods and Measures

### 2.7.1 Measures

#### 2.7.1.1 Fidelity Observation

Fidelity and consistency with the Budget Project implementation are the key to its success and effectiveness with the Financial Literacy students. **Appendix E** includes the fidelity checklist that I used to rate the delivery and implementation of the Budget Project by the financial literacy teacher during each of the 5 class sessions. Essential elements for implementing the Budget Project with high fidelity included teaching the appropriate content, providing opportunities for students to ask questions while giving adequate feedback, ensuring that students meet the standards, differentiating and reteaching when necessary, and fostering growth with budgeting skills. The checklist included 7 items assessed on a rating scale of Yes (=3), Partially (=2) and No (=1) with a space for 'not applicable' and to write additional comments. Prior to the intervention, I went over the checklist and Budget Project Facilitator Guide to remain transparent with clear objectives and expectations. This took place in a private setting as a one-on-one meeting.

#### 2.7.1.2 Student Survey

Both the pre and posttest (**Appendix F**) included the same content questions as a way to track student growth in knowledge and effectiveness of the Budget Project. These questions are designed to mirror the Essential Questions of the curriculum, which are written out in the Facilitator Guide (**Appendix C**). Growth was focused on content knowledge and retention of the main topics of budgeting, as depicted through National FCS Standards, PA Career Education and Work Standards, and PA FCS Standards (NASAFACS, 2018; Pennsylvania Department of

Education, 2003, 2006). Survey items focusing on content included 15 multiple choice type questions, including, “*What should be considered when searching for housing?*” and “*Explain the difference between fixed and flexible expenses.*” The posttest consisted of the same 15 content questions with 3 additional open-ended questions and 3 Likert scale items to solicit feedback about their experience with the budgeting unit. These Likert scale statements were, “*I have the skills to create my own personal budget,*” “*I have the skills to stick to my own personal budget,*” and “*I feel more prepared to make financial decisions after this budgeting unit,*” which had options of “*strongly agree,*” “*agree,*” “*neutral,*” “*disagree,*” and “*strongly disagree.*” Answers of “*strongly agree*” and “*agree*” were collapsed to “*agree*” and answers of “*disagree*” and “*strongly disagree,*” were collapsed to “*disagree.*”

### **2.7.1.3 Teacher Interview**

After the completion of the Budget Project intervention with the financial literacy teacher, the educator participated in an interview that will evaluate the intervention from the perspective of an educational professional in the finance field. This interview followed a semi-structured interview guide (**Appendix D**) and inquired about their perceptions of the effectiveness of the Budget Project activity, suggestions for improvement, and the overall experience for both students and the teacher. Select data from the survey and fidelity observation were also shared with the intervention teacher at this time.

### **2.7.2 Data Collection Procedures**

The University of Pittsburgh Institutional Review Board (IRB) approved all study protocols and materials prior to beginning any study activities (STUDY22120115). Students



participating in the intervention and control classrooms completed a baseline student survey (pretest) before starting the Budget Project or standard curriculum during class time. The student survey was distributed and completed through Microsoft Forms, as the GSSD provides a laptop and Office365 account to each teacher and student. This ensured easy access and completion as well as a way to easily track and assess the data. The primary investigator completed the observation checklist during the Budget Project implementation during each of the 5 sessions. Students participating in the intervention and control classrooms completed a follow-up student survey (posttest) after both groups completed their version of the budgeting unit (Budget Project and NGPF Budgeting Unit; five, 65-minute class sessions). The primary investigator interviewed the Financial Literacy teacher that implemented the Budget Project after the unit is completed. This interview took place in a private meeting room at GSHS.

### **2.7.3 Analysis Plan**

Data from students, teachers, and the observation form was compiled to form the data record. Survey data was collected as numerical scores from questions 1-15 as 1 point for correct and zero points for incorrect. Scores from the pretest were compared with those from the posttest to determine growth after the completion of the Budget Project. If growth is at least 20% collectively from the class between the pre and posttest, the intervention was deemed successful. This was chosen because 15-30% growth is the best practice we follow at GSHS to track student learning objectives for the instructor's yearly evaluation for the state. Opened-ended posttest questions were coded for categories and patterns in the data and summarized qualitatively. Both the questions with the Likert scale and open-ended responses were descriptively compared between the intervention and control groups.

Transcript from the recorded interview were coded for themes and patterns in the data using content analysis methods (Mertens, 2015). Open coding included feedback and recommendations of the instructor and practicality of the use of the intervention/simulation activity. Since this educator had experience with both the NGPF curriculum and the Budget Project, their perspective in comparing both curricula was helpful for future implementation, like ways to improve the project and creating more effective learning experiences for students.

Fidelity checklist data was summarized by calculating the mean scores for each item then creating a total score by summing them together. A score ranging from 19-21 was considered high fidelity. A score of 15-18 was considered moderate fidelity, and scores 14 or less was low fidelity. Open-ended observation comments were qualitatively summarized to help determine any modifications to the project in order to create easier execution for future.

## 3.0 Results

### 3.1 Implementation Fidelity

In my observations of the Financial Literacy teacher's implementation of the Budget Project, the teacher scored a 20 out of 21 overall points. Based on pre-established the cut-points, the Financial Literacy teacher administered the Budget Project with high fidelity. Of the seven components of focus during this observation, six of them were scored as a 'Yes.' Specifically, the teacher provided opportunities for students to ask questions, provided positive and constructive feedback, and ensured that students met standards and objectives before moving on. Additionally, the teacher fostered growth mindset environment and differentiated instruction and retaught topics, as needed, per individual student. The single component that received a score of 'Partially' was *'Teach the appropriate content for each section of the project.'* During the observation, I noted that a few topics within each section could have been elaborated on more during implementation of the Budget Project. For example, when explaining how to purchase or rent a house, more details could be given on types of housing, like studio apartments, mortgages, and living in urban versus suburban areas.

### 3.2 Student Survey Results

**Table 1** presents the average pre and posttest scores and the calculated average growth for both the intervention group and the control group students. Of the n=21 students who participated

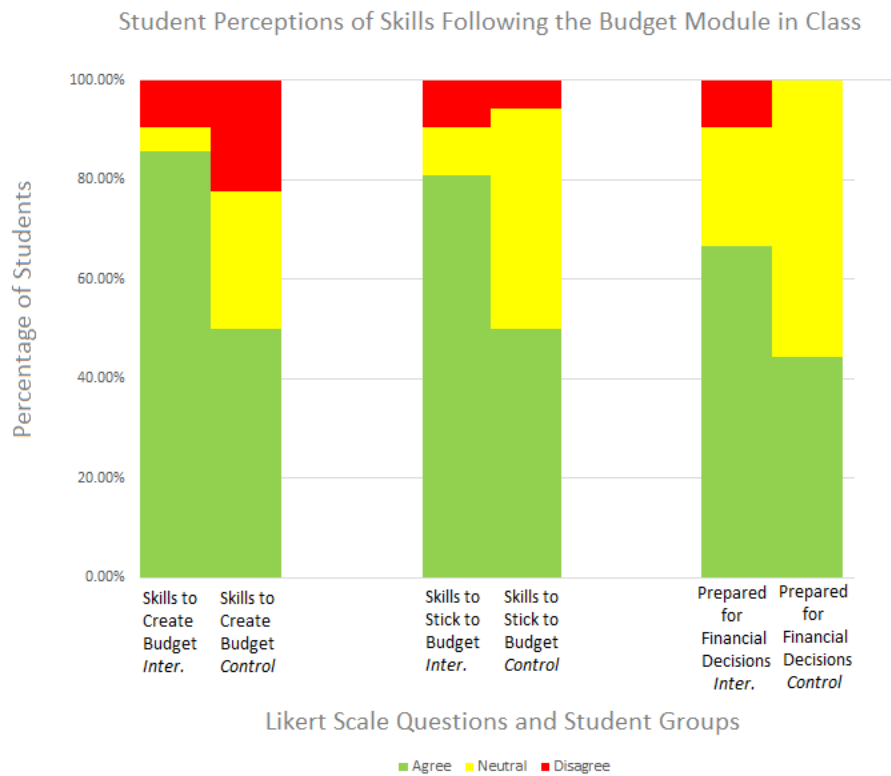
in the intervention, the average score on the pretest was 7.7 out of 15 content questions. The control group (n=18) scored an average of 7.2 on the pretest. Following the intervention, the average score on the posttest was 11.2 out of the 15 content questions in the intervention group, which shows a 38.74% growth in content knowledge. Looking at individual data, 15 of the 21 students (71.4%) met or exceeded the goal of 20% growth in content knowledge points between the pre and posttest. The control group’s average posttest score was 7.7 points, showing a growth of 5.81% in content knowledge. Individual data shows that only 5 of the 18 control students (27.7%) met or exceeded the goal of 20% growth in content knowledge points between the pre and posttest.

**Table 1. Mean (SD) and % Correct Knowledge Score & Growth (% Change) for Intervention and Control Students**

Variable	Intervention (n=21)	Control (n=18)
Pretest Score, mean± SD	7.7± 2.6	7.2± 1.2
% correct	51%	48%
Posttest Score, mean±SD	11.2± 2.0	7.7±2.2
% correct	75%	51%
Student Growth, % change	38.7%	5.8%

**Figure 1** includes the results for the Likert-type questions that were included in the posttest for the intervention and the control group. When reflecting on the statement “*I have the skills to create my own personal budget,*” 85.7% of intervention group agreed that they have the skills to create a personal budget while 4.8% reported feeling neutral and 9.5% disagreed. In contrast, only 50.0% of the control group agreed that they have the skills to create a personal budget, while 27.8% reported feeling neutral and the remaining 22.2% of students disagreed. Of the 21 intervention students, 81% agreed to the statement “*I have the skills to stick to my own personal budget,*” 9.5%

reported neutral and 9.5% disagreed. Comparatively, only 50% of the control group agreed that they have the skills to stick to their own personal budget, 44.4% reported feeling neutral, and 5.6% disagreed. The majority (66.7%) of the intervention group agreed that “*I feel more prepared to make financial decisions after this budgeting unit,*” 23.8% were neutral, and 9.5% disagreed. In contrast, only 44.4% agreed and 55.6% reported neutral.



**Figure 1. Student Perceptions of Skills Following the Budget Module**

NOTE: Response options for ‘strongly agree’ and ‘agree’ were collapsed as ‘agree’ and ‘strongly disagree’ and ‘disagree’ were collapsed as ‘disagree.’

### 3.3 Posttest Open-ended Questions

At the conclusion of the posttest, both the intervention and control group students were asked the following open-ended questions: “*What was your favorite part about the budget unit?*”;

*“What was your least favorite part about the budget unit?”*; and *“Any other comments you would like to share about the budget unit?”* While there were some similarities in the answer between the two student groups, vast differences separated the answers between the intervention group and the control group.

### **3.3.1 Intervention Group**

Of the n=21 students in the intervention group who participated in the Budget Project, n=11 wrote that their favorite part was searching for housing and learning about buying, renting, and budgeting for these particular living expenses. There were n=7 students who reported feeling this way about transportation and searching for and managing these expenses. Additionally, n=7 students recorded that their favorite part was how much this project related to real life, with one student writing how it was helpful *“being able to apply it to the career that I want to go into,”* and another stating they *“[learned] how much things cost in the real world.”*

For the second open-ended question, there was a resounding response for students disliking the mathematics component used throughout the whole project and determining costs for student loans and other living expenses. While two students reported that their least favorite part of the Budget Project was the whole project itself, there were n=5 students who did not have a least favorite part. One mentioned, *“[I did not like the] math, but I get why we did it.”*

The final open-ended question yielded n=4 viable responses. The responses included, *“It was a really good project, and it can be used to plan possible career options,”* and *“It was fun...and seems really useful in the future.”*

### 3.3.2 Control Group

Students who participated in the NGPF Budgeting Unit responded to the same open-ended questions. When asked to write about their favorite part of their budgeting lessons, n=9 students reported feeling more prepared for adulthood and that this information could be useful after graduation. One student stated the information this was, “*stuff they could actually use,*” and another stating, “*I feel more prepared for being an adult.*” There were 4 students who did not have a favorite part or reported disliking the whole unit.

Referring to their least favorite part of the NGPF Budgeting Unit, n=7 students wrote that there were a lot of assignments and paperwork. While n=2 students did not like the entire experience of this unit, n=2 other students wrote that it was useful but difficult with one stating, “*some of it was hard but I know I will need it someday.*”

Comparing the responses, n=19 of intervention students reported having a positive experience with the Budget Project. Of those in the control group, n=13 of students reported enjoying the NGPF Budgeting Unit. Based on student responses, the NGPF unit as taught by the control Financial Literacy teacher yielded more assignments and a test while the Budget Project included more calculations and math. While there were elements of both the Budget Project and the NGPF unit that students did not prefer, like calculations and assignments, students in both groups felt like these experiences have helped to prepare them for adulthood.

### 3.4 Teacher Semi-Structured Interview Results

Following the conclusion of the Budget Project with the intervention teacher and students, an interview was conducted that focused on the usefulness of the project, comparison to the NGPF Budgeting Unit, ease of use, and future implications of the Budget Project. This interview lasted approximately 20 minutes and was transcribed, followed by thematic, flat, open coding. **Table 3** includes the themes, core categories, and category descriptions identified through the analysis process. The three overarching themes Strengths of the Budget Project, Shortfalls of Next Gen Personal Finance, and Recommendations for Improvement, are discussed in detail below.

**Table 2 Themes, Categories, and Descriptions for Teacher Interview Data Analysis**

<b>Themes</b>	<b>Core Categories</b>	<b>Category Description</b>
<b>Theme 1: Strengths of the Budget Project</b>	<ul style="list-style-type: none"> <li>• Positive student experiences;</li> <li>• Positive teacher experience</li> </ul>	<ul style="list-style-type: none"> <li>• Engaging and applicable to real life tasks</li> <li>• Easy to facilitate and implement</li> </ul>
<b>Theme 2: Shortfalls of Next Gen Personal Finance</b>	<ul style="list-style-type: none"> <li>• Not relatable to all students</li> <li>• Teacher facilitation not necessary;</li> </ul>	<ul style="list-style-type: none"> <li>• Not easily relatable, engaging or personalized for all students</li> <li>• Could easily be provided to students as independent work without teacher facilitation</li> </ul>
<b>Theme 3: Recommendations for Improvement</b>	<ul style="list-style-type: none"> <li>• Appropriate for older high schoolers;</li> <li>• Career exploration;</li> <li>• Summative project</li> </ul>	<ul style="list-style-type: none"> <li>• Best for Junior and Senior students instead of Freshmen</li> <li>• Implement a career exploration component;</li> <li>• Use at end of semester as it incorporates all topics</li> </ul>



### 3.4.1 Theme 1: Strengths of the Budget Project

According to the Financial Literacy teacher who had taught budgeting using both the NGPF curriculum and the Budget Project intervention, the Budget Project was engaging to the students. The teacher noted that students were able to relate to the project on their own level, which kept them excited and involved throughout the duration of the project. The teacher stated, “*They were excited to do this project... They were talking about things [that] a normal eleventh grader might not be talking about,*” like savings accounts, housing preferences, and car insurance. In addition to this, the teacher observed that students were able to easily relate to the concepts of the project, as it was adaptable to each individual student’s living situation and future plans. This project was found to be engaging and applicable to real life tasks. It was stated that GSSD is a “*special socio-economic area,*” where there is a high poverty rate with wealthy families dispersed throughout the district. The teacher commented that the project could be relatable to any of the students in the district, regardless of their socio-economic status.

When asked to rate the ease of the implementation from 1 to 10, with 10 being the easiest to implement, the teacher initially gave the Budget Project a score of 10. He then said that if the project was handed to students to complete on their own without a lot of preparation, it is doable, but “*students wouldn’t get a lot out of it.*” However, with a little bit of preparation by the teacher prior to implementing the Budget Project, like understanding the flow and additional context to be taught throughout the project, the ease of use would be scored an 8.

### 3.4.2 Theme 2: Shortfalls of Next Gen Personal Finance

Because this teacher had previously taught the NGPF curriculum as a Financial Literacy teacher, the comparison between the Budget Unit for this curriculum and the Budget Project were discussed. While it is an “*expansive curriculum*,” that covers many important topics in Financial Literacy, according to the interviewed teacher, there are some deficiencies that could leave some learning gaps for students. In their opinion, there were two main areas that were shortfalls of NGPF. The first mentioned was the lack of personability or adaptability of the curriculum. As stated in the interview, “*I think that it needs a lot more personalized for the students...it’s very individual. There’s not a lot of whole-class work or collaboration. There’s not a lot of discussion.*” It is not easily relatable to all students.

The process of the NGPF curriculum in each unit as described by the Financial Literacy teacher consists of mini lessons within each unit where students complete a Nearpod, which may contain videos and websites to explore, then a project or assignment, followed by some reflection questions or wrap-up activities. With this in mind, the interviewed teacher’s second stated shortfall of NGPF is that it does not require teacher engagement. The activities and lessons are self-explanatory, leaving the opportunity for teachers to have students work individually without the need for class discussions or lessons. The teacher stated that the NGPF curriculum does not quite align with GSSD’s motto of “Child First, Engagement Always” because “*there’s no reflection, there’s no discussion...between different students...where [the] actual learning happens.*” In other words, it is not necessarily an engaging curriculum unless the teacher puts in the effort.

### 3.4.3 Theme 3: Recommendations for Improvements

With Financial Literacy as a required course for graduation for GSHS, most of the students in these courses are in ninth grade. According to the interviewed teacher, the Budget Project may not be the best option for this age group. The teacher stated, “...*most of those kids, they don't have jobs...they've never seen a paycheck yet. They just got out of Middle School...I don't think that students can comprehend that true meaning of money until they are Juniors.*” Based on the teacher’s experiences, observations, and professional opinion, it is suggested that the current Budget Project be offered to students in eleventh and twelfth grades instead of younger students in ninth and tenth grade, as the older students have had the opportunity to have more experiences with money in the real world.

Because the project starts with students finding a starting salary for their potential career, this Financial Literacy teacher had students use PA Career Zone (a website that offers students the opportunity to discover interests and careers through self-assessments, create resumes and cover letters, and explore post-secondary information along with many other tools for high school students [PowerSchool Group LLC, 2023]) to take assessments and explore possible career options and salaries before beginning the Budget Project. This It was suggested to, “*expand on the career exploration*” using PA Career Zone because, “*that allows us to tailor to them even more with their interests.*” It was noted that students would be even more engaged if they feel confident about their career decision while going through this project.

Finally, the teacher recommended that the Budget Project be used as a summative, end-of-the-course project, as it incorporates all units from throughout the grading period, like taxes, savings, and different types of loans. The intervention teacher stated, “*it allows everything to come to this beautiful conclusion, and it's a final [project] that isn't...crazy difficult. It allows students*

*to do some practical math and use practical skills to create a budget. It is just a great way to end this course.”*

## **4.0 Learning and Actions**

### **4.1 Main Findings**

The following section details the main findings from the current inquiry project, organized by the inquiry questions that guided my dissertation in practice.

#### **4.1.1 Findings Related to Inquiry Question 1**

The first inquiry question was: *How is student financial literacy knowledge impacted by a simulation activity compared to the Next Gen Personal Finance curriculum and teaching practices?* Based on the results of the student pre and posttest survey, students showed a higher growth rate after participating in the Budget Project, a simulation activity, in comparison to those students who completed the NGPF Budgeting Unit. More students from the intervention group reported a positive experience than those of the control class. Overall, more students in the intervention group felt more prepared to create and stick to a budget compared to the control group. This trend is the same for students feeling more prepared to make financial decisions. Regardless of the comparisons, both groups did report understanding the usefulness of the assignments and the importance of learning Financial Literacy.

There is evidence that student learning and knowledge will extend beyond the classroom if a simulation activities are included in a Financial Literacy classroom (Henry, McCormack, and Saeed, 2019). This relates directly to the current inquiry project and provides evidence of the usefulness of simulation activities that allow student to interact with real-life scenarios.

furthermore, Fernandes, Lynch, and Netemeyer (2014) wrote about “just-in-time instruction” and that teaching students Financial Literacy skills as they are needed may be a better approach than teaching high school students about mortgages and retirement. This approach may be particularly suitable for participating ninth grade students, as some of them may have less familiarity with the relevant scenarios, like having a job.

#### **4.1.2 Findings Related to Inquiry Question 2**

The second inquiry question was: *What are the teacher’s perceptions of implementing the simulation activity compared to the standard curriculum/practices?* The teacher interview yielded themes surrounding the strengths of the Budget Project, shortfalls of NGPF curriculum, and areas of improvement for future use of the Budget Project. Overall, comments were positive for the Budget Project, as it was engaging for students and initiated different discussion topics about budgeting and future decision making and planning. The Budget Project seemed to be a better fit for the unique socio-economic status of the GSSD. The NGPF Budget Unit, while easier to implement because it does not require preparation or much teacher-student interaction, does not provide the best learning experience for all students. The teacher noticed more discussion and application amongst students who completed the Budget Unit than the teacher’s past students who complete the NGPF Budgeting Unit.

According to a 2019 review of literature, goals of student learning should be intermixed with their personal financial capability (Compen, De Witte, and Schelfhout, 2019). The pedagogical skills of the teacher should also be considered when preparing for a finance course. This highlights the downfalls of NGPF, as it is a universal curriculum that is not tailored to the variety of students that may partake in the lessons and activities. The Budget Project gave students

the opportunity to explore their own interests and follow their personal choices, making it more differentiated for all students, which aligns with recommendations from the literature.

#### **4.1.3 Findings Related to Inquiry Question 3**

The third inquiry question was: *Was the teacher able to implement the Budget Project simulation activity with high levels of fidelity?* The Financial Literacy teacher was able to implement the Budget Project with high fidelity. Potential contributors to this high level of implementation fidelity include a facilitators guide and meeting where they were oriented to the guide and given the opportunity to ask questions and ensure understanding prior to the start of the intervention. This was helpful to the understanding of expectations and proper implementation prior to the Budget Project. Zawacki et al. (2018) completed a study of implementation fidelity among professionals in autism support classrooms. Training was provided to staff members in autism support classroom rooms followed by classroom observations using FaceTime®. Because there are many and ever-changing trainings and skills needed for these professionals, Zawacki et al. stressed the importance of professional development for staff and frequent monitoring of staff to ensure quality support of students. Live and recorded video of teachers in their classrooms can assist in the efficiency of monitoring implementation to ensure quality education for students. Evidence from the observations in the current project can lead to more practical training and support for teachers in the future.

## 4.2 Impact of the Change Idea on the System

Looking at the Driver Diagram for my theory of improvement, the Budget Project intervention acted on the change idea of redesigning and updating the curriculum. While the Budget Project only replaced one of the many units that make up the required Financial Literacy course at GSHS it was a trial of this change idea to work toward the overall aim statement of equipping GSHS graduates with financial literacy knowledge and skills by the 2025-26 school year. The Budget Project did in fact reveal that it had a positive impact on the secondary driver of classroom activities based on the results of the student pretest and posttest as well as the teacher interview. Both reported positive feedback of engaging activities that are relatable to real life. This connects directly with secondary driver of have effective curriculum, as well. Having an appealing curriculum that keeps students interested while learning valuable skills is a way step in the right direction for transforming the current Financial Literacy curriculum into one that is productive and functional (Henry et al, 2019). There is evidence that the primary driver of the classroom environment was impacted by the Budget Project intervention based on positive feedback from the Financial Literacy teacher and intervention students, as the overall consensus reported engaging discussion and interesting topics that are transferrable to life outside of high school (Sawatzki, 2017). These experiences in the classroom with students through the use of the Budget Project are related to the primary and secondary drivers in the theory of improvement aimed at preparing future GSHS students for independency. There was some movement toward the systems-level change, which contributes to the overall aim of impacting the financial literacy knowledge and skills of GSHS students to help them live successfully as independent adults.



## **4.3 Strengths and Weaknesses**

### **4.3.1 Strengths**

Primary strengths of the Budget Project were that it was easy to implement with high fidelity very engaging for high school students, encouraging thinking and discussions that involved future money management.

Another strength is that students were able to complete the Budget Project in the five allotted class days, which allowed enough time for deep discussion and investigation without rushing content and learning experiences. Finally, the Budget Project is a student-led activity that allows students to make their own decisions for their projected future and see the potential outcomes of their choices. By design, each student received different results and experiences based on the information that they choose to use for this project. This creates a learning experience tailored to each individual student, making it more relatable and effective for acquiring financial skills.

### **4.3.2 Weaknesses**

The current inquiry project and implementation of the change was not without limitations. The quantitative survey data showed more growth in knowledge in the intervention group compared with the control group. It is possible that the knowledge and growth survey items were biased and geared more toward the lessons that were learned in the Budget Project, and thus could partly explain the lower knowledge growth in the control group. Another weakness is that only

training was provided to the intervention teacher participating in the Budget Project; the control teacher delivering the NGPF curriculum did not receive similar training or orientation.

Although the intervention teacher achieved high fidelity with implementation of the Budget Project, I was present in the classroom for the duration of the project. The teacher was familiar with the observation checklist and well acquainted with my background with and investment in the Budget Project. As such, the intervention teacher's teaching approach and fidelity to the content could have been heightened to appease my expectations and presence in the classroom. Additionally, it was not clear whether the control teacher communicated whether or not the posttest would impact the students' marking period grades. Because I was not present in the control classroom, I was not aware of how the pre and posttest were presented to the students by the teacher. This could have also skewed the data from the control group.

Finally, based on feedback from the intervention teacher, the concepts of the project may be a bit advanced for ninth grade students, which will be the majority of those enrolled in future Financial Literacy courses. The Budget Project has ideas and approaches that could be understood better by eleventh and twelfth grade students who are closer to entering independency and future decision making.

## **4.4 Next Steps and Implications**

### **4.4.1 Implications for Practice**

I have identified numerous next steps and implications for practice based on my current findings, including ways to strengthen the Budget Project. First, based on feedback from the

teacher, a version of the Budget Project should be created to be geared more toward ninth grade students. These students are just coming into high school and have little to no job experience or future career plans. Specific modifications could include simplifying some of the concepts and equations used to achieve the same outcome of acquiring budgeting knowledge and future readiness. Any changes made to modify the current Budget Project must be done carefully to not take away any important experiences gained through the simulation. Making these modifications can help to differentiate for all learners in the same classroom, which can range from grades nine through twelve.

Additionally, it would be useful to start the project with a career exploration component to generate interest as well as a foundation for future decision making. The Budget Project begins with students choosing a career and finding the entry-level salary for that career in the location of their choosing. Prior to the start of the project, students have little experience with career exploration or similar self-discovery. Therefore, they may be starting the project with hardly any idea of what job or passion they may want to pursue after high school. During implementation, the intervention teacher incorporated PA Career Zone (PowerSchool Group LLC, 2023) into the daily lesson. GSHS currently uses PA Career Zone (PowerSchool Group LLC, 2023) across various courses to create resumes and cover letters and explore various career options based on passions and interests. While this was an unexpected addition from the intervention teacher, it was a nice complementary tool that I think should be incorporated into future iterations of the Budget Project. Using PA Career Zone as an introduction activity to the Budget Project may yield more realistic and relatable results for students, making it a more effective unit and learning experience.

Information from the implementation of this intervention could be used by stakeholders to evaluate current practices surrounding the current Financial Literacy course and curriculum.

Clearly, the courses are not streamlined, as students are receiving different lessons and content based on the teacher that is delivering the Financial Literacy course. Even though all teachers are using NGPF, student experiences may vary. With only nine weeks to teach this important content, no time can be wasted with educating students on necessary money management skills. This study can assist with making changes to enhance the experience for future Financial Literacy students, which has now increased to at least 250 students each school year due to the recent graduation requirement. Because there were positive responses from students regarding the Budget Project, it would be my suggestion to adopt the Budget Project in place of the NGPF Budgeting unit. In order to do so effectively, modifications could be made to the facilitator's guide and given to teachers implementing the Budget Project to encourage class discussion that dives deeper into each topic within the project, so that students complete the unit with a well-rounded understanding of budgeting. Doing so will assist in working toward completing the change idea of effective teacher professional development for those teacher Financial Literacy.

Because NGPF is the chosen curriculum by GSHS for its required Financial Literacy class, I recommend we critically evaluate the curriculum to identify the most effective lessons and activities for students in future course offerings. To continue focusing on this change idea, approaches and procedures for using NGPF should also be assessed to create a productive, impactful, and streamlined curriculum for all Financial Literacy students, regardless of their instructor. Activities and lessons can be evaluated for effectiveness and usage throughout each unit so that any educator in the Financial Literacy teacher role implementing NGPF will know which available options would be the best choices for teaching their students. This would relate best to the change ideas of teacher professional development and redesigning and updating the

curriculum. Due to the NGPF curriculum being free of cost, changes in the school district budget would not impact these implications.

Even though GSSD established Financial Literacy as a graduation requirement for all future students as of the 2022-23 school year, there are currently no PA state standards specifically for Personal Finance or similar courses. Instead, Financial Literacy concepts are integrated into the following subject area's PA state standards: Family and Consumer Sciences, Economics, Business, Computer, and Information Technology, and Career Education and Work. With the new financial literacy requirement at GSSD, teachers from many different backgrounds have the opportunity to teach Financial Literacy concepts and content. While there are some positives to this situation, it can create inconsistency among content that is taught in the various classrooms. This also has implications for future professional development needs for potential Financial Literacy teachers, as those assigned to teach this required course may change yearly depending on student scheduling and demand for the course. Reviewing the facilitator guide and expectations with the intervention teacher was a crucial part to the success and completion of the Budget Project with the students. This should be considered when determining avenues for future professional development and implementation. Furthermore, advocacy at the State level should be a priority to ensure that progress is being made and that changes are made to the state standards, whether it be to create a separate set of Financial Literacy standards in PA or to set clearer guidelines of what should be taught based on area of expertise between the four content areas that are qualified to do so.

#### **4.4.2 Implications for Research**

One implication for research is to implement another PDSA cycle using the revised Budget Project. I would like to test this change in a larger sample of students across classrooms of two more teachers. Gathering more data on student knowledge growth will be important to share with additional stakeholders, including administrators. Collecting data from more teachers on this simulation and its implementation can improve its ease of use and effectiveness with students. Because the Budget Project is not affiliated with NGPF, implementation may seem daunting to teachers, as it does not use what is already provided or approved by the district. Gathering teachers' perceptions regarding their willingness to implement the Budget Project within the NGPF curriculum would be helpful data to ensure ease of use and application by teachers. This first PDSA cycle within my dissertation in practice proved the high value of collaboration with colleagues. Working closely with one Financial Literacy teacher throughout the process helped me to understand the strengths and weaknesses of the Budget Project. In future iterations, priority will be placed on communication with colleagues and co-creation of curriculum. More research and data collection would be beneficial to making a smooth transition into using this project in addition to other NGPF units. Creating, implementing, and evaluating teacher professional development as a future change idea would be necessary to maximize student personal finance knowledge and skills gained in the classroom. Understanding most effective ways to do so, based on teacher experiences using the Budget Project, would be useful.

## 4.5 Conclusion

Analyzing the data from the student survey, teacher interview, and fidelity observation truly helped in understanding the feasibility and effectiveness of the Budget Project within GSHS. Students responded more positively to the Budget Project simulation activity than the NGPF Budgeting Unit, which aligns with improvement with the secondary drivers of effective curriculum and a functional Financial Literacy classroom environment. Moving forward, it is important to keep the balance measures in mind so that implementation of curriculum changes, teacher professional development, and other changes, do not negatively impact the current system at GSHS in order to achieve the aim statement. Future research will include additional PDSA cycles with an updated Budget Project and a larger sample of Financial Literacy teachers and students. Professional development for Financial Literacy teachers will also be a priority moving forward to ensure consistency in content and implementation across GSHS.

## 5.0 Reflection

Many reflections have come about throughout this entire program at the University of Pittsburgh School of Education. Upon starting the program, I was enthralled with the care and attention to diversity, equity, and inclusion (DEI) from the faculty, staff, and administration. Coming from a white-washed area of rural Western Pennsylvania as a White, cis-gender female, it was not a topic that I had engaged with or studied in-depth. Therefore, it was not a perspective that was a main focus of mine. The integration of DEI into curriculum and discussion throughout the EdD program has brought awareness to the progress that has been made and much work that still needs done for equity in the educational system. I was able to incorporate these thoughts, ideas, and concepts into my own place of practice where I originally thought there were no issues in this specific area.

Looking back at my original research and ideas, the decided-upon Problem of Practice, my intervention methods and measures, and the overall results and lessons learned, there was so much growth throughout the three years as a student at the University of Pittsburgh School of Education. Zhou Nanzhao (2000) wrote about “the four pillars of learning and their implications

for curriculum reforms” that he refers to as “learning to learn” (p. 11). These four pillars are as follows: Learning to know, learning to do, learning to be, and learning to live together. These concepts were used as the foundation for my reflection of the EdD program, my dissertation in practice, and my own growth as scholar practitioner.



## **5.1 Learning to Know**

This pillar uses basic knowledge in combination with specific concepts from more refined content areas. With this in mind, it is crucial to consider the foundational knowledge that my students may have acquired and build off of that in order to scaffold to new levels of proficiency in Financial Literacy. While the use of Mathematics throughout my intervention was a complaint amongst the participants of the Budget Project, it was a skill that they have all learned each year since Kindergarten. The use of simple equations in my intervention was designed to build off of what the students could already do and apply it to a real-world task. They were “learning to know” how to use mathematical skills outside of the classroom in a way that can benefit their overall well-being and future decisions. This is a concept that I will continue to use as I move forward with improving the Financial Literacy course and experience at GSHS.

## **5.2 Learning to Do**

According to Nanzhao (2000), this pillar focuses on applying practices that have been learned in the classroom to interactions, daily living, and all other situations. Through the Budget Project, students were “learning to do” their own money management in such a way that it applies to their personal goals. While working through the project, students were able to develop social skills by asking questions and inquiring about real-life topics, like types of housing and car insurance options. They were able to practice problem-solving skills by adjusting their budget where more or less money was needed to account for their income. They were also able transform their newly acquired knowledge into action, as some of the students are months away from

becoming independent adults after high school graduation. With all of these positives, though, it was important to consider that each student will “learn to do” budgeting in their own way. As a scholar practitioner, I have learned that my intentions through curriculum and lessons may not lead to the desired outcome. What I see as differentiated activities may not be perceived as such by the students. It is important to continue to modifying activities to fit the needs of students and that a universal activity that reaches all students does not truly exist. While it may reach students on the surface, lessons and concepts may not endure through the students’ experiences because it did not relate to them enough during their time in the classroom. This project, along with all other lessons are running documents that will need adapted and updated with each experience in the classroom.

### **5.3 Learning to Be**

This third pillar even more so relates to each student as an individual at the high school level, as they are deciding what they want to do with their future and independence. Nanzhao (2000) describes this pillar as, “the development of human potential to the fullest is the

major priority [here]... everyone will need to exercise greater independence and judgement, combined with a stronger sense of personal responsibility” (p. 13). Students need to “learn to be” the best that they can for themselves and society. This is where, as an educator, I have learned that DEI concepts fit into any lesson, activity, and curriculum. Students need to build empathy and understanding for others who are not like them. While the Budget Project focused on personal growth and understanding finances as a consumer, there could also have been opportunities to project the importance of each students’ impact on others, particularly regarding issues of the social determinants of health (e.g., housing, finances) and (in)equities. Every single

child at GSHS has their own unique talents and dimensions that need to be tapped into in order to truly open up each individual. By doing this, students can explore the endless possibilities and opportunities that make them happy and grow as individuals and make a positive impact on their communities. A rigid or even generalized curriculum will not necessarily do this for all students. As an educator, I have grown to understand that my role in the classroom with this students is to do just that: tap into their interests and talents and have these soon-to-be-adults use them to “learn to be” who they are truly meant to be in this world.

#### **5.4 Learning to Live Together**

As with the other three pillars, Learning to Live Together is timeless. Nanzhao (2000) describes it as, “[coming] to understand others, their history, traditions and cultures, living and interacting peacefully together” (p. 14). Working with the faculty, staff, and my classmates from all over the country, I have learned to appreciate and understand many different perspectives that have impacted my approach to teaching and education. These lessons and perspectives were all taken into account when considering my problem of practice and intervention with sensitivity toward those in my place of practice and community. My hope is that through my teachings, I can reciprocate this empathy through my lessons and teachings to my students and colleagues. Financial literacy is a topic that impacts everyone of all backgrounds, race/ethnicity, and beliefs. However, the approach to teaching, it along with the level of personal experience and understanding from each student, varies. This is important to consider when redesigning curriculum, lesson plans, and activities for future students of the Financial Literacy course at GSHS. We can learn to “live together” despite our backgrounds through this common life skill of

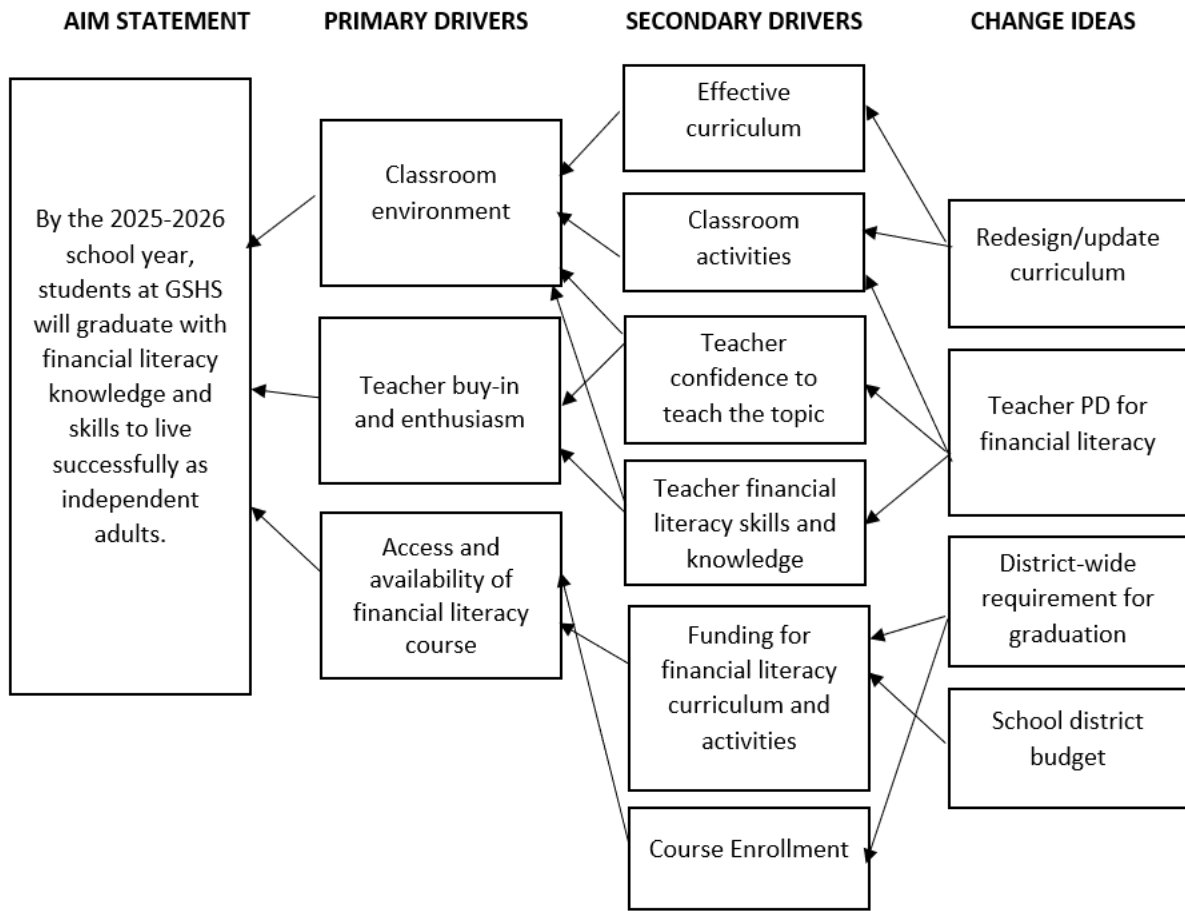
Financial Literacy that effects and benefits everyone. Teaching valuable life skills can build empathy and understanding in these high school students that will soon be entering independency and adulthood, with opportunities to make a significant impact in their community and the world.

## **5.5 Summary**

Overall, this experience with improvement science is one that will change the way that I approach the world of education throughout the rest of my career. I have become more empathetic and understanding, which I will apply to all my work moving forward. Student and teacher voices will be prioritized when considering suggestions to modifying curriculum, lessons, and approaches. Engaging students and preparing them for adulthood will be at the forefront of these approaches, as GSHS may be the only setting some of our students have to support their financial literacy and future aspirations. While the EdD program at the University of Pittsburgh is an extreme form of professional development to suggest to my colleagues, I have the opportunity to be a liaison between such a rigorous program at the University and a small-town high school in Western Pennsylvania.

## Appendix A Appendices and Supplemental Content

### Appendix A.1 Driver Diagram for the Theory of Improvement to Improve Financial Literacy Knowledge and Skills Among Greensburg Salem High School Students



## Appendix A.2 Budget Project Student Packet

### Budget Project: Monthly Net Income

You have the opportunity to work in your dream job! In order to begin creating a budget, you will need to figure out your salary for your new position.

Career Choice: \_\_\_\_\_ Area you will be living/working: \_\_\_\_\_

Starting Salary: \_\_\_\_\_ (be sure to find the STARTING salary for your chosen career and area)  
This amount is your \_\_\_\_\_ (gross/net) income for the year

---

You will be receiving a paycheck every two weeks. That will give you **26** paychecks per year.

Divide your salary by 26 (number of paychecks per year). This will give you your *gross* salary per paycheck. **Show your work below:**

*Example: Starting gross salary = \$45,600*  
 $\$45,600 / 26 \text{ paychecks per year} = \$1,753.85$  Gross pay per paycheck

Gross income per paycheck: \_\_\_\_\_

---

Taxes get taken out of paychecks to pay for items that are used by taxpayers. Depending on where you live, taxes will vary. On average, these Federal, State, and Local taxes take about 30% out of each paycheck. You will be taking out 30% of your gross pay check amount to figure out your *net pay*. **Show your work below:**

*Example: \$1,753.85 gross amount per pay X .30 = \$561.16 amount taken for taxes*  
 $\$1,753.85 \text{ gross amount per pay} - \$561.16 \text{ amount taking for taxes} = \$1,192.69$  NET amount of paycheck

Amount taken out for taxes/deductions: \_\_\_\_\_ Total Net Income per paycheck: \_\_\_\_\_

Multiply your net income per paycheck by 2 since you will be receiving 2 paychecks per month.

Your MONTHLY NET INCOME: \_\_\_\_\_

*This is the number you will be using throughout this whole project*

### **Budget Allocation Guide**

According to financial experts, these percentages are *average amounts* of how a budget should be divided for Americans. Use the percentages to fill out the pie chart. *Be sure to use the designated colors for each category of the budget allowance for the pie chart.*

**Housing—30% (RED)**

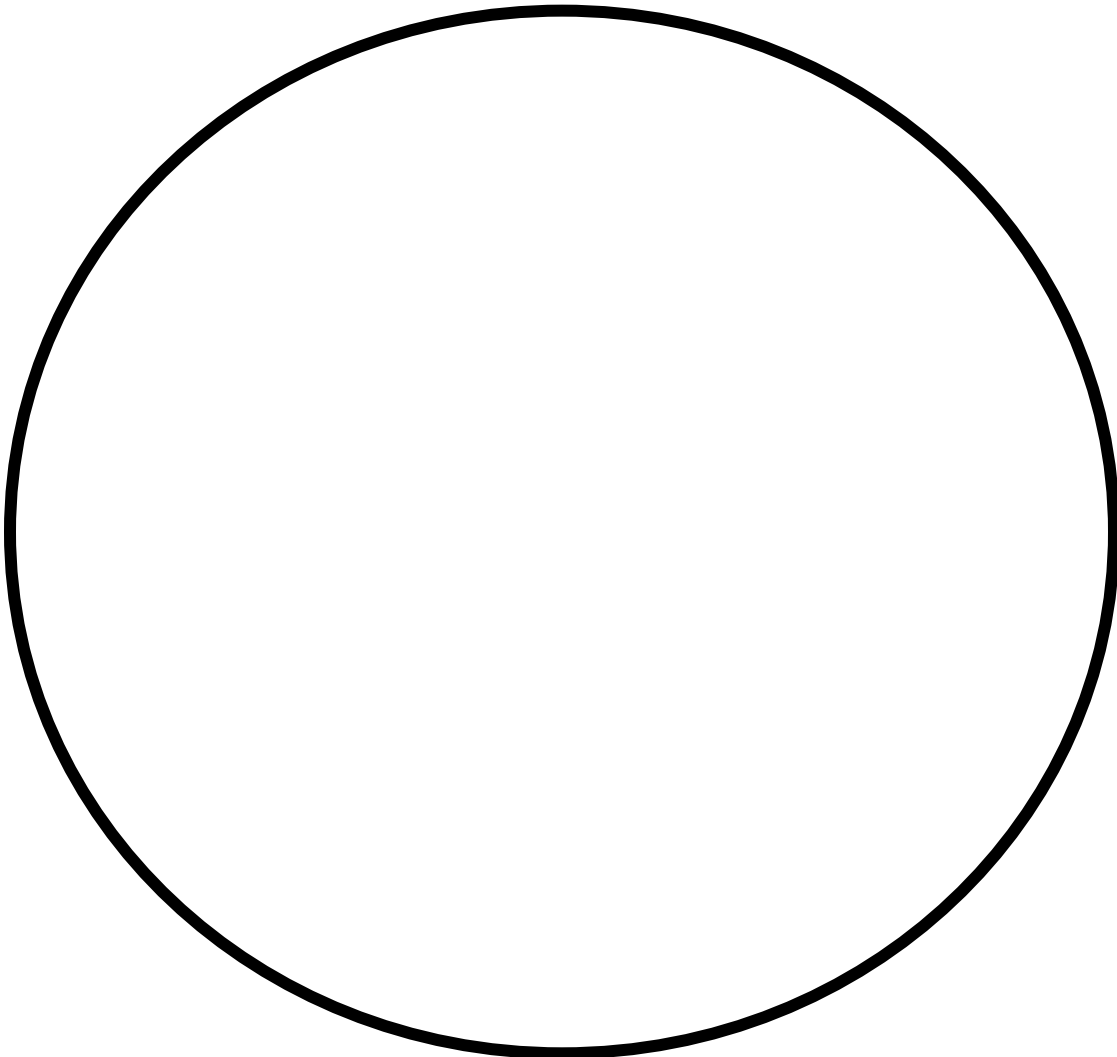
**Transportation—20% (PURPLE)**

**Insurance—7% (YELLOW)**

**Food—15% (ORANGE)**

**Savings—10% (BLUE)**

**Miscellaneous (Other)—18% (GREEN)**



*Label each section of the pie chart*

## Budget Project: Housing Allowance

**Directions:** Using the information from the first page of your "Net Income" packet, use that information to look up apartments and/or houses in the area that fit within your budgeting pie chart. Using the internet, you are to find 3 places to live "within your means." Fill in all of the required information to receive full credit.

**REMEMBER: Housing allowance should be 30% of your budget**

---

Information from page 1 of "Net Income" Packet to use as a reference for this activity:

Your annual GROSS income: \_\_\_\_\_ Your monthly NET Income: \_\_\_\_\_

Your monthly HOUSING ALLOWANCE: \_\_\_\_\_ Probable location of your job: \_\_\_\_\_

---

### **HOUSE/APARTMENT #1**

Website: \_\_\_\_\_ Address of the house: \_\_\_\_\_

Type of house: \_\_\_\_\_

Sale price of the house\*: \_\_\_\_\_ Estimated monthly mortgage/rent per month: \_\_\_\_\_

Using the price of the monthly payment, calculate the percentage it would be from your monthly budget (Show work):

List 3 reasons why you chose this place to potentially live:

### **HOUSE/APARTMENT #2**

Website: \_\_\_\_\_ Address of the house: \_\_\_\_\_

Type of house: \_\_\_\_\_

Sale price of the house\*: \_\_\_\_\_ Estimated monthly mortgage/rent per month: \_\_\_\_\_

Using the price of the monthly payment, calculate the percentage it would be from your monthly budget (Show work):

List 3 reasons why you chose this place to potentially live:





## Budget Project: Transportation Allowance

**Directions:** Using the information from the first page of your “Net Income” packet and your housing sheet, look up vehicles that fit within your budgeting pie chart. You are to find one form of transportation to live “within your means.” Fill in all of the required information to receive full credit.

**REMEMBER: Transportation allowance should be 20% of your budget**

---

Information from page 1 of “Net Income” Packet and Housing Sheet to use as a reference for this activity:

Your monthly NET income: \_\_\_\_\_ Your monthly TRANSPORTATION ALLOWANCE: \_\_\_\_\_

Miles between your house/apartment and your job (use online GPS and addresses): \_\_\_\_\_

---

Choose one of the following options below, depending on which housing option you choose:

### **OPTION #1: Owning a Vehicle**

Website: \_\_\_\_\_ Vehicle Year, Make, and Model: \_\_\_\_\_

Average MPG for your vehicle: \_\_\_\_\_ Approx. monthly payment: \_\_\_\_\_

Average current gas price: \_\_\_\_\_ Approx. how many days a week you will work: \_\_\_\_\_

How much gas will you use in one month going to and from work? (Show work)

Average monthly maintenance for a vehicle is \$100. Add this to the amount above. Then, using the price of the monthly total, calculate the percentage it would be from your monthly budget (Show work):

Why did you choose this option?

### **OPTION #2: Public Transportation**

Common forms of public transportation in your city and their monthly prices: (list at least 3 forms and their average price for YOUR city) Circle your choice.

Average price for a permanent parking spot in your city:

Add the amounts together. Then, using the price of the monthly total, calculate the percentage it would be from your monthly budget (Show work):

## Budget Project: Food/Grocery Allowance

**Directions:** Using the information from the first page of your “Net Income” packet and your housing sheet, use this website to look up the average amount a single adult spends on groceries each month within your city/state. <https://www.move.org/the-average-cost-of-food-in-the-us/>

Fill in all of the required information to receive full credit.

**REMEMBER: Food allowance should be 15% of your budget**

---

Information from page 1 of “Net Income” Packet and Housing Sheet to use as a reference for this activity:

Your monthly NET income: \_\_\_\_\_ Your monthly FOOD ALLOWANCE: \_\_\_\_\_

City/State you will be living: \_\_\_\_\_

---

Average cost of groceries for a single adult living in your city/state for ONE MONTH: \_\_\_\_\_

Calculate the percentage this amount would be from your monthly net income (Show work)

How much is left OR how much did you go over your allotted amount? (Show work)

If you have money left over, what could you use the money for?

OR

If you are over your allotted amount, what would you do?

---

## Consumer Decisions

### Budget Project: Savings/Investment Allowance

Your monthly NET income: \_\_\_\_\_ Your monthly SAVINGS ALLOWANCE: \_\_\_\_\_

**REMEMBER: Savings allowance should be 10% of your budget**

---

List 3 benefits to saving 10% of your net income each month:

Most adults have difficulty saving money each month. Why do you think that is, and what do you think is the result?

## Budget Project: Insurance Allowance

**Directions:** If you have a full-time career, as an employee, you will be offered benefits, like medical, dental, and eye insurance. In that case, only a small amount of your pay check will go toward health care. However, car insurance is a must but not included from your employer. In the spaces below, calculate your approximate car insurance, money toward medical insurance, and research information about the Affordable Care Act

**REMEMBER: Insurance allowance should be 7% of your budget**

---

Information from page 1 of "Net Income" Packet and Housing Sheet to use as a reference for this activity:

Your monthly NET income: \_\_\_\_\_ Your monthly INSURANCE ALLOWANCE: \_\_\_\_\_

---

For a single person, approximately \$100 is taken from each paycheck for health insurance. How much money is that a month?

What percentage is that from your monthly net income?

### Car Insurance

It is against the law to not have car insurance. There are many options for different types of insurance for your vehicle, but a lot of factors go in to the price you will pay each month. List 3 factors that may cause the rate (monthly payment) of your insurance to go up:

Go to: <http://www.carinsurance.com/average-rates-by-age.aspx>

Scroll down to your gender and age range (20 years old). Choose your "type" of insurance: State minimum, Liability, OR Full coverage. Divide that number by 12 to determine how much you will pay each month.

Add that number to the amount taken from your paychecks each month. What percentage is this total from your monthly net income?

## Budget Project: Miscellaneous Allowance

**Directions:** There are categories in the “miscellaneous” portion that must be fulfilled. These would be UTILITIES and DEBTS. Fill in the following information for each category.

**REMEMBER: Insurance allowance should be 18% of your budget**

---

Information from page 1 of “Net Income” Packet and Housing Sheet to use as a reference for this activity:

Your monthly NET income: \_\_\_\_\_ Your monthly MISCELLANEOUS ALLOWANCE: \_\_\_\_\_

---

### Utilities

Using the internet, look up the average cost of utilities in your city: \_\_\_\_\_

\*Here is a helpful source: <https://www.numbeo.com/cost-of-living/>

List common utilities here:

### Debts

Using the internet, look up the average monthly payment for college loans, depending on your type of education (4 year degree, trade school, etc). If no school, put a zero: \_\_\_\_\_

-This website is helpful for determine average loans by post-secondary education:

<https://educationdata.org/student-loan-debt-by-major>

-This website is helpful for figuring out loan payments:

<https://www.bankrate.com/calculators/college-planning/loan-calculator.aspx>

Add your utilities and loan payments together: \_\_\_\_\_

What percentage is this from your monthly net income?

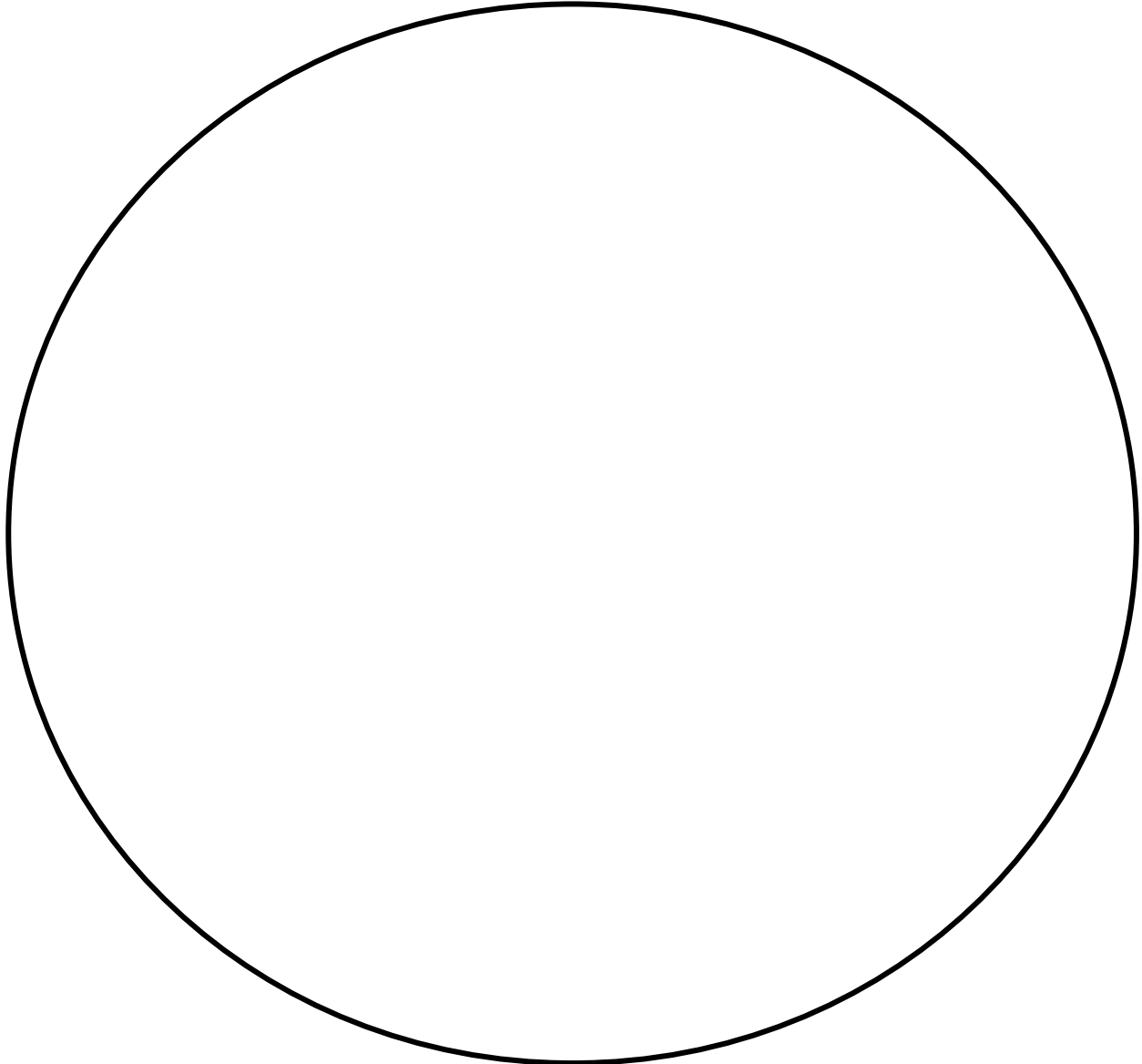
How much is left over? What could you use this money for in your Miscellaneous portion of your budget?



## YOUR Budget Pie Chart

After accounting for the remaining money from your budget (if any), recreate the budget pie chart but with YOUR percentages. Use your master budget sheet to create your pie chart.

***Make sure your percentages in your master budget sheet equal 100 when added together!***



Label each area with the category and percentage  
Use the following guide to fill in your areas:

**Housing = RED**

**Transportation = PURPLE**

**Insurance = YELLOW**

**Food = ORANGE**

**Savings = BLUE**

**Miscellaneous (Other) = GREEN**

**Appendix A.3 Budget Project Facilitator Guide**

**Budget Project Facilitator Guide**

Greensburg Salem School District

Tiffany Smietana-Lysell



## **Introduction:**

This facilitator guide is intended to assist in administering the Budget Project to high school students effectively. The Budget Project is split into 5 days with 65 minutes allotted each day in order to complete the project within the time frame.

### *Standards*

Standards depicted throughout this project are national (United States of America) and state (Pennsylvania) representing both Family and Consumer Sciences and Personal Finances classes.

### *What to Expect*

- **Learning Plan (adapted from Greensburg Salem School District Lesson Plan)**
  - *Essential Questions and Student Objectives:* These essential questions and objectives fall into the category of what we want the students to be able to do at the end of the daily instruction and activities. They can be used as formative assessment tools and tailored to fit financial literacy curriculum and applied standards.
  - *Activities:* Vocabulary and other common key terms for the day will be found here. Lesson instruction and student activities will be listed with the corresponding pages in the Budget Project.
  - *Formative and/or summative assessments:* Assessments, while mostly informal and formative throughout this project, will be labeled and specified throughout for each day of this project. Here, you can find particular topics and tasks that students should be assessed on while completing the project as well as ways to test student knowledge during each day.
  - *Notes or other criteria:* Tips and tricks for teaching these topics will be stated here. While this can vary greatly with the culture and prior knowledge of students in a financial literacy class, they are common topics, questions, and expectations at each stage of this project from the high school age level. Additional resources will also be listed here that can be used by the teacher and students to amplify and assist in completing the daily activities toward completion of the project
- **Additional Information**

All standards, essential questions, student objectives, activities, and assessments can be differentiated to the needs of each student in order to ensure budgeting

information acquisition and creating an effective learning experience for all students.

Daily check-ins for knowledge retention and understanding is encouraged. If facilitating to a large group, it may be helpful to use a stamp or stick after checking student work for each page/section. Doing so will show prior approval for moving on as students work at their own pace for individual growth throughout the project.

Positive and constructive feedback should be provided for main topics and repetitive procedures throughout the project. Examples could be reminding students to show their work for math steps or elaborating on open-ended questions, as needed. Doing so will ensure that the project is completed as intended while increasing learning opportunities for students.

**Name:** Tiffany Smietana-Lysell  
**Course:** Financial Literacy  
**Unit/Title:** Budgeting

**Learning Plan**

*Throughout this unit, students will learn the basic vocabulary words and techniques and strategies in this immersive, student-centered budget project. With guidance from the teacher, students will be able to apply value to their choices and practice problem solving to real-world scenarios that can be easily transferrable to each student.*

Day/Time	Reporting Category, Standard and/or Learning Target/s	Essential Question(s) and/or Student Objective(s)	Activities	Formative and/or Summative Assessment(s)	Notes or other criteria
DAY 1 Approx. 65 minutes	<p>National FCS Standards: → 2.6.1 Evaluate the need for personal and family financial planning.</p> <p>National Standards for Personal Finance Education: → Spending 8-1b. Create a budget that includes expenses and savings out of a given amount of income.</p> <p>PA FCS Standards: → 11.1.12 E. Compare and contrast factors affecting annual gross and taxable income and reporting requirements</p>	<p><b>EQ: What information needs to be determined in order to begin to budget?</b></p> <p>Students will be able to explain the difference and relationship between gross income, net income, and deductions. Students will be able to understand and determine starting/entry-level wages suggested budget allocation amounts for the average American household</p>	<ol style="list-style-type: none"> <li>VOCABULARY TERMS: <b>starting/entry-level salary, gross income, net income, deductions, pay check, pay stub/earnings statement</b></li> <li>Complete pages 1 and 2 of the Budget Project: a) determine monthly net income based on student's potential career pathway for when each student estimates it will happen in their life (right after high school, post-secondary education, internship, etc.), b) understand the suggested budgeting allocations and their purpose/meanings</li> </ol>	<ol style="list-style-type: none"> <li><b>Formative</b> – accurately completing pages 1 and 2 by determining monthly net income beginning with own starting salary; understanding budget allocations and their meanings</li> <li><b>Formative</b> – assess verbal student feedback and questions</li> </ol>	<ol style="list-style-type: none"> <li>Reiterate that <i>starting</i> salaries are lower than reported <i>median</i> salaries. Helpful websites to use are <i>salary.com, indeed.com, ziprecruiter.com</i></li> <li>If some students plan to attend post-secondary education for the medical field or alike, explain their higher salaries are common but student loan payments are usually more (which is addressed later in the project)</li> <li>Talk about the realism of the suggested budget allocation amounts. Do average people really only spend 30% of their income on housing, 20% on transportation, etc? This can be brought up for reflection each day</li> </ol>
DAY 2 Approx. 65 minutes	<p>National FCS Standards: → 2.1.5 Apply consumer skills to decisions about housing, utilities, and furnishings.</p> <p>National Standards for Personal Finance Education: → Spending 12-6b. Compare the short-term and long-term costs and benefits of renting</p>	<p><b>EQ: What should be considered when searching for housing?</b></p> <p>Students will be able to prioritize wants and needs to choose appropriate housing. Students will be able to explain the difference between buying</p>	<ol style="list-style-type: none"> <li>VOCABULARY TERMS: <b>renting, buying, mortgage, rural living, urban living, suburban living</b></li> <li>Complete pages 3 and 4 of the Budget Project: a) have a class discussion about wants and needs for</li> </ol>	<ol style="list-style-type: none"> <li><b>Formative</b> – student understanding through class discussion and questioning</li> <li><b>Formative</b> – completion of</li> </ol>	<ol style="list-style-type: none"> <li>Explain to students the pros and cons of living urban, suburban, and rural (travel expenses, rent or mortgage, convenience, etc.). The website <a href="https://playspent.org/">https://playspent.org/</a></li> </ol>

	<p>versus buying a home in their city of residence</p> <p>PA FCS Standards:  →11.1.12 C. Analyze the relationship among factors affecting consumer housing decisions (e.g., human needs, financial resources, location, legal agreements, maintenance responsibilities).</p>	<p>and renting as well as their advantages and disadvantages</p>	<p>housing, explaining the pros and cons of rural, suburban, and urban living, b) have students determine their needs and find three different places to live in a probable location of their choosing, c) students will answer the reflection questions based on the activities, thoughts, and experiences from pages 3 and 4.</p>	<p>pages 3 and 4 with realistic and accurate information based on understanding of wants, needs, and content-related information</p>	<p>is a short simulation that allows students to compare living and transportation expenses in more urban and rural communities (approx. 5-7 minutes).</p> <ol style="list-style-type: none"> <li>2. Students can use any home search site for this activity, like Realtor.com, Zillow, Apartments.com, etc.</li> <li>3. Sale price of house* - explain to students that the sale price is only available for buying a home. If they are renting, leave this blank.</li> <li>4. Reiterate that the allowance percentages from page 2 are just suggestions, a GUIDE to spending. They can go over or under their allowance amount. However, if they go over, it adjusts the rest of the expenditures.</li> <li>5. MATH: For students to find their "allowance:" multiply the allocated percentage from page 2 by their <i>monthly net income</i>. <b>EX) \$3,000 monthly net X .30 = \$900 housing allowance</b></li> <li>6. MATH: For students to determine the percentage of their budget that was actually spent, divide the expenses by the <i>monthly net income</i> and multiply by 100. <b>EX) \$455 monthly transportation expenses / \$3,000 = .1517 X 100 = 15.17% of monthly income</b></li> </ol>
--	--	--	---	--	--

<p>DAY 3 Approx. 65 minutes</p>	<p>National FCS Standards: →2.7.6 Analyze saving and investing to build long-term financial security and wealth.</p> <p>National Standards for Personal Finance Education: →Saving 8-2c. Identify life situations that can make it difficult for a person to save or to stick to a savings plan.</p> <p>PA FCS Standards: → 11.1.12 G. Compare the availability, costs and benefits of accessing public, nonpublic and for-profit services to assist the family</p>	<p><b>EQ: What factors should be considered and calculated when budgeting for transportation and groceries?</b></p> <p><b>What might impact one's savings contributions?</b></p> <p>Students will be able to determine the most appropriate transportation method for their specific situation and calculate expenses based on this decision. Students will be able to understand grocery expenses and their factors while calculating them into the monthly budget. Students will be able to calculate savings account contributions and determine factors that may inhibit this allowance.</p>	<ol style="list-style-type: none"> <li>VOCABULARY TERMS: <b>savings account, groceries, fixed and flexible expenses</b></li> <li>Discuss the pros, cons, capabilities, and limitations between owning a vehicle and using public transportation.</li> <li>For Page 5: Based on location, wants, and needs, student decide whether they will choose to own a vehicle or utilize public transportation. Students must choose Option 1 OR Option 2 and complete that second.</li> <li>For Page 6: a) Students are to use the link at the top of the page to determine their <i>approximate</i> grocery expenses based on their location, b) using the allocated percentage of savings from Page 2, students are to determine how much is suggested that they save from their income.</li> <li>Have students name examples of fixed and flexible expenses – FIXED = rent, mortgage, car payment, etc.; FLEXIBLE = utilities, groceries, entertainment, etc.</li> </ol>	<ol style="list-style-type: none"> <li>Formative – student understanding through class discussion and questioning</li> <li><b>Formative</b> – completion of pages 5 and 6 with realistic and accurate information based on understanding of wants, needs, and content-related information</li> </ol>	<ol style="list-style-type: none"> <li>Explain to students the pros, cons, and other factors with owning a vehicle and public transportation. Make sure students who are choosing to live in the rural areas understand that public transportation is limited or nonexistent.</li> <li>To look up vehicles to buy, students can use a variety of websites, like cars.com or Carvana. For public transportation options, students can look up availability and monthly rates in their chosen city along with monthly rates (or weekly rates X 4)</li> <li>Reiterate that the allowance percentages from page 2 are just suggestions, a GUIDE to spending. They can go over or under their allowance amount. However, if they go over, it adjusts the amounts for the rest of the expenditures.</li> <li>MATH: For students to find their "allowance:" multiply the allocated percentage from page 2 by their <i>monthly net income</i>. <b>EX) \$3,000 monthly net X .20 = \$600 transportation allowance</b></li> <li>MATH: For students to determine the percentage of their budget that was actually spent, divide the expenses by the <i>monthly net income</i> and multiply by 100. <b>EX) \$455 monthly transportation expenses / \$3,000 =</b></li> </ol>
---	---	--	--	--	---

					<p><b>.1517 X 100 = 15.17% of monthly income</b></p> <p>6. GAS MATH: if students choose option 1, they need to calculate gas expenses. Do this by a) having students choose a place to live, b) find the distance between their home address and work address, c) Multiply that amount of miles by 2 – this is their <i>daily</i> mileage, d) Multiply that amount by 5 – this is their <i>weekly</i> mileage, e) Multiply that amount by 4 – this is their <i>monthly</i> mileage, f) divide the monthly mileage by the car's average MPG – this is how many gallons of gas is used per month, g) multiply the monthly gallons of gas by the current price of gas – this is the final amount that is to be calculated towards transportation expenses in addition to car payment and monthly maintenance.</p>
DAY 4	National FCS Standards:	EQ: What factors should be considered and calculated with	1. VOCABULARY TERMS: car insurance, liability	1. Formative – student	1. Remind students that the budget they are

<p>Approx. 65 minutes</p>	<p>→ 2.6.3 Apply management principles to decisions about insurance for individuals and families.</p> <p>National Standards for Personal Finance Education: → Managing Risk 12-2a. Identify individual characteristics that influence insurance purchase decisions.</p> <p>PA FCS Standards: →11.1.9 E. Compare the influences of income and fringe benefits to make decisions about work.</p>	<p><b>insurance and other necessary living expenses?</b></p> <p>Students will be able to understand all basic aspects of different insurances that are needed, common, and/or available.</p> <p>Students will be able to determine approximate debts and how they impact monthly budgets.</p>	<p><b>insurance, premium, deductible, utilities, debt, loans, interest payments</b></p> <ol style="list-style-type: none"> <li>2. PAGE 7: Students complete by following each step and using the link provided to determine their monthly insurance payments. Student should choose the age that they think they will be at this point in their life (living on their own with the career path that they chose). Explain the three cost levels of insurance and let them choose their own option.</li> <li>3. PAGE 8: Can be completed as a class or individually.</li> <li>4. PAGE 9: This is the last page and set of numbers before the final budget chart. Use the provided links to find expenses based on location, post-secondary education, etc.</li> </ol>	<p>understanding through class discussion and questioning</p> <ol style="list-style-type: none"> <li>2. <b>Formative</b> – completion of pages 7-9 with realistic and accurate information based on understanding of wants, needs, and content-related information</li> </ol>	<p>working on is <i>monthly</i>. Any “yearly” expenses that they encounter should be divided by 12.</p> <ol style="list-style-type: none"> <li>2. While PAGE 8 is important, the cost does not pertain to the final budget chart that the students are completing. Therefore, it can be skipped to keep the “flow” of the project. Be sure, though, to use PAGE 8 as a learning tool for students to understand the risks and circumstances of not having health insurance</li> <li>3. Reiterate that the allowance percentages from page 2 are just suggestions, a GUIDE to spending. They can go over or under their allowance amount. However, if they go over, it adjusts the amounts for the rest of the expenditures.</li> <li>4. MATH: For students to find their “allowance:” multiply the allocated percentage from page 2 by their <i>monthly net income</i>. <b>EX) \$3,000 monthly net X .20 = \$600 transportation allowance</b></li> <li>5. MATH: For students to determine the percentage of their budget that was actually spent, divide the expenses by the <i>monthly net income</i> and multiply by 100. <b>EX) \$455 monthly transportation expenses / \$3,000 = .1517 X 100 = 15.17% of monthly income</b></li> </ol>
---------------------------	--	---	---	---	--

					6. Students may need guidance with the links on PAGE 9. Be sure to explain that loans over a longer period of time result in lower monthly payments but more interest over time
DAY 5 Approx. 65 minutes	<p>National FCS Standards: → 2.7.1 Demonstrate management of individual and family finances by applying reliable information and systematic decision making.</p> <p>National Standards for Personal Finance Education: → <i>Spending 12-1c. Explain methods for adjusting a budget for unexpected expenses or emergencies</i></p> <p>PA FCS Standards: → 11.1.9 B. Explain the responsibilities associated with managing personal finances (e.g., savings, checking, credit, noncash systems, investments, insurance).</p>	<p><b>EQ: How and why is a final monthly budget determined, analyzed, and modified?</b> Students will be able to calculate and analyze their monthly budget sheet and allocation timeline based on their choices and expenses throughout this project. Students will be able to use empathy and their simulated circumstances to understand the struggles with and importance of creating and maintaining a budget.</p>	<p>1. PAGE 11: Students transfer all numbers (total expenses and percentages) from throughout the packet to the Master Budget chart. If their totals are under 100%, adjustments are to be made to areas where expenses are expected to be higher, like transportation and groceries. If their totals are over 100%, adjustments need to be made to decrease spending in areas of their choosing based on wants and needs.</p>	<p>1. <b>SUMMATIVE:</b> Completion and understanding of the overall project, thoroughness and thoughtful responses to the reflection questions based on the newly acquired content knowledge and strategies.</p>	<p>1. Students may need help making adjustments on the Master Budget chart. If they are below 100% of budget usage, they are to disperse the remaining funds where they see fit. For example, transportation in this project only accounts for driving to and from work. It does not account for driving to the store, etc. Also, this project does not account for going out to eat. If students are above 100%, they will need to make cuts in their budget. Explain that the first place that is usually cut is savings, and have students make decisions to decrease their expenses.</p> <p>2. Students are to use their allotment pie chart to compare with the pie chart on PAGE 2</p>



## **Appendix A.4 Financial Literacy Teacher Interview Questions**

### **Budget Project Teacher Semi-structured Interview Questions**

#### ***Before Intervention Implementation***

Thank you for agreeing to implement the Budget Project in place of your Budget Unit! Today I would like to share more about the Budget Project, the facilitator's guide, and answer any questions you have before you implement the simulation activity in your class. Before we begin, do I have your permission to record this interview?

Would you please state your name and role at Greensburg Salem High School.

1. What are your goals for the Financial Literacy course at Greensburg Salem High School? What do you hope students will take away?
2. What are your questions or reservations about implementing this new simulation activity, if any?

(Show teacher the facilitator guide and walk through together)

3. Here is the Budget Project and the facilitator guide that we will be using [go through the packets].
  - a. Are there any questions I can answer at this time?
4. As you know, I will spend time in your class while you implement the Budget Project. I will be there to observe and let you take the lead with the implementation. I will use checklist as I observe to see whether the curriculum is being implemented as planned and taking notes about what I see (like student engagement, problems with the curriculum, etc). This checklist includes criteria that are based in the facilitator's guide and the standards.

(Go through each criteria of fidelity observation).

- a. Are there any other questions I can answer at this time?
5. Is there anything else you feel like you need to be successful in implementing the Budget Project in your classroom?

#### ***After Intervention Implementation***

Thank you for your willingness to participate in this interview! Now that the Budget Project has concluded, I am going to ask a few questions about the financial literacy course, the curriculum, and your thoughts on the future of this course. Do I have your permission to record this interview?

Would you please state your name and role at Greensburg Salem High School.

1. What do you think are the most important topics to cover with high school students in the budgeting unit?
2. Could you briefly describe the week of Budgeting lessons and activities from the Next Gen Personal Finance Curriculum?
  - a. What are your thoughts about these activities and lessons?
3. How do you feel that the Next Gen Personal Finance budgeting unit aligns with Greensburg Salem’s vision of “Children First, Engagement Always?”
4. How do you feel that the Budget Project aligns with Greensburg Salem’s vision of “Children First, Engagement Always?”
5. After administering the Budget Project, what did you enjoy about the project?
6. In what ways could this project be improved for future use?
  - a. Probe: facilitator’s guide; activities and lessons; student engagement;
7. Based on my observations of you implementing the Budget Project during the class, here are some preliminary results [share fidelity observation score and observation notes and interpretations]
  - a. What are your reactions to these results?
8. For the next marking period, how do you plan to teach the budgeting unit?
  - b. Probe: What are your reasons for this decision?
9. In summary, [summarize main points based on your notes]. Does this sound correct?
10. Is there anything else you’d like to share about financial literacy, our students, or the curriculum?

**Appendix A.5 Fidelity Observation Checklist**

**Budget Project Implementation  
Fidelity Observation**

Date \_\_\_\_\_ Topic: \_\_\_\_\_ Class Block \_\_\_\_\_ Observer \_\_\_\_\_

**Observations are based on the Financial Literacy teacher throughout the duration of the implementation of the Budget Project according to the provided Facilitator Guide**

Component: <i>Did the Financial Literacy educator:</i>	No	Partially	Yes	N/A	Comments
1. Teach the appropriate content for each section of the project?					
2. Provide the opportunity for students to ask questions to ensure learning the content?					
3. Provide positive and constructive feedback on the main topics of each daily component?					
4. Ensure that each student meets the standards and objectives from each section before moving on to the next section?					
5. Foster an environment for growth (e.g., positive reinforcement, allowing students to ask questions) in the content area of budgeting?					

<p>6. Reteach topics across sessions, as necessary, to ensure skills have been learned?</p>					
<p>7. Differentiate instructions, as necessary (e.g. simplify instructions, provide more examples, give extra time on sections where needed)?</p>					

## Appendix A.6 Student Pre and Post Survey

### Budget Project Student Pre and Post Test Survey

1. What should be considered when searching for housing?
  - a. 20% of monthly income, personal preferences
  - b. 30% of monthly income, personal preferences, location, career**
  - c. 40% of monthly income, personal preferences
  - d. 40% of monthly income, personal preferences, location, career
  
2. What factors should be considered when budgeting for transportation?
  - a. 10% of monthly income, car payment, fuel
  - b. 10% of monthly income, car payment, fuel, maintenance
  - c. 20% of monthly income, car payment, fuel
  - d. 20% of monthly income, car payment, fuel, maintenance**
  
3. How are savings account contributions determined?
  - a. At least \$1.00 must be contributed every month to a savings account
  - b. Contributions are decided upon by each individual**
  - c. The higher the income, the higher the savings account contributions
  - d. All net income goes into savings accounts
  
4. What factors should be considered when taking on debts?
  - a. Making sure that wants are met
  - b. Interest rate, pay period, debt amounts**
  - c. Interest rate, pay period, education

- d. Debt amounts are limited to \$20,000 per loan
5. Electric, water, and garbage bills are categorized as:
- a. Deductibles
  - b. Premiums
  - c. Interest
  - d. Utilities**
6. What are the differences between fixed and flexible expenses?
- a. Fixed expenses are paid monthly; flexible expenses are paid a few times a year
  - b. Flexible expenses paid monthly; fixed expenses are paid a few times a year
  - c. Fixed expenses remain the same amount owed from pay period to pay period; flexible expenses change the amount owed from pay period to pay period**
  - d. Flexible expenses remain the same amount owed from pay period to pay period; fixed expenses change the amount owed from pay period to pay period
7. How is a final monthly budget determined?
- a. Determining expenses
  - b. Personal wants, needs, and goals
  - c. Both a and b**
  - d. None of the above
8. The amount of money on your paycheck is called...
- a. Gross Income
  - b. Passive Income
  - c. Deductions
  - d. Net Income**
9. How much of your monthly budget should be left over after calculating housing costs?
- a. 50%
  - b. 60%
  - c. 70%**

- d. 80%
10. What is the average percentage of deductions taken out of one's gross pay? This amount is to be used to help create your budget.
- a. 15%
  - b. 25%
  - c. 30%**
  - d. 35%
11. Automobile insurance should be calculated within your transportation allotment
- a. True
  - b. False**
12. It is suggested that you should set aside \_\_\_% of your income for savings account
- a. 5
  - b. 10**
  - c. 12
  - d. 15
13. Which of the following impacts your car insurance rates?
- a. Your driving history
  - b. Your demographics (age, gender, etc.)
  - c. The type of vehicle that you drive
  - d. All of the above**
14. When considering housing, what is the difference between a monthly mortgage payment and a monthly rent payment?
- a. Mortgage and rent are the same payment
  - b. Mortgage payments go toward owning a house, rent payments are for using living facilities without ownership**
  - c. Rent payments go toward owning a house, mortgage payments are for using living facilities without ownership
  - d. Mortgage payments go toward utilities, rent payments go toward other living expenses
15. If you receive health benefits from your job, approximately how much money is taken out of your paycheck each month?
- a. \$200**

- b. \$250
- c. \$300
- d. \$350

16. I have the skills to create my own personal budget.

- a. Strongly disagree
- b. Disagree
- c. Neither agree or disagree
- d. Agree
- e. Strongly agree

17. I have the skills to stick to my own personal budget

- a. Strongly disagree
- b. Disagree
- c. Neither agree or disagree
- d. Agree
- e. Strongly agree

18. I feel more prepared to make financial decisions after this budgeting unit.

- a. Strongly disagree
- b. Disagree
- c. Neither agree or disagree
- d. Agree
- e. Strongly agree

Additional questions to be added to the posttest survey:

19. What was your favorite part about the budget unit?

20. What was your least favorite part about the budget unit?

21. Any other comments you would like to share about the budget unit?



## Bibliography

- Allgood, S. & Walstad, W. B. (2016). The effects of perceived and actual financial literacy on financial behaviors. *Economic Inquiry*, 54(1), 675–697. <https://doi.org/10.1111/ecin.12255>
- American Association of Family and Consumer Sciences (AAFCS), (2022). Alignment tonational content standards and initiatives. Alignment of National Initiatives. Retrieved from: <https://www.aafcs.org/credentialing-center/pre-pac/assessment-alignment>
- Antuna, A. J. (2010). The extinction of home economics: A study of Family and Consumer Sciences (Order No. 3408455). Available from ProQuest Dissertations & Theses Global. (597927866). <http://pitt.idm.oclc.org/login?url=https://www.proquest.com/dissertations-theses/extinction-home-economics-study-family-consumer/docview/597927866/se-2?accountid=14709>
- Barnum, S. (2018). The value of Family and Consumer Sciences programs in the public-school curriculum in Utah: A statewide research project. Retrieved from: <https://ttu-ir.tdl.org/handle/2346/82705>
- Borden, L. M., Lee, S., Serido, J., & Collins, D. (2008). Changing college students' financial knowledge, attitudes, and behavior through seminar participation. *Journal of Family and Economic Issues*, 29(1), 23-40. <http://dx.doi.org.pitt.idm.oclc.org/10.1007/s10834-007-9087-2>
- Chang, Y. & Lyons, A. (2007). Are financial education programs meeting the needs of financially disadvantaged consumers?. NFI Working Papers 2007-WP-02, Indiana State University, Scott College of Business, Networks Financial Institute.
- Compen, B., De Witte, K., & Schelfhout, W. (2019). The role of teacher professional development in financial literacy education: A systematic literature review. *Educational Research Review*, 26, 16–31. <https://doi.org/10.1016/j.edurev.2018.12.001>
- Danovich, T. (2018). Despite a revamped focus on real-life skills, ‘home ec’ classes fadeaway. *Food for Thought*. NPR. Retrieved from: <https://www.npr.org/sections/thesalt/2018/06/14/618329461/despite-a-revamped-focus-on-real-life-skills-home-ec-classes-fade-away>
- Data USA, (2019). Greensburg, PA. Retrieved from: <https://datausa.io/profile/geo/greensburg-pa>
- DeMatteo, M. (2021). Here’s how much debt the average 20-something has—see how you compare. CNBC. Retrieved from: <https://www.cnbc.com/select/average-debt-for-20-year-olds/>

- Fernandes, D., Lynch, J. G., & Netemeyer, R. G. (2014). Financial Literacy, Financial Education, and Downstream Financial Behaviors. *Management Science*, 60(8), 1861–1883. <https://doi.org/10.1287/mnsc.2013.1849>
- García-Aracil, A., Monteiro, S., & Almeida, L. S. (2018). Students' perceptions of their preparedness for transition to work after graduation. *Active Learning in Higher Education*. <https://doi.org/10.1177/1469787418791026>
- Greensburg Salem School District (GSSD), (2020). Future ready comprehensive plan 2020- 2023. Retrieved from: <https://4.files.edl.io/94e1/07/31/20/145319-7e0d5cd7-5437-4e5b-ae9f-d528f56a015c.pdf>
- Greensburg Salem School District, (n.d.). *Our Mission & GPS*. [https://www.greensburgsalem.org/apps/pages/index.jsp?uREC\\_ID=1231678&type=d&pREC\\_ID=1463773](https://www.greensburgsalem.org/apps/pages/index.jsp?uREC_ID=1231678&type=d&pREC_ID=1463773)
- Godbey, K. & Johnson, C. (2011). Career choice influences and job satisfaction for earlycareer family and consumer sciences teachers. *Journal of Family and Consumer Sciences Education*, 29(2)
- Han, S. D., Barnes, L. L., Leurgans, S., Yu, L., Bennett, D. A., & Boyle, P. A. (2020). Literacy mediates racial differences in financial and healthcare decision making in older adults. *Journal of the American Geriatrics Society (JAGS)*, 68(6), 1279–1285. <https://doi.org/10.1111/jgs.16381>
- Henry, D., McCormack, S., & Saeed, N. (2019). An evaluation of a simulation learning task in finance education. *Journal of Education for Business*, 94(8), 549–560. <https://doi.org.pitt.idm.oclc.org/10.1080/08832323.2019.1579162>
- Kaiser, T., & Menkhoff, L. (2017). Does financial education impact financial literacy and financial behavior, and if so, when? *The World Bank Economic Review*, 31(3), 611– 630. <https://doi.org/10.1093/wber/lhx018>
- Lichenstein, A. H. & Ludwig, D. S. (2010). Bring back home economics education. *Jama Network*. doi: 10.1001/jama.2010.592
- Lührmann, M., Serra-Garcia, M., & Winter, J. (2018). The impact of financial education on adolescents' intertemporal choices. *American Economic Journal. Economic Policy*, 10(3), 309–332. <https://doi.org/10.1257/pol.20170012>
- Lusardi, A. & Mitchell, O. S. (2014). The economic importance of financial literacy: theory and evidence: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>
- Lusardi, A., Mitchell, O. S., & Curto, V. (2014) Financial literacy among the young. *The Journal of Consumer Affairs*, 44(2), 358–380. <https://doi.org/10.1111/j.1745-6606.2010.01173.x>
- McCormick, M.H. (2009). The effectiveness of youth financial education: A review of the literature. *Financial Counseling and Planning*, 20(1). <https://ssrn.com/abstract=2225339>

- Mertens, D.M. (2015). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods* (Fourth edition.). SAGE Publications, Inc.
- National Association of State Administrators of Family and Consumer Sciences (NASAFACS)(2018). National standards for family and consumer sciences education. [https://opi.mt.gov/Portals/182/Page%20Files/Career%20%26%20Technical%20Education/Docs/FCS/15FCS\\_NationalStandards.pdf](https://opi.mt.gov/Portals/182/Page%20Files/Career%20%26%20Technical%20Education/Docs/FCS/15FCS_NationalStandards.pdf)
- Next Gen Personal Finance (NGPF) (2022). <https://www.ngpf.org/>
- Nanzhao, Z. (2000). A reflection on 'learning to learn': The four pillars of learning and their implications for curriculum reforms. *Capacity-Building for Curriculum Specialists in East and South-East Asia*. International Bureau of Education, Geneva (Switzerland). 11-14. <https://files.eric.ed.gov/fulltext/ED469229.pdf>
- Pennsylvania Department of Education (2003). Academic standards for family and consumersciences. <https://www.stateboard.education.pa.gov/Documents/Regulations%20and%20Statements/State%20Academic%20Standards/Family.pdf>
- Pennsylvania Department of Education (2006). Academic standards for career education and work. <https://www.stateboard.education.pa.gov/Documents/Regulations%20and%20Statements/State%20Academic%20Standards/Career%20Education%20and%20Work%20Standards.pdf>
- Perry, Zambo, D., & Crow, R. (2020). *The Improvement Science Dissertation in Practice: A Guide for Faculty, Committee Members, and Their Students*. Myers Education Press.
- PowerSchool Group LLC. (2023). About Pennsylvania Career Zone. Pennsylvania Career Zone. <https://www.pacareerzone.org/about>
- Sawatzki, C. (2017). Lessons in financial literacy task design: Authentic, imaginable, useful. *Mathematics Education Research Journal*, 29(1), 25–43. <https://doi.org/10.1007/s13394-016-0184-0>
- Seuntjens, T. G., van de Ven, N., Zeelenberg, M., & van der Schors, A. (2016). Greed and adolescent financial behavior. *Journal of Economic Psychology*, 57, 1–12. <https://doi.org/10.1016/j.joep.2016.09.002>
- Shaklee, H., Deringer, N., & Chapman, E. (2017). Building tomorrow’s workforce: Aligning extension, school, and campus resources in Family and Consumer Sciences. *The Forum Journal*. 21(2), Retrieved from: <https://www.theforumjournal.org/2018/08/27/building-tomorrows-workforce-aligning-extension-school-and-campus-resources-in-family-and-consumer-sciences/>

- Skagerlund, K., Lind, T., Strömbäck, C., Tinghög, G., & Västfjäll, D. (2018). Financial literacy and the role of numeracy—How individuals' attitude and affinity with numbers influence financial literacy. *Journal of Behavioral and Experimental Economics*, 74, 18–25. <https://doi.org/10.1016/j.socec.2018.03.004>
- Wagner, J. (2019). Financial education and financial literacy by income and education groups. *Journal of Financial Counseling and Planning*, 30(1), 132-141. <http://dx.doi.org.pitt.idm.oclc.org/10.1891/1052-3073.30.1.132>
- Williams, A. (2019, January 2). *Senate Co-Sponsorship Memorand: Session of 2019 – 2020 Regular Session* [Memorandum]. Senate of Pennsylvania. <https://www.legis.state.pa.us/cfdocs/Legis/CSM/showMemoPublic.cfm?chamber=S&SPick=20190&cosponId=27243>
- Zawacki, Satriale, G., & Zane, T. (2018). The Use of Remote Monitoring to Increase Staff Fidelity of Protocol Implementation When Working with Adults with Autism. *Research and Practice for Persons with Severe Disabilities*, 43(4), 239–251. <https://doi.org/10.1177/1540796918810234>
- Zehr, M. A. (1998). Shortage of consumer sciences teachers hitting home. *Education Week*. <https://www.edweek.org/ew/articles/1998/10/28/09home.h18.html>