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A Systems Approach to Student Loan Default

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A SYSTEMS APPROACH TO STUDENT LOAN DEFAULT

by

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A SYSTEM APPROACH TO STUDENT LOAN DEFAULT

ABSTRACT

Total U.S. student loan debt has now reached $1.6 trillion accumulated by approximately 45 million Americans. While viable options exist, many do not adequately know of them or how to act on them the outcome of which is that many people with relatively small manageable debt are defaulting. Beneficial, financial student loan programs are vastly underutilized for many reasons one of which is poor financial literacy. In this dissertation, I argue that acquiring financial literacy is a system challenge. The model to support this hypothesis posits a system with inputs, an internal transformation process, outcomes, and a feedback loop. The transformation process within this system is where the interactions among students x teachers x content x context occur, and these interactions can co-produce financial literacy; one positive aspect of which is decreased student loan default rate. The dissertation concludes that a systems approach may improve understanding of the complex issues of student loan default.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE

Introduction

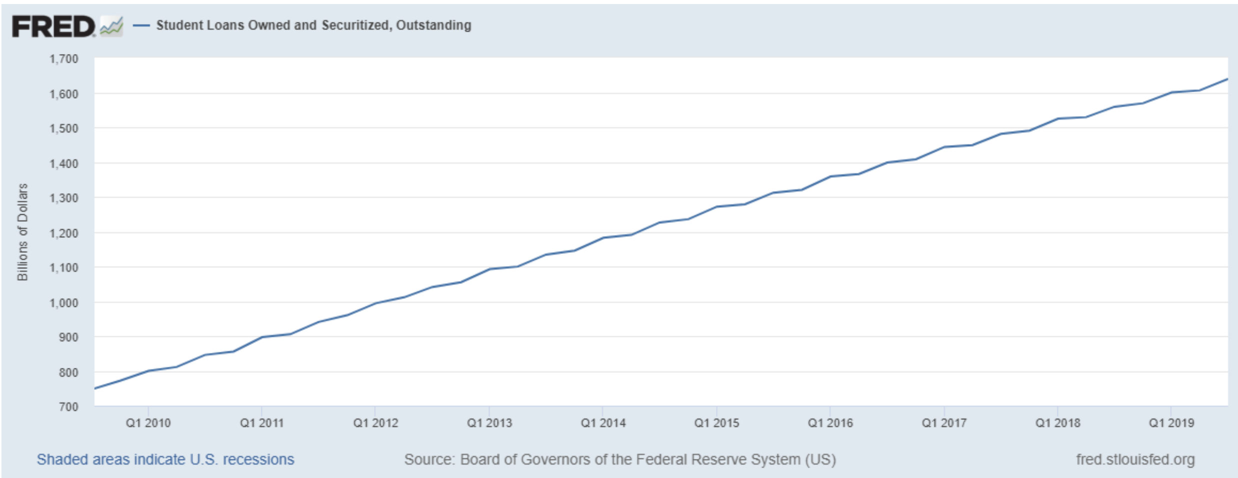
Approach and Chapters

My approach in this dissertation is as follows. In this first chapter, I review the nature and characteristics of loans and debt in the United States with particular consideration of student debt. I address which US States have borrowers with the most and least debt; and explain student loan categories, regulatory guidelines, and the choices of loans available to borrowers. I argue that underlying student loan debt is the concept of financial literacy which I define and describe. I then pose a general hypothesis that explains why student loan default rates are so high followed by a set of research questions that will be examined and answered. In **Chapter 2**, I present a literature review of the issues surrounding financial literacy and the student loan crisis and review the sources of knowledge necessary to answer the research questions. In **Chapter 3**, I propose a systems model that explains how financial literacy is acquired and how student loan default is understood. In **Chapter 4**, I provide a synthesis followed by a summary of the answers to the research questions posed. I discuss how a systems approach to formulating the problem addresses how to respond to the final question of how to reduce the problem of student loan default.

Education Loans and Student Debt

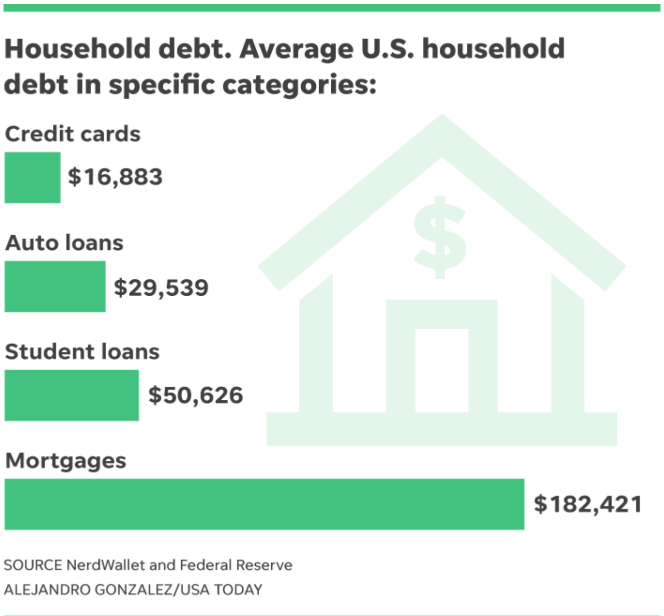
The value of a college degree has never been higher in financial terms but for the 54% of attendees who borrow funds (Kurt, 2019) to earn a degree, repaying student loans can be a significant hurdle (Nitro, 2020). The most recent data available indicates that the total U. S. student loan debt has now reached $1.6 trillion accumulated by approximately 45 million Americans (Friedman, 2020). Furthermore, data compiled from the U. S. Federal Reserve and the Federal Reserve Bank of New York indicate that the percentage of student loan debt that is ninety days delinquent or in default has risen from 10.9% to 11.1% (Student Loan Hero, 2020). Unfortunately, these metrics have been steadily growing over the past decade (Figure 1).

Figure 1. Growth of Student Loan Debt 2010 to 2019



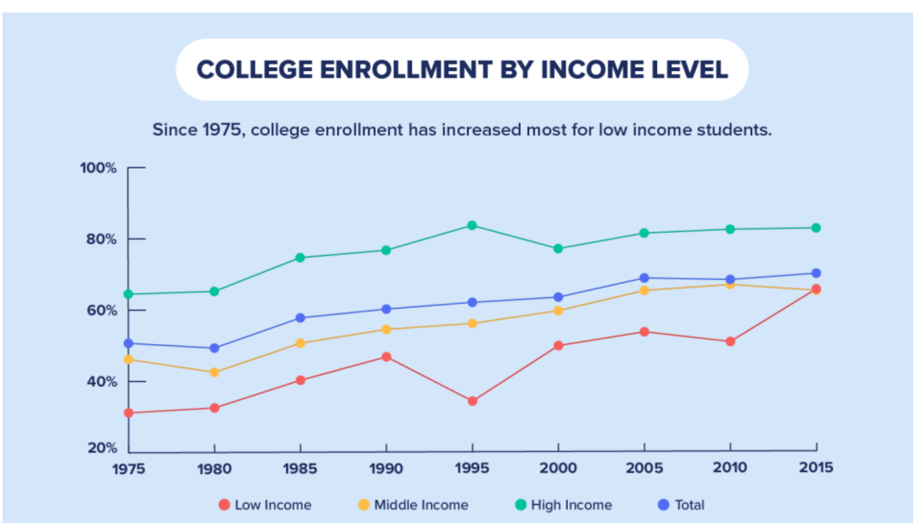
Kantrowitz (2019) reported that student loan debt passed credit card debt in 2010 and auto loan debt in 2011. He predicts that total student loan debt outstanding will reach $2 trillion by late 2023 or early 2024. Student loan debt is now the second-highest consumer debt category and is second only to mortgage debt (Friedman, 2019). When you look only in specific categories, the student loan debt is second.

Figure 2. Comparison of Consumer Debt Categories



One reason for high student debt may be because lower-income people are attending higher education programs in increasing numbers, and they need to borrow money. Furthermore, they attend for-profit institutions including community colleges, which are costly and so they accumulate (Figure 3).

Figure 3. College Enrollment Comparisons



Source: https://www.credit.com/personal-finance/average-student-loan-debt/

Nitro (2020) reports that based on 2019 data, the average amount of debt held by bachelor's degree recipients is $37,172, an increase of approximately $20,000 from 2003. This higher debt load creates higher monthly payments, as well. The 2016 average monthly student loan payment was $393, which is 55% higher than it was a decade ago. Student loan payment amounts have increased by more than two and a half times faster than the rate of inflation (Nitro, 2020).

The majority of outstanding student loan debt, i.e., 81%, is owed to the federal government. The U.S. Department of Education's federal student loan program is the William D. Ford Federal Direct Loan Program. Under this program, the U.S. Department of Education is the lender. There are four types of Direct Loans available: Direct Subsidized Loans are loans made to eligible undergraduate students who demonstrate financial need to help cover the costs of higher education at a college or career school. Direct Unsubsidized Loans are loans made to eligible undergraduate, graduate, and professional students, but eligibility is not based on financial need. Direct PLUS Loans are loans made to graduate or professional students and parents of dependent undergraduate students to help pay for education expenses not covered by other financial aid. Eligibility is not based on financial need, but a credit check is required. Borrowers who have an adverse credit history must meet additional requirements to qualify. Direct Consolidation Loans allow you to combine all your eligible federal student loans into a single loan servicer.

The other federal loans are indirect loans (19%) called Federal Family Education Loans (FFEL) which are provided by an accredited financial institution such as private banks (Nitro, 2020) guaranteed by the government (Nitro, 2020).

In 2010, the Health Care and Reconciliation Act was signed into law. Half of the Act consisted of small amendments to the Affordable Care Act, but the other half, Title II, radically overhauled the country's student loan industry replacing federally backed bank loans with direct lending. During Obama's presidency, student loan debt exploded from $150 billion to more than $1 trillion, the overwhelming majority of which is owed to the US government.

Universities took advantage of the new easier loan requirements to raise tuition rates. From 1995 to 2012, the average tuition at a four-year private college increased by 30%. By 2016, it spiked by another 12% (Lowe, 2019). Other reasons for higher tuition include a lack of subsidies with a downward trend of state taxpayer money funding higher education. Increased administration costs create an overextended budget to meet. The nature of the education process prevents academia from sharing in the gains of productivity such as expensive financial aid packages (Wills, 2020). Furthermore, only nine percent of all college students in the country attend for-profit institutions. The reason this is important is that left-wing politicians love to blame the student loan crisis on for-profits colleges (Lowe, 2019).

While trying to determine what tools are helpful when a loan is required can be a daunting challenge, another problem for borrowers is that financial letters from universities are confusing (Berman, 2019). One of the first problems is that the letters contain a lot of jargon and terminology, which can be difficult to understand. Second, over a third of the schools will not tell how much it will cost to attend they will only inform you about how much you have been awarded. The aid can include loans that students have to pay back and work-study, which will not pay the tuition bill at the start of the semester. There is not any standardization with letters since they differ greatly between schools adding to the confusion along with numbers all over the map (Nadworny, 2019).

Daly (2020) notes that the top five US states for student debt are in the northeast: Connecticut, Pennsylvania, Rhode Island, New Hampshire, and Delaware (see also https://www.collegetuitioncompare.com/state/). EAB, formerly the Education Advisory Board, a consulting/research firm primarily serving the higher education industry reported that the most expensive states for in-state public college tuition are New Hampshire, Vermont, Pennsylvania, New Jersey, and Illinois, with costs ranging from $13,620 to 16,070. Thus, the state of Pennsylvania which has average student debt of $36,854 is both among the highest student debt states and the highest tuition states. Another factor contributing to the tuition rate is state budget cuts since the average state funding per student dropped by 33%. The decrease from 2008 to 2016 was larger in Pennsylvania than in many other states (Daly, 2020). Pennsylvania also ranks 16 out of 50 states for its student loan default rate. 9.28% of Pennsylvania students who defaulted are below the national average of 10% (Ruland, 2019).

The average student debt in Pennsylvania exceeds the national debt average of $28,650. Worse, the default rate among borrowers is significant. 204,846 people from Pennsylvania started repaying student loans in 2016 of which 19,006 (more than 9%) defaulted on their student loans within two years. To default on a federal student loan, borrowers would have to miss loan payments for nine months or 270 days. It differs from private loans where student loans could be considered in default after missing one payment (Ruland, 2019).

Nevada has the highest loan default rate of 18.16%; Massachusetts has the lowest at 5.82%. While being arrested for not paying student loans is rare, problems, including the garnishment of wages, social security benefits or tax refunds may be imposed (Ruland, 2019). There can be other consequences credit history will suffer making it difficult to get a credit card or a loan in the future, and difficult to be approved to rent an apartment or to qualify for a job.

Plus, if you default on a federal loan, you will lose eligibility for a forbearance, deferment, or other alternative repayment plans (Barrington, 2019).

Challenge of Financial Literacy

Nova (2019) reported a study sponsored by the nonprofit education and career organization ACT, “which in April 2018 surveyed about 1,200 high school students who were registered to take the standardized test.” They found students do not understand the basic workings of financial aid, which includes grants, scholarships, work-study, and loans. More than 70% of students didn’t know that loans from the government for undergraduate students are subsidized, meaning interest doesn’t accrue on them while the student is enrolled in college. Most students also didn’t know that student loans can be repaid on an “income-driven” plan, in which their monthly payments are capped at a percentage of their income.

National Center for Education Statistics notes and that is just 11% of ninth graders can correctly estimate the tuition and fees for one year at a public-four college in their state. Around 57% overestimated the costs, and 32% underestimated them. “The findings highlight an urgent need for more financial literacy-specific interventions, especially in light of the economic stakes at hand,” said Jim Larimore, chief officer for ACT’s Center for Equity in Learning (Nova, 2019).

Another explanation about why many students lack knowledge about financial aid has to do with access to social and cultural capital. Students, whose families are middle or upper income might have contact with people or information channels that can make the process less daunting? This is less likely to be the case with low-income families or first-generation collegegoers. They are more likely to have family members who did not attend college or live in a neighborhood with a large proportion of college graduates. Counselors in high-poverty high schools frequently lack training or due to caseloads cannot provide enough individual support (Greenfield, 2015).

Being insufficiently aware of the financial aid process may be attributed to college-prep programs that do not adequately inform how to pay for college. Instead, they provide students with critical knowledge and support related to the college-going process (Greenfield, 2015).

Perna, Kvaal, and Ruiz (2017) suggest that it is important to ensure that students are well informed about student loans and particularly the risks of nonpayment.

Increasing Financial Literacy

Financial literacy is the ability to use and apply financial knowledge to read, write to have knowledge or competency (Durbard & Britt, 2012). Financial literacy is a core component of the financial empowerment of people since an increase in financial literacy is associated with more desirable, responsible financial behavior. Financial literacy includes how to acquire financial aid.

The financial aid process starts with completing the Free Application for Federal Student Aid (FAFSA). Applicants receive a Student Aid Report (SAR) that includes the Expected Family Contribution (EFC). Colleges send out financial aid award letters so students can compare costs. The financial aid package often consists of grants, loans, work-study, and scholarships. When school ends, the repayment process begins with all its different repayment options (College Board, 2016).

A national survey was commissioned by Durbard and Britt (2012) to learn more about on-campus financial education programs. The results of the survey indicate the top requested topics for an educational program are cash management/budgeting, second credit reports and credit scores, and student loan repayment. In the past, the most commonly used method for on-campus education programs involved using mass outreach efforts. Now the trend is increasing towards one-on-one staff or peer counselors. Financial literacy programs like other education programs may be provided face-to-face or via distance learning (Durbard & Britt, 2012). They can consist of short online videos or semester-long courses. They can cover a single topic or provide a comprehensive review (Skornik, 2017).

Durbard and Britt reported that 150 institutions have websites marketing financial education programs. They surveyed 75 institutions that have one-on-one or group presentations of which 30 responded to their survey. They found several reasons for financial literacy program implementation include concerns about student debt levels, reducing the number of students who drop out, and student loan default prevention. Delivery methods of financial education programs are typically provided using one-on-one telephone and live web counseling. Group methods include seminars, workshops, and credit or non-credit courses provided by campus financial education programs. Two-thirds of programs use mass delivery methods like radio programs, seminars, flyers, TV, *YouTube* videos, email, blogs, and podcasts. Generally, the majority reported using a classroom style (Durbard & Britt, 2012).

A general financial education program attempts to improve financial literacy, but without considering individual and academic education it is unlikely to be effective because it is not consistent with the academic level of the student audience. An important idea is that programming should feature timely content that students will find most relevant to their lives (Durbard & Britt, 2012). The curriculum of a financial education program should include the following important topics such as cash flow planning/budgeting, improving credit, managing debt, saving & investing, job selection, planning for after college expenses, and premarital financial counseling. Financial education programming content does require revision and updating to achieve optimal effectiveness with various target audiences. The content itself and how the material is presented are two critical criteria for a successful program. There is a plethora of superb content that is publicly available for slide show presentations, handouts, websites, podcasts, videos, and fact sheets. There are materials to keep the underserved (people who do not have access) and individuals who seek self-help materials (Durbard & Britt, 2012).

Government and campus-based financial education programs exist with so many valuable resources that are publicly available; educators must customize programming content to their campus and students. Here are a few examples: USA.Gov, Federal Deposit Insurance Corporation (FDIC), MYMONEY.Gov, Consumer Financial Protection Bureau (CFPB), Education Resource Center, and last but not least Federal Student Aid (FSA). Furthermore, students are interested in receiving financial education and counseling through various delivery formats that include seminars, online methods, counseling centers, the Internet, and workshops. A strong interest is presumed for online and social networking because of students' comfort with technology and its associated flexibility (Durbard & Britt, 2012).

According to Perna and Kurban (2013) when students have access to student loan financial information, it will serve as an important predictor of college enrollment (Perna & Jones, 2013). However, the majority of students do not understand the financial aid process some possible reasons include the complexity of the process itself typically the aid application is both longer and more complicated than a federal tax return. There are bureaucratic hurdles and information barriers that tend to disproportionately affect low-income students. The FAFSA includes 100 questions and seven categories that students must negotiate thus information about the affordability of college is buried within a thicket of paperwork (Greenfield, 2015).

To reduce the risk of nonpayment federal policymakers should stress forbearance and deferment mechanisms and take advantage of income-driven repayment options where they are effective at reducing the risk of default for people who have low earnings throughout their lifetime (Perna, Kvaal, & Ruiz, 2017). It is precisely this topic where increasing financial literacy can make a difference in curbing delinquency and avoiding default.

Income-Based Repayment

There is a way to better manage student loan payments, and that is through Income-Based-Repayment (IBR). IBR is a type of income-driven repayment plan that people can use to lower their student loan payments. The plan provides much-needed relief if payments are unaffordable because the loan balance is high compared to current income (Kirkham, 2018). In the study of high school students reported by ACT (2018), it was noted that most did not know that student loans can be repaid via an Income-Based Repayment (IBR) plan in which payments are capped at a percentage of their income. The strongest argument in support of Income-Based Repayment (IBR) systems is that they provide a form of insurance for borrowers who experience financial hardship after they graduate. They allow borrowers who have low income to extend their period of repayment. The second aspect of IBR and Pay as You Earn Plans (PAYE) programs is that they will forgive outstanding balances after 20-25 years and will forgive the balances of workers who work in public and non-profit sectors after ten years (Akers, & Chingos, 2014).

Income-based repayment has certain negative aspects or weaknesses. The first is that IBR can cause price escalation and over-borrowing. IBR can increase the willingness of borrowers to over-borrow because they do not fear financial hardship. Second is the moral hazard of widespread use of IBR it may increase the debt burden from accrued interest. The third negative aspect is debt aversion IBR may not provide sufficient incentives and assurances to allow low-income students to overcome their aversion to debt. Grant programs are effective at increasing the participation of low-income students. Another negative aspect of IBR is that the institution losses the incentive to ensure that students complete the program and earn sufficient income (Sheets & Crawford, 2014).

Finally, IBR encourages students with larger and fewer manageable loans to select this option. High-risk students attend high-risk institutions with high default rates. The distribution of subsidies could shift from low income to higher-income students who would reduce public support for federal grants for low-income students (Sheets, & Crawford, 2014).

Default

A student loan will default if a borrower does not pay their loans by following under the loan servicer agreement. The actual threshold from a delinquent account to default can vary with lenders (Lobb, 2019).

Once a federal loan defaults a borrower will lose valuable benefits like deferments, loan forgiveness, and flexible repayment plans. Next, the federal government can garnish 15 percent of wages as social security and tax refunds can be withheld (Lobb, 2019). It should be noted that borrowers often default on modest loan balances projections show that up to 40% of students who were given student loans in 2004 might default in the year 2023. The trend is due to a rise in default rates between 12 and 20 years after borrowers started repaying their loans (Fain, 2018).

College financial aid offices often encourage borrowers to defer repayment until a date later into the future. They will do this because they are evaluated on the percentage of their students who default in the first three years after they graduate. When colleges participate in the student loan program, they must keep their share of borrowers who default below 30 percent for three consecutive years according to federal law. Besides, it cannot be more than 40 percent for one single year (Bailey, 2018). The federal law is the Higher Education Act of 1965 as amended where the Department of Education can exclude schools from the Direct Loan program (GAO, 2018).

Stark differences continue to exist in default rates when observing the various classifications of school type, graduation status, college selectivity, the field of study, and family background. Chakrabarti (2017) reported a study of art majors to have the highest default rates while STEM majors have the lowest default rates. When considering college selectivity students attend nonselective colleges that have higher default rates despite their field of study. The field of study matters more at nonselective colleges. The gap in default rates is much smaller when you compare majors among students at selective colleges (Chakrabarti et al., 2017).

Regardless of the degree program they studied, it is dropouts who have higher default rates at every age compared to graduates when college type is considered. Students who attend private for-profit were found to have the highest default rates after their mid-twenties (Charkrabarti, 2017).

Statement of the Problem

Student loans are often needed because the cost of running a higher education institution continues to increase, which influences tuition. Sluggish wages for middle-class families and strained minimum income for lower-class families mean Americans who want to gain this education often fail to do so, which decreases social value and competitive employment opportunities. However, while viable options exist many do not adequately know of them or how to act on them. The outcome of the current situation is that many people with relatively small manageable debts are defaulting (Weissman, 2013).

I hypothesize that default is high because beneficial financial student loan programs are vastly underutilized. From the perspective of the borrower, it may be because users are not aware of the financial programs, or they don't know how they can help. From the perspective of the lender and/or those who provide education about loan opportunities, it may be because appropriate or adequate information is not provided. From the perspective of the content of the education about financial literacy, it may be because what is taught to the community of prospective borrowers is inadequate or insufficient. From the perspective of the context in which information is presented, it may be that characteristics of the environment may be inadequate or inappropriate or interferes with efforts to understanding or learn.

My general hypothesis is that if *potential borrowers* have the capacity to learn, and if *providers of financial information* are qualified to present information, and if the *content* of the information is appropriate, and if the *context* wherein information is provided is supportive then the interactions among these elements *are far more likely to* co-produce financial literacy, and this in turn is likely to decrease the student loan default rate. In other words, my hypothesis argues that acquiring financial literacy is a system challenge, and I believe that if financial literacy was higher, there would be a reduction in student loan defaults.

Research Questions

The following research questions are posed:

1. What are the characteristics, methods, and processes of the *prospective borrowers* who intend to gain student loan financial aid information?
2. What are the characteristics, methods, and processes of those *responsible for educating* prospective borrowers about student loan information?

3. What are the desirable and essential characteristics of the information, i.e., the *content* appropriate for student loan financial aid information?
4. What are the characteristics of the mode of communication and theory of learning, i.e., the context used to communicate student loan financial aid information?
5. If the system elements consisting of students, teachers, content, and context are integrated, will this facilitate learning financial literacy and decrease the student loan default rate?

CHAPTER TWO

Literature Review

Financial Literacy

A RAND corporation working paper by Anderson, Conzelmann, and Lacy (2018) reported that regression analysis of the characteristics that people associate with financial literacy such as financial security, GPA, and field of study do not significantly predict student loan literacy. They conclude that regardless of financial literacy, it is students who borrowed to pay for college that demonstrated better student loan literacy compared to students who did not borrow. They find that just general financial literacy and student loan literacy are entirely two separate and distinct constructs. The major conclusion from their study is that the way people learn student loan literacy is through actual hands-on experience (Anderson et al., 2018).

Their findings used data from the 2015-16 National Postsecondary Student Aid Study (IES, 2018) which includes questions that measure financial literacy and student loan literacy. The data helps in understanding vulnerable student populations such as students at for-profit colleges that have low financial literacy but can understand loan terms as well or better than students at other institutions (Anderson, et al., 2018).

A study by Fishietto (2016) defined student loan knowledge as the ability of a student to be able to define their interest rate, starting salary, and debt burden. The study explores the following five independent variables: current employment, debt dependency, enrollment in a high school or college financial course, and budgeting. The study concludes that current employment has a definitive and positive effect on whether students possess more knowledge about their student loans. The independent variable of current employment was the only independent variable to be significant in two tests. The reason is given that students who work will demonstrate greater responsibility for the cost of their tuition, monthly expenses, and they are more financially independent (Fishietto, 2016).

A study by Markle (2019) evaluates the influence of financial literacy on student’s financing decisions, perceptions of student loan debt, and education-related behavior. A total of 429 students participated in a survey where financial literacy was measured by ten true or false statements. Student loan awareness was measured by ten Likert-style questions. The results of the study show that financial literacy influences how participants thought about their debt. Participants with lower levels of financial literacy and student loan awareness report negative feelings about their level of debt. Furthermore, students with higher levels of financial literacy positively perceive their debt as a savvy financial strategy and an investment in their future. Students in the study lacked knowledge of the details of their loans. They lacked the knowledge to make informed decisions about financing their education.

The study also showed that a student’s family background influences the level of financial literacy as parents are the most important factor in the financial socialization of adults. Where the parents are the positive financial role models, the students make better financial decisions. Financial literacy affects students' understanding and awareness of debt. If students lack financial literacy, they are unable to estimate their potential earnings and corresponding ability to manage and pay off their student loan debt.

A study by Javine (2013) examined the relationship of student loan knowledge to student loan debt. The purpose of the study was to assess whether financial knowledge along with other demographic information can predict student loan debt. The study hypothesized a negative relationship between financial knowledge and the amount of student loan debt. A survey was launched to gather information about students' loan usage, credit card expenditures, and financial literacy of students attending one state university.

The results of the study showed that the longer students stay in school the more debt they accumulate and that students who have a lower GPA also have a higher level of student loan debt. Plus, students with high credit card debt levels along with financially independent students generally have higher student loan levels. Higher levels of student loan debt were found among African Americans. An interesting finding from the study is that students who understood financial topics were still taking out higher levels of loans because they believed it was the only way to finance their education.

Skornik (2017) researched the impact of campus-based financial literacy programs on student loan default. The Cohort Default Rate (CDR) is the percentage of borrowers who enter default on certain federal loans in a given time period. The research question for this study was to ascertain if institutions with mandatory comprehensive financial literacy programs have lower cohort default rates compared to institutions within an optional single-topic or no program at all?

Skornik (2017) was unable to separate drop-out students in the calculation of a CDR. When an institution has a non-mandatory program, it is very difficult to identify what percentage of students avoiding default – were exposed to the program. She finds that you cannot conclude that exposure to financial literacy is the reason an individual is avoiding default. She concludes there is no decisive way to measure if the students who do not default can attribute their repayments to the financial literacy education program.

Durbard and Britt (2012) argued the importance of assessing financial literacy because the primary goal of financial education is to enhance financial literacy. An assessment is necessary to understand if students are benefiting from financial education.

Financial literacy involves how well an individual can understand and use personal finance information. To inquire if an individual comprehends financial education, the approach is to administer a financial literacy assessment (FLA). Educators can use FLAs to evaluate materials, exercises, and teaching methods. Student’s financial literacy levels can be determined to ascertain if additional enhancement is necessary.

Assessment data will also assist administrators to consider course improvements and evaluate teaching and curriculum effectiveness. If the program is determined to be effective it will justify the program's existence. Programs that demonstrate the impact and value will have leverage with providers.

Keshner (2019) states that a new report released by U.S. Financial Literacy and Education Commission says the Treasury Department recommends that institutions of higher education require mandatory financial literacy courses. The Financial Literacy and Education Commission is a group that includes the Treasury Department and the Department of Education.

One recommendation is that financial aid letters should have an itemized and sub-totaled cost of attendance that outlines direct costs and indirect costs. This is because award letters are often unclear and give inadequate information for students to make financial decisions. Another recommendation is that there is a need for broad adoption of more detailed information in debt letters. Debt letters should indicate repayment options, interest if payments are deferred, and provide average entry-level salaries by major. A third recommendation is that if financial literacy courses are optional, they probably will not reach students who may be unaware of them or do not value the benefits of financial education. The Department of Education wants to improve student financial literacy, so students are empowered to make better and informed decisions regarding their education.

Decision Making

A study that examines how college students make decisions when they borrow money to finance their education was conducted by Johnson, O'Neill, Worthy, Lown, and Bowen (2016). Their process used data from online focus groups to try to understand what students know about their student loans, what considerations were influential for their decision to borrow, and their thoughts regarding student debt? The purpose of the study was to contribute to the literature by providing qualitative data on student loan borrowers' decision-making process, their knowledge about their loans, and exactly how they feel about them.

The research team collected data through an online focus group. A registration process enabled the researchers to retain control of the composition of the sample and gather essential background information. The benefits of the study are that it provided thought-provoking insights involving the mindset, misperceptions criteria, and decision-making processes used by college students when they borrow money (Johnson et al., 2016).

Conclusions from their research included that students did not understand many details about their loans. They turned to other individuals and acquaintances who probably also did not have a strong background for their advice. A majority of respondents accept student loans as their only means to obtain a college degree (Johnson et al., 2016).

Lusardi, Scheresberg, and Oggero (2016) discussed the 2015 National Financial Capability Study (NFCS) which focuses on decision making around student loans and debt repayment. The NFCS data indicate that a significant portion of borrowers do not understand exactly what they were taking on when they obtained their student loans, which means they are not aware of the choices they made. Indeed, 54% did not attempt to determine their future monthly payments before applying for the loans.

Lusardi, Scheresberg, and Oggero (2016) also reported that student loan decisions are not carefully reviewed by those acquiring them. Survey data indicated that 53% would do it differently if they had a second chance. Another 17% are not sure whether they made the correct decision. Of borrowers, those who attempted to estimate monthly payments were more satisfied by 15% than those who did not, borrowers with private student loans were more likely to make a change in how they reached a decision compared to those with just federal loans.

Harris (2016) believes what would help the student loan crisis is to change borrower behavior. She claims students focus on the price of tuition when they shop for institutions. The practice is called anchoring when you lock on to a number and exclude other information. The more expensive schools and the majority of selective schools have more resources to offer substantial aid to promising students. It is better to focus on the net price of tuition minus aid to get a realistic picture.

Harris (2016) makes a few recommendations, which include making it easier to search for a good fit with categories of GPA, SAT, and location. Furthermore, schools should be transparent by discussing their level of financial aid and make it easier to obtain a new price.

A paper by Boatman, Evans, and Solz (2014) attempts to help student loan borrowers solve two problems: loan aversion – people who are unwilling to finance the investment in higher education with student loans. The other is poor choices regarding loan repayment – for example, they may select a repayment plan that will hurt their long-term finances or do not consider realistic income levels for a recent graduate.

The authors offer six policy recommendations that apply lessons from behavioral economics that will reduce loan aversion and improve repayment decisions. Their first policy recommendations are that there should be one form of income-contingent repayment and one standard. When you limit choices, you reduce cognitive overlap it is easier to weigh the pros and cons.

The second policy recommendation is that repayment information should be provided in high school. They want students to learn about repayment options as a prerequisite for filing for financial aid. It will improve borrowing knowledge and reduce risk and loan aversion. The third policy recommendation is a move to a uniform passive repayment system. Passive means borrowers do not have to actively initiate payments each month. They recommend an automatic payroll deduction (Boatman et al., 2014).

Their fourth recommendation is to make Income-Contingent Repayment the default option. The advantage will encourage more people to take this plan and reduce default rates. Fifth they want to change the name and description of the income-contingent repayment plan. They want to call it default protection repayment and the standard should be called a 10-year repayment plan (Boatman et al., 2014).

Their last recommendation is removing the principal balance of the loan this would reframe how students think about the debt it would combat loan aversion.

An interesting study by Darolia (2016) inquires what happens when students are given information about the impact of their borrowing decisions as the treatment group receives a letter about future monthly payments and borrowing by peers. The control group does not receive any extra information. The experimental design allows for a comparison of choices between groups to study effects. A positive outcome from the letter is that it induced information seeking among students. Overall, the effects of the letter are modest at best students with low GPAs changed their borrowing behavior in response to the letter.

Cho, Xu, and Kiss (2015) state that Human Capital Theory implies an individual will make investments in human capital if the potential benefits exceed the costs that are associated with education. When you invest in education beyond high school, it is wise when the anticipated return on the investment is equal to or exceeds the cost. The return that is anticipated would be higher lifetime earnings compared to an individual with less education. Increases in student loan debt and rising college enrollment are not an indication that student loans have boosted college attainment. Completing the degree is the strongest indicator of not defaulting.

Kuzma, Kuzma, and Thieves (2010) claim that expected future earnings are a major factor that impacts student loan decisions. The selection of a major can build confidence in debt management and future employment prospects. When future earnings are uncertain students might be persuaded to select a high-earning major.

Ideas42 purport to be a leader and at the forefront of behavior science. They promote that they create fresh solutions to tough issues based on behavior insights where they educate leaders and help institutions improve existing programs and policies. Ideas42 feels clearer information about different student loan plans could help borrowers understand the options. They claim that making information concise and easily comparable can make a real difference in how students consider their loan repayment options.

Simple instructions and friendlier aesthetics made the process easier and reduced the hassle of trying to figure it out they add email reminders. The tools used in the intervention can be applied to any complex application process. If a process is more complex and convoluted, it will be critical to simplify language and highlight key action steps. Ideas42 recommends address borrower needs and fears, so they can access debt relief programs (Ideas42, 2016).

Default

Mueller and Yannelis (2018) Studied the rise in student loan default rates during the Great Recession. They were about to link student loan data at the individual level to the borrower's tax records. Their results find that the composition of student loan borrowers along with the massive collapse in home prices during the Great Recession accounts for roughly 30% of the rise in student loan defaults. Falling home prices affect student loan defaults because they impair student loan borrowers' labor earnings, especially for low-income jobs.

Next, they compared the default responses of IBR eligible to ineligible student loan borrowers to home price changes before and after the IBR introduction. They find that IBR reduced student loan defaults and their sensitivity to home price fluctuations. Furthermore, the result was found to be driven exclusively by IBR borrowers who enrolled in the IBR program.

Lucca, Nadauld, and Shen (2017) address the question of whether federal student loan programs represent bad policy? They found a positive association between aid-dependence and subsequent enrollment expansion. Furthermore, they feel an expansion in enrollment leads to increased access to higher education, which is significant given the positive gap between the cost of education and its social or private benefit. If you just judge the welfare implications of federal student loan programs, you will need to compare the tuition effects and increased participation.

The Great Recession probably boosted demand for education services at institutions where students are more reliant on student aid. Likewise, the same institutions may have encountered drop-in state appropriations or even endowments, which will require an increase in tuition so that they may bolster their budgets. Credit is a major player in funding higher education and where most of it originates is through the federal government (Lucca, et al., 2017).

An article by The Institute for College Access & Success (TICAS, 2019) says the cohort default rate (CDR) is the federal government's student debt outcome measure and was established three decades ago. The Department of Education calculates the CDR for each school each year and has used it to determine eligibility for federal student aid. If an institution has a CDR that exceeds 30 percent for three consecutive years, it will be subject to the loss of federal student loans and Pell grants for two consecutive years. If an institution's CDR exceeds 40 percent for a single year, it will be subject to the loss of access to federal student loans.

Institutions have been able to manage their CDR while not reducing the student's risk of default. Default management consulting firms that schools offer lead borrowers into long-term or consecutive periods of forbearance. Evidence appears that institutions can evade CDR accountability when they exploit forbearance options to push default out of the institution's accountability time period (TICAS, 2019).

Some suggestions to this problem are to make sure that forbearance is for the benefit of the borrower and not the school. Next, publish five-year default rates for transparency reasons. Finally, target program reviews along with other investigations at colleges that have substantial increases in the default rate after three years. Incentives should be added so that schools will improve their CDR, one example would be to hold colleges financially responsible or risk-sharing of the cost of negative student loan outcomes (TICAS, 2019).

In another article by The Institute for College Access & Success (TICAS, 2018) discusses the characteristics of borrowers who default. If a borrower does not complete a college degree, they run a greater risk of default compared to a borrower who graduates. Non-completers are twice as likely to default in public institutions. Defaulters had the following characteristics 23 percent were single parents; 35 percent were black, 49 percent were first-generation, and 68 percent had incomes below 200 percent of the federal poverty line.

Some strategies can help prevent and productively cure the default. First, promote changes that would make it easier to re-enroll in school and access federal aid. Relevant agencies should seek improvements in the transition between default and repayment. Also, protect students against low-value education programs. You want to make it easier to repay student loans. Congress could streamline the current and confusing array of income-driven repayment plans with a single plan that is superior.

Furthermore, it is high time that the Department of Education improve its oversight of loan servicing with new consistent standards to ensure high quality so that borrowers are not misled by companies that collect student loans. The Department of Education should implement the 2016 borrower defense rule to strengthen student protections from being lured into worthless educational programs (TICAS, 2018).

Delivery Methods

A study by Goetz, Grude, Nielsen, Chaterjee, and Mora (2011) evaluated preferences for three financial education delivery methods: a counseling center, online, and workshops. The strongest interest was for online, the second was workshops, and the third financial counseling center. The authors suggested students might be intimidated by the thought of attending a financial counseling center and would rather select online resources because they are available 24/7, they are convenient, easy to use, and they can remain anonymous. However, online resources led to high attrition rates. Despite this, there was substantial interest in all delivery methods so the authors concluded that institutions should attempt a multipronged approach. They also called for future research to examine the levels of technological delivery for online courses to evaluate the benefits of interactive and passive education.

What is needed is an intervention approach for college graduates that provides education intending to reduce loan default. One proposition is using text messaging interventions to promote positive results for student loan repayment and other financial behavior. Zunwal, Sweedler, Olive, Serido, Johnson, and Bartholomae, (2019) determined a text messaging intervention as a delivery method to engage consumers. The goal is to increase student awareness and efficacy for the student loan repayment process.

A baseline survey was used to recruit students, so they could participate in an intervention. The goal of the texting intervention was to assist students who were starting the repayment process by giving them helpful information. The results of the text messaging studies overview demonstrated that text reminders increased the timelines of loan repayment and the amount of the loan that is repaid. What text messages do is that they provide an opportunity to nudge people to make informed decisions and to take necessary action. The results of the study give the best practices for designing text messages. Furthermore, information is also given on how to focus on text messages and strategies for messaging frequency (Zunwal et al., 2019).

An effective method exists to teach financial literacy to students that is both innovative and technology-based the method is social media. Students use it on a personal basis, so it is powerful and popular with them as these mediums are important in the lives of students. One method is to establish a group on Facebook where students can pose questions that will promote discussion about issues in financial literacy. Another method is to discuss topics regarding financial literacy is through Twitter, which uses the services of an expert. Through Twitter hashtags, a connection is made with users concerned with specific topics where they can quickly gain access to an expanded discussion as they directly link to other academics who speak to financial literacy issues (iGrad, 2019).

Educators can utilize video in the classroom platforms such as *YouTube* make it easy to upload lectures to share with students who can process the information at their own pace. The students, in turn, can create a video or podcast as a supplement to demonstrate their level of understanding of financial literacy topics. Educators should engage students through their needs and desire to connect with social channels (iGrad, 2019).

A study by Johnson, Bartholomae, Seido, Katras, and Tobe, (2020) proposes using a text campaign so that they could empower student loan borrowers. The campaign has a goal to reduce confusion around student loan debt repayment. They designed a text message intervention to inform recent college graduates about student loan repayment. The study claims students lack a fundamental understanding of the student loan process which leaves them unprepared to pay off their loans once they graduate. The appropriate response stipulates intermediate education when the borrower is still in school will help borrowers with loan repayment. An SMS text messaging campaign will promote just-in-time education that aligns with how students receive information (Johnson et al., 2020).

Research shows that college students rank text messaging first as their preferred form of communication with social media second, email third, and phone calls last (Ha, Joa, Gabay, & Kim, 2015). The Pew Research Center (Duggan, 2015) claims text/SMS is the single most used feature of a smartphone. Johnson et al., (2020) found in their post-survey results that over half of the respondents found text messaging campaigns useful and one-quarter unsure of the usefulness of the intervention. A limitation of the study is the low number of participants, but graduating seniors support the text campaign.

Campbell, Deil-Amen, and Rios-Aguilar (2015) discuss the Getting Connected: Harnessing the Power of Social Media to Enhance Community College Success research study, which used a Facebook app called Schools App. The Schools App provided a window into the perspectives of community college students and their experiences with financial aid. The students used the Schools App space to ask and answer procedural questions related to financial aid. The student's posts were analyzed using wordclouds. The study unexpectedly provided a window into the perspectives of community college students and their experiences with financial aid. The students look at financial aid as a climate of the penalty and financial aid as a punitive process (Campbell et al., 2015).

Pennsylvania

The National Conference of State Legislatures (NCSL) claims that individual states can make a difference, here are some examples of state responses to the student debt problem. One example is when a state allocates financial aid it should emphasize need-based aid over merit-based aid. Need-based grant aid can help reduce the need for students to borrow (Boggs, 2019).

Another consideration would be to forgive the amounts of federal student loans from state income tax. The IRS treats the amount forgiven as income. States could exclude forgiven federal student loan debt from being a state liability. States should increase awareness of income-driven repayment plans because potential students along with their families benefit from knowing all of the options before loan origination. Finally, states could require institutions to adopt strategies that would assist with student debt reduction. A plan to implement loan counseling to students and provide institutional data about student borrowing focused on state-level systems and to aid statewide policy adjustments (Boggs, 2019).

A natural disaster forbearance will be offered for borrowers and co-signers affected by the coronavirus (COVID-19) by the Pennsylvania Higher Education Assistance Agency (PHEAA). Natural disaster forbearance will apply to all PHEAA-owned private loans which include PA Forward, undergraduate, graduate, parent, and refinance loans (PHEAA.org).

Coronavirus and Future

The CARES Act, which is known as the Coronavirus Aid, Relief, and Economic Security Act is a $2.2 trillion stimulus package that President Donald Trump signed into law. What the act will do is let borrowers with student loans delay making payments for six months on student loans that are backed by the fed. Borrowers with private student loans will not receive any relief whatsoever from the bill (Buchwald, 2020).

Besides, interest will be waived and will be at 0% until after September 30, 2020. The missed payments will not be reported and will be treated as regularly scheduled payments that are by the borrowers which means they will not be reported as if they were on a forbearance. To emphasize the importance of the CARES Act it is one of the most significant offers of debt relief given to student loan borrowers in modern times. It demonstrates the impact that the coronavirus pandemic has had on student loan debt in this country (Melton, 2020).

The CARES Act also provides urgently needed help for colleges and universities. The funds can be used by institutions, so they can provide emergency financial aid grants to students to meet expenses related to the disruption of campus operations because of COVID-19. An example of the expenses would include costs of food, course materials, housing, technology, and health care.

Institutions can now give emergency scholarships to students through the Federal Supplemental Educational Opportunity Grant (SEOG). Institutions can now issue work-study payments due to workplace closure. The bill will also waive special program requirements for teachers who are pursuing teacher loan forgiveness (Streeter, 2020).

As far as default is concerned the CARES Act will suspend involuntary collections such as wage garnishment and the reduction of tax refunds. The pause of student loan payments and involuntary collections is automatic through the CARES Act, which means borrowers dealing with sudden changes from the pandemic will have one less thing to worry about (Lustig, 2020).

The coronavirus outbreak has significantly altered practically every aspect of college life, which includes admissions, enrollment, athletics, canceling in-person classes, and changing to online. Schools will raise acceptance rates in an attempt to boost fall enrollment numbers, but projections suggest fall enrollment will be curtailed. Seventy percent of high school seniors feel their financing ability to attend college will be impacted by COVID-19. Free Application Federal

Student Aid or (FAFSA) completion rates are down nearly 2% when compared to the prior year according to the National College Attainment Network.

A forecast from the American Council on Education finds enrollment for the next academic year will decline by 15% with a decline of 25% for international students (Smalley, 2020).

The future of education for universities might include rather than keeping everything on campus promote remote learning and admission. Perhaps universities will separate from things that take a high portion of tuition dollars such as research, administration, buildings, and athletics. In the future, universities might add more streams of revenue besides education. Universities might incorporate the latest technology instead of being years behind such as using advanced technology that will enable learning like artificial intelligence, virtual reality, and augmented reality, etc. Universities might stop with outdated things like textbooks, memorization tests, and letter grades, and utilize sustained learning. Students will get experience as part of their learning experience. Finally, in the future partnerships should be formed for a holistic learning experience over monopolizing everything (Reverse Tide, 2020).

Currently, due to COVID-19, online classes have become the standard format. If the shift continues students, and administrators will expect higher quality than the emergency result. Many adjuncts are well equipped for an online format. Institutions that do not have an online department should adjust their budget to avoid a potential crisis (Majors, 2020). Institutions must be prepared to lose students from less affluent backgrounds for the sake of family survival (Majors, 2020).

CHAPTER THREE

Systems Approach to Financial Literacy

Low levels of financial literacy may come with consequences which in certain cases can be significant, including a host of negative credit ratings. Unfortunately, the majority of financial education is geared for college students or adults, tends to be reactive, not proactive, and is insufficient to reach literacy for most people. Introducing adolescents to financial education could lay a foundation for financial well-being as adults and should be looked at as an investment in human capital (Brookings Institution, 2018).

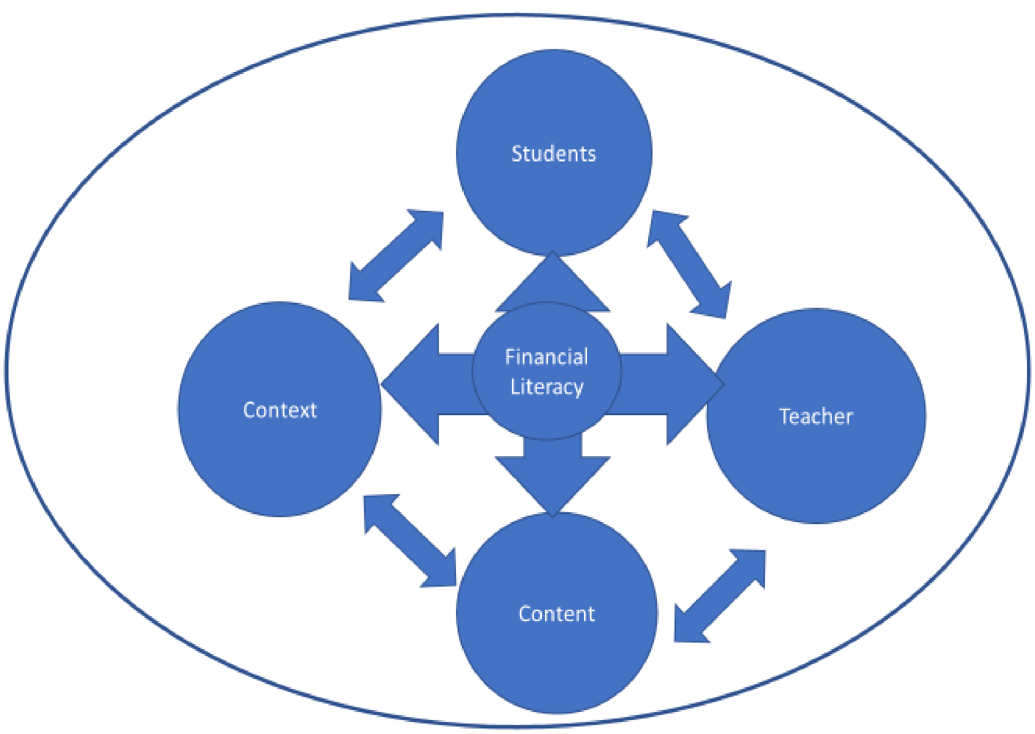
Literacy as a System

Taking a systems perspective, Sweeney (2008) suggests that *literacy of a system* concerns conceptual knowledge and reasoning skills, including the capacity to follow complex interrelationships and to perceive recurring patterns. Indeed, she notes that one who is literate (1) stops jumping to blame a single cause for the challenge we encounter and, instead, looks for multiple causes, effects, and unintended impacts; (2) moves beyond laundry lists and bullet points to see patterns of interaction that more closely match the interdependent, complex world we live in; and (3) gets off that problem-solving treadmill, where our "solutions" often only create more problems or make the original problem worse.

Starr (2020) argues that if applying a system approach to learning, which can lead to attaining literacy, one should not focus merely on one or two of the elements of learning as if they cause an outcome. Rather, the systems view of the process of learning and attaining literacy concerns the outcomes derived from understanding the relationships and interactions between elements. From this perspective, financial literacy emerges from the interactions among many elements and becomes evident when there is new understanding, behavior, values, attitudes, and perspectives that support one's capacity to formulate and address financial problems and opportunities.

Following Starr (2020), financial literacy (Figure 1), therefore, may be appreciated as a complex dynamic construct that emerges from the interactions between the **student** (learner), **teacher** (facilitator), **content** (financial knowledge, information, skills, behaviors, and understanding of how to make valid choices and to avoid errors based on suboptimal decision-making) and **context** (external and internal environment, culture and other characteristics affecting learning). An education program that leads to financial literacy could be argued, co-produce positive financial behavior and financial well-being. Financial literacy as defined would include relevant financial content topics understanding how to access and engage with financial institutions, products, and markets.

Figure 4. Financial Literacy Emerges from the Interaction of Elements

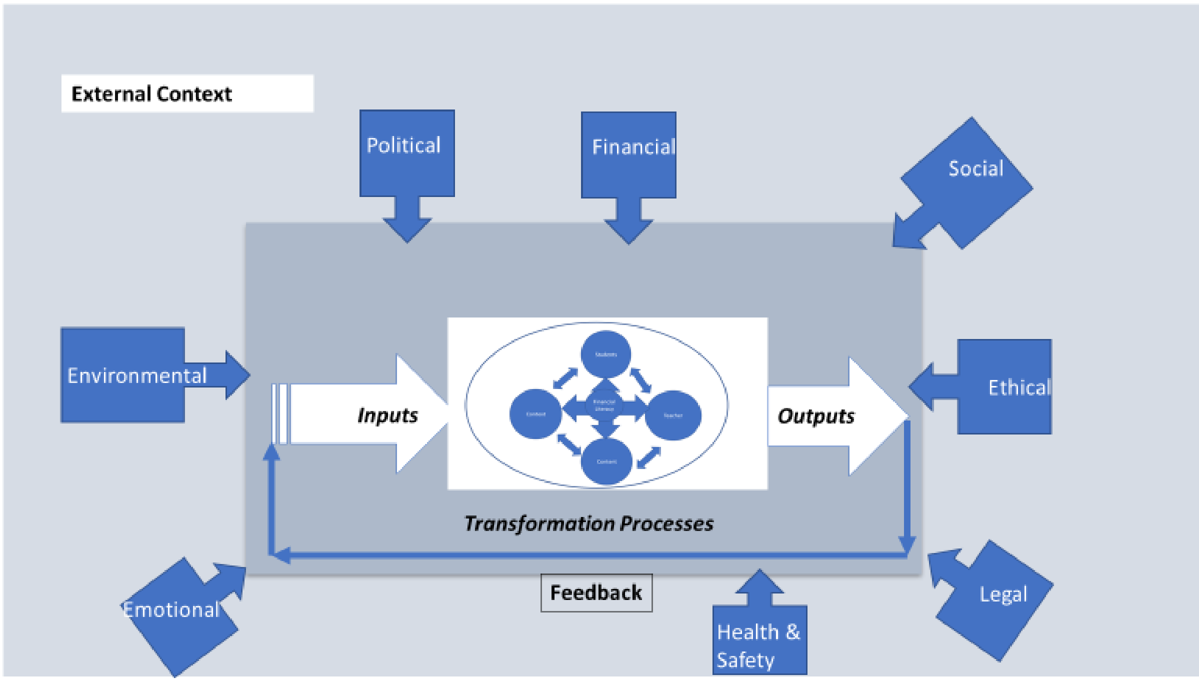


Learning Financial Literacy

An education system from which would emerge financial literacy has the same structural components found in all organization systems (Starr, 2020). The *input* includes variables, situations, and people who come together to participate in education. The *transformation process* concerns interactions and independencies among students (learners), *teachers* (facilitators), *content*, and the *internal context*. The *outputs* include alumni with credentials as well as applications generated by the interactions among the elements. The financial *literacy* learning system has a *feedback loop* that enables the inputs and transformation to adapt to changes due to experiences. There is an *external or containing environmental context* that informs and influences the other elements including the transformation process.

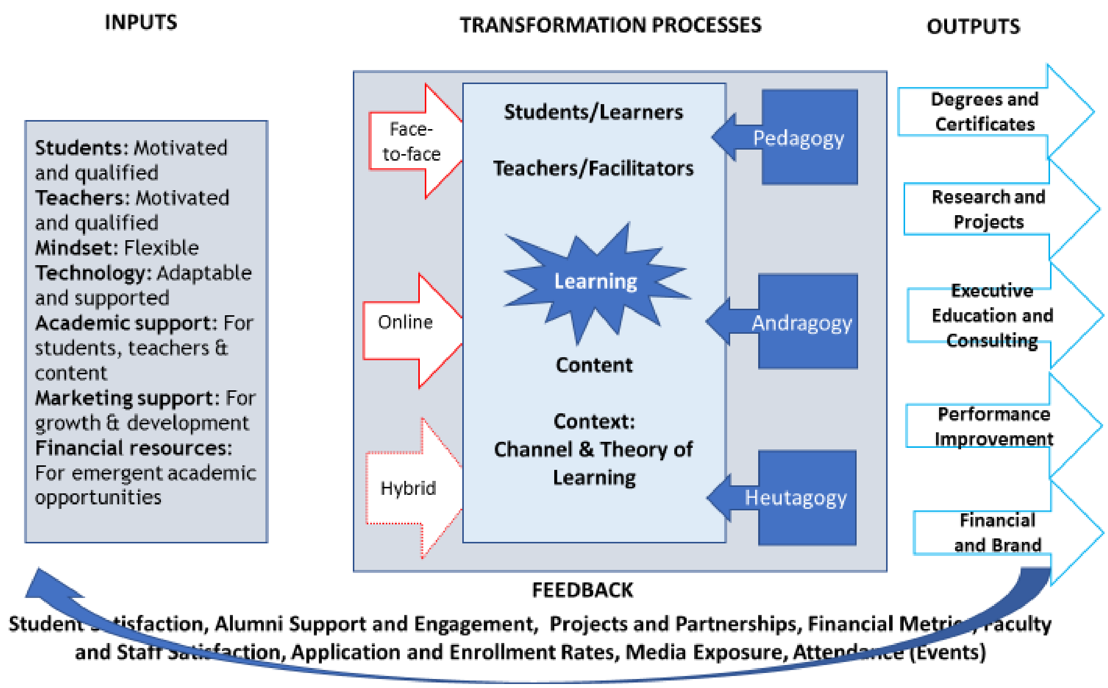
During the context of the COVID-19 global pandemic and the national election of a U.S. President, these external contextual influences include threats about health and safety, politics, finance, education, and many other forces. A systemic view considers all elements and parts, as financial literacy is considerably linked to loan repayment. Figure 4 based on Starr (2020: 5) presents the structure of a financial literacy education system.

Figure 5. Financial Literacy Education System



The elements of the education transformation process include the interactions among learners, facilitators, content, and the internal context which includes the channel of communication, and the *theory of leadership* applied. The channel of communication refers to how communication occurs such as face-to-face (f2f), virtual, or hybrid/blended. As an explanation of f2f, the process takes place primarily in a traditional classroom and/or in a “clinical” environment with physical meetings that allow verbal and non-verbal observation, modeling, and physical feedback. When education is fully virtual or online, conceptual, and reflective education can occur, but clinical feedback may be difficult without sophisticated technology. A hybrid/blended channel means education includes f2f and online communication although the distribution/percent can vary significantly. Another element of the internal context of the transformation concerns the theory of learning that is applied by the instructor. Three relevant theories are Pedagogy, Andragogy, and Heutagogy. The transformational elements including internal context forces are presented in Figure 6 based on Starr (2020: 6).

Figure 6. System with Transformation Process and Feedback Loop



While the focus of the learning financial literacy transformation process concerns the interdependencies and interactions, each of the elements will first be described.

Students

Timothy Ogden, Managing Director of the Financial Access Initiative, a research center housed at NYU-Wagner, claims that forcing students to study personal finance is a waste of time and those demographics play an important role because financial literacy is much higher among the wealthy. In reality, financial literacy should focus mainly on lower to middle-income individuals. He suggests the reason people's finances are in bad shape is not budgets or interest rates rather it is the cost of higher education, health insurance, and rent, which suggests that improved financial literacy will not close budget gaps. Other external contextual forces that influence learning include the political climate, financial factors, the social environment, ethical considerations, legal restraints, health and safety measures, human emotions, and the environment itself. Ogden feels that as financial education programs in school vary it is an economic folly for schools to spend money on useless personal finance classes and force students to attend (Ogden, 2019).

Learning Styles

A characteristic purported to influence how and why people learn is their VARK preferred learning styles where V is visual, A is aural/auditory, R is read/write, and K is kinaesthetic. The visual technique is attributed to people who prefer images, graphs, and videos over written text. Auditory learners prefer their information from what they hear. Read/write learners prefer to receive textual layouts such as booklets and manuals. Finally, kinaesthetic learners prefer to absorb their information by carrying out specific tasks. The VARK guide.

Howard Gardner who promoted the idea of multiple intelligences (Strauss, 2013) argued that learning styles are a distraction. Gardner proposed that different parts of the brain compute different kinds of information, and people have seven to ten distinct intelligences. Gardner feels there is no evidence that if you teach a learning style, it will provide better outcomes compared to a one-size-fits-all approach. He proposes that educators individualize teaching as much as possible for important materials using several methods but do not call it learning style (Toppo, 2019).

Nevertheless, in his Theory of Multiple Intelligences, Gardner suggested eight types of learning styles with corresponding preferred approaches to teaching.

Visual (Spatial) – prefer images to help them process information learners prefer to see what is required as they may need to map out their thoughts, so they can process them better. Visual learners have good spatial awareness and direction as they desire pictures and images to process information. He suggested that Visual Learners prefer to use visual aids like pictures, diagrams, images, and film clips. Write key points right in front of the class as visual cues. Avoid large blocks of text but instead, let the students create mind maps students should visualize what is presented or look at presentations and then write down explanations. Storytelling can help with visualization.

Aural (Auditory) – are people who respond to sound and speech. They can recall what the teacher said and enjoy participating in class. Aural learners are skilled at oral reports and class presentations since they have a good sense of pitch and rhythm. Aural Learners – these students should be encouraged to participate in discussions make lessons available online or suggest audiobooks. Pair up students and have them explain concepts to each other.

Verbal (Linguistic) – prefer the written and spoken word. The occupations they enter include public speaking, writing, journalism along with debating. They enjoy reading, writing activities, study groups but dislike silence. Verbal Learners – ask the class to read aloud and get them to discuss and present. They should role-play or practice interactions between employees and clients. They should be asked to teach members of the class certain material.

Physical (Kinesthetic) – physical learners enjoy going through the motions of exactly what they are learning. They have high energy levels and appreciate the physical world around them. Some of the characteristics include they may speak with their hands like role-playing and draw diagrams. Physical Learners – physical exercises where they are standing, and walking will prove effective. They should use a pen and paper to map out their thoughts; they should problem solve because writing is a physical exercise and get them to draw diagrams, graphs, and maps. They should be encouraged to role-play and interact with physical objects or solve puzzles.

Logical (Mathematical) – find careers as engineers, mathematicians, or even scientists. They perform complex calculations, enjoy chess, desire to understand the reasons as they classify and group information. Look for systems behind the concepts. Logical Learners – first, provide the class with problem-solving tasks and then challenge them to work things out for themselves. They should be asked to interpret abstract visual information and include critical thinking exercises.

Social (Interpersonal) – are true people, persons, as they enjoy direct involvement with others in group projects. They are stimulated by dialog but do not want to work alone. They love to socialize and work through issues in a group. People trust them for their advice because they listen well and are good at resolving conflicts. Social Learners – they should be allowed to discuss, and share stories use role-play and include group work. Get their opinion about a concept, idea, or topic. Ask them to trade and compare ideas with each other.

Solitary (Intrapersonal) – would rather learn on their own since they are motivated and highly independent. They like quiet, possess good self-management skills as they set goals, and make plans. A solitary learner likes to sit alone and study by themselves to retain information. Solitary Learners – ask them questions so you know how they think and feel. Next, provide them with individual problem-solving exercises. An explanation is important to solitary learners regarding the importance of the lesson material because they are interested in outcomes.

Naturalistic – the newest category of a learner as they are more in tune with nature, they love to explore nature and spend time outdoors. Interested in biology, botany, and zoology (Smith, 2019). Naturalist Learners – It is important to include experiments with lessons because they must find patterns in nature and link concepts together. Exercises should be structured so they can identify and classify them. Also, observational data should be provided such as case studies, so they can link daily life to people or nature (Somji, 2018).

A group of psychologists led by Hal Pashler finds that the use of learning style measures in educational settings is both unwise and wasteful. You cannot assume that people are enormously heterogeneous in their instructional needs since it could divert resources away from solid teaching practices. The group feels that the primary focus should be on identifying and introducing the experiences, challenges, and learning activities that will enhance everyone's educational experience (Toppo, 2019). Moreover, cognitive science has provided methods students can utilize to assist with knowledge acquisition. Some tried and true techniques include space out study sessions, study the material in multiple modalities. They test themselves and make meaningful connections effective strategies have significant empirical support and disregard the belief learning styles matter (May, 2018).

Overall, there appears to be scant evidence to support learning styles. People are aware of their preferences, but it is less clear if the preferences matter. The argument could be made in the age of flipped classrooms and online learning that students now learn more about the information on their own. May (2018) reports that most students are not using study strategies that correspond with their self-reported learning preferences. There is mounting evidence that learning preferences do not support academic benefit. There are negative correlations between many of the common study strategies and course performance (May, 2018).

If learning is made fun and simple, the consequence is that we can no longer engage with more complex learning processes. For true learning and effective learning to take place, we need to engage the brain at intense levels. Using learning styles could make people less willing to engage in harder or more difficult material, which is not a good life lesson. There is a desire for learning and teaching to be fun and engaging, but that is not what the real world is like because that is not how nature and biology work (Habermacher, 2018).

Domains of Learning

Cognitive or Thinking Domains

Remembering is when memory is used to retrieve facts or recite learned information. Understanding is used to construct meaning from different types of functions or activities such as interpreting, classifying, comparing, or explaining. Applying pertains to situations where the material is used through simulations, presentations, or interviews. Analyzing will break the material or concepts into parts such as creating spreadsheets, surveys, charts, diagrams, or graphs. Evaluating is where judgments are made according to criteria or standards. Creating puts elements together to form a whole new pattern or structure. Synthesize parts into something new and different.

Affective or Feeling Domains

Receiving involves the learner's sensitivity to the existence of stimuli, awareness, attention capture, experience, and perceive. Responding – motivation to learn, responses conform, allow, cooperate. Valuing is learning beliefs and attitudes of worth, acceptance, preference, commitment. Organizations are learner's internalization of values and beliefs. Organize them according to priority, systematize, integrate (Wilson, 2020). Characterization is the internalization of values at the highest level such as philosophy on life to resolve, judge, conclude.

Psychomotor or Kinetics Domain

Reflex movement – these movements are involuntary. Fundamental movements are more complex actions walking, running, jumping, pushing, pulling, and manipulating. Perceptual abilities take in information from the environment and react. Physical abilities are related to endurance, flexibility, agility, strength, reaction-response time, or dexterity. Skilled movements must be learned for games, sports, dances, performances, or the arts. Finally, nondiscursive communication refers to interpretative movements that communicate meaning without aid, verbal commands, or help (Wilson, 2020).

Reasoning

Deductive is how traditional engineering and science are taught. Lecture on general principles to derive mathematical models. Next illustrative applications of the models are used. Students practice similar applications in homework before they are tested on exams to do the same sort of things. The only motivation to learn is that the material will be important later in the curriculum or their careers which are not a good motivator (Price & Felder, 2013).

Inductive teaching and learning encompass a range of instructional methods. They are learner or student-centered which means they impose more responsibility on students for their learning than the deductive approach. They are constructivist methods where students construct their version of reality rather than absorbing the teacher's version. The methods usually involve discussing questions and solving problems in class which is known as active learning. Much of the work is done in groups known as collaborative or cooperative learning (Prince & Felder, 2013).

There are two well-supported findings from the learning sciences. First, learners are more alike than different when how they learn is evaluated. Second, effective personalization should begin with the learner's prior knowledge. If students are allowed to make decisions about the instructional methods – only selecting what they prefer – it will probably be ineffective in learning. The more ways a learner is exposed to an idea such as multiple sensory modalities or to different perspectives it is likely the knowledge will be more durable. The individual differences in how we learn are minor in importance to our shared cognitive architecture (Pearson, 2016).

Teachers

Characteristics of teachers, similar to students, involve personal and professional demographics, preferred styles, and perceptions of their role in financial learning.

Extensive research regarding memory and learning has illustrated several effective instructional strategies that are relevant to financial literacy. One method is for students to engage in retrieval practice through frequent quizzes and low stake testing, which provides greater learning gains compared to information transmission. Second, space instruction and the review of a topic over some time rather than cramming instruction into one session can promote gains in learning for students. Last, instruction should prompt students to ask questions, which can significantly improve a student's grasp of the material. These methods have been consistently backed by results of robust learning (Pearson, 2016).

Instruction should not be tailored to students learning preferences rather instruction should be in response to student's prior knowledge, which is powerful for improving learning. An example connects preexisting ideas with novel material. It is better to use diagnostic tests and learner surveys to gain an understanding of previous knowledge. Later, tailor instructional techniques to improve learner outcomes (Pearson, 2016).

Qualified educators are vital because they can be the most important influence on student success. Effective educators are vital because they can be the most important influence on student success. Effective educators can achieve more positive and better outcomes. They understand that a one-size-fits-all mentality will not produce high-quality financial education. The program should utilize measures as a barometer of the program's progress and serve as a guide to its further development (Great Lakes, 2016).

The National Financial Education Council provides a step-by-step process to teach financial literacy to adults the most pressing need is budgeting skills and debt reduction. It was felt online delivery might be a viable option with reinforcement for completing lessons. Selecting focal points comes next that is focusing on subjects that address urgent needs. The next step is choosing the educator, and that would be a certified financial education instructor with financing literacy certification. Next, select a curriculum with a modular design and engaging with interactive activities that are suited to online delivery. The seventh step measure using accurate tools to check for a positive impact such as productivity measures. The final step is to increase satisfaction with ongoing lessons to reinforce progress. Strive to reinforce knowledge over time with an upward trajectory a reward system should be used (Financial Educators Council.org).

D & E, a financial education and training institute uses three main categories to classify methods of financial education delivery. They are (1) individual, (2) small group, and (3) mass media methods. Financial education is not different from other educational programs where the educational setting can be formal, non-formal, and informal. Formal settings would be credit courses at high schools and colleges. Non-formal settings would be workshops and counseling programs outside of formal educational institutions like non-profits. Finally, informal settings would be everyday interactions with people and mass media like news, work, and the internet.

Individual methods include face-to-face one-on-one counseling and telephone advising, online computer/internet learning, and text messages. Small group methods include face-to-face seminars/presentations, training workshops, workshop series, and credit courses offered through formal educational institutions.

When teachers of financial education apply participatory learning where students participate, discover, and explore it can result in a positive impact on financial learning. Teachers who engage students can increase students' aspirations, motivation, and wise financial decision-making. Students can learn through trial and error in a controlled setting. For low-income students' programs that provide active engagement with financial decision-making can help address disparities in financial literacy. The use of participatory and experimental components serves as a supplement and not a replacement for traditional teacher-led instruction (Kasman, Heuberger, & Hammond, 2018). It is possible to do this online/virtually a good example would be the use of the discussion board.

The key role of parents who may support teachers play in how children develop financial norms and knowledge is greater than other factors. Children cite their parents as the primary and the most preferred source of financial information. Parent involvement has produced a strong association between parents and children's financial literacy. Financial education programs need to recognize the importance that parents play in their children's financial literacy development, there are take-home tools and resources such as parent guides with participatory child-parent activities. It appears to be a relationship between formal instruction versus informal social learning at home.

Interns from the Rockefeller Institute of Government conducted focus groups with students on three different SUNY campuses. They found many parents do not discuss family finances with children. The students were disappointed with their high school counselors. No handholding or any one-on-one counseling. The student to counselor ratio was at a severe imbalance (Seitz, 2020).

Appropriate teacher training component in financial education programs advances higher teacher confidence, knowledge, and preparedness. Teachers often assess that they are unprepared to deliver financial literacy materials. Brookings Institute reports a Way and Holden (2009) survey of K-12 teachers where 30% taught financial literacy material, but 88% of those surveyed felt unqualified to teach them. Of the 30% who taught financial literacy, the percentage that feels financial education should be a high school requirement is 89%. The reason they felt unqualified to teach it is that they are unfamiliar with Jump$tart national standards, and some claim they have not been taught financial literacy concepts through either formal or informal training. Few states require teachers either to obtain a certification where a teacher would have to demonstrate knowledge and competency in financial literacy teaching it. States that truly want to improve K-12 financial literacy should improve professional development opportunities and resources for teachers (Kasman et al. 2018).

Rigorous evaluation can help determine which aspects of a financial literacy program work, and for whom? The problem is good evaluation is lacking many state education departments do very little to evaluate the results of financial literacy programs. There are three obstacles to evaluating financial literacy programs. First, program leaders are not familiar with how to conduct an evaluation. Second, the evaluation is not treated as an integral component of the design. Third, there is a lack of a standardized approach or protocol to an evaluation which serves as an obstacle (Kasman et al. 2018).

An article by College Mouse (2014) discusses how to become a financial aid director. Financial aid directors oversee and supervise financial aid programs where their training normally requires a master's or doctorate. They usually start in lower-level positions to gain the essential skills and experience or complete internships. Still, others are certified financial planners or certified public accountants. The job requires a solid understanding of the financial aid process, the rules, regulations of the U.S. Department of Education, and they must be able to lead all of the financial aid activities. They will need excellent communication skills with interpersonal skills other essential characteristics are good judgment and problem-solving skills (Baker, 2014).

Ranzetta (2019) claims there is a need to develop more high school personal finance teachers. There should be a national push for curriculum and teacher professional development. To bring personal finance to high school students it is high school teachers who will make it happen. Teachers are most important to student achievement than any other aspect of schooling. If a law requires financial education, it should incorporate the requisite investment in teacher development. Currently, the majority of high school educators possess backgrounds teaching subjects other than personal finance. The result is that most teachers lack the confidence to teach the subject while the greater portion endorses financial education (Ranzetta, 2019).

Personal finance education works because well-educated students exhibit positive financial behaviors. When schools are given confident and knowledgeable teachers delivering a relevant curriculum, the probability of learning increases. Invest in teachers to achieve having every high school student in the U.S. take a personal finance course before they graduate (Ranzetta, 2019).

Mass media methods include web-based programs, interactive CD programs, TV programs, newsletters/papers, radio programs, and social media. To improve key financial skills, effective financial literacy approaches must be structured to make it easy for consumers to locate financial information, so they both understand and interpret financial information for decision-making, and to have the necessary skills to implement their decision. Programs should be designed to make it easier for people to obtain financial education it should be provided through various venues and at times to engage students during their education. Some examples include changing the options that are presented, try to remove hassles and barriers, finally attempt to add supports that can assist people as they bridge the gap that exists from actions and intentions (home.treasury.gov).

Content

The content of learning concerns what financial information and understanding are needed as well as how content is evaluated or assessed to ensure learning has occurred.

Fredman (2018) cites a study by Rand Corporation that reported groups who borrowed funds for their education demonstrated greater knowledge of the consequences of not repaying loans are more aware of the different repayment options compared to their peers from higher-income levels who did not borrow. The information from the study demonstrates general financial literacy and student loan literacy are two separate constructs and the experience of borrowing may lead to a better understanding of student loan terms. The output is based on the fact that students with lower financial literacy scores who borrowed answered more questions correctly about student loans than peers from higher income levels who did not borrow.

There are three basic questions, which are known as the “Big Three” (see Table 1) which allow for a deeper understanding of the content of financial literacy. Low levels of financial literacy correlate to ineffective spending and financial planning, poor borrowing, and problems with debt management. They identify aggregate differences in financial knowledge and recognize vulnerabilities within populations where programs of development may be implemented.

Table 1. Big Three Questions for Financial Literacy

1.) Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

More than $102**
Exactly $102
Less than $102
Do not know
Refuse to answer

2.) Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

More than today
Exactly the same
Less than today**
Do not know
Refuse to answer

3.) Please tell me whether this statement is true or false. "Buying a single company's stock usually provides a safer return than a stock mutual fund."

True
False**
Do not know
Refuse to answer

Lusardi, 2019

**Correct answers

Three important reasons to conduct financial education in schools the first reason is to expose young people to basic concepts. Next, it is schools that provide access to groups who may not have been exposed to it. Last schools can reduce the cost of acquiring financial literacy through scale and efficiency. Financial literacy enables students to capitalize on the plethora of financial products available and enhance sound financial decisions. Financial literacy should be viewed as a fundamental right and not a privilege because without it students and societies cannot reach their full potential (Lusardi, 2019).

Assessment of learning is important to understand what tools to provide for better decision making. To navigate the puzzle of daily financial decisions, the assessment provides information about what people know and what they should know. Financial decisions have a few fundamental concepts, and which are universal to every context and economic environment. Three of the concepts presented in Table 1 include numeracy, which is the ability to do interest rate calculations and comprehend interest compounding. The second is to understand inflation, and the third is to understand risk diversification. Ample evidence exists regarding the impact of financial literacy. It has been proven to affect saving and investment behavior, debt management, and borrowing practices. It translates into greater wealth people can plan for retirement because they understand interest compounding and can do calculations (Lusardi, 2019).

Colleges have the opportunity to educate students about financial topics. The focus groups reported feeling uninformed and a lack of transparency at the college level. Some suggestions from experts in making the FAFSA easier and automatically enrolling students in income-based repayment plans. Most students don't know about them or forget to recertify their income. A financial educator claims reaching students with early financial literacy training before they get to college is critical (Seitz, 2020).

Characteristics of a Financial Literacy Program

Financial literacy involves a set of performance outcomes including making informed judgments, take effective actions, understand financial choices, plan for the future, and managing related challenges. Student loan literacy is a subcomponent of financial literacy it involves also understanding college finance options and repayment plans (Seitz, 2020).

A purposeful curriculum should engage students as it meets the core educational standards but still be fun. The program must have the ability to bridge the gap between theory-based education and practical application in the real world. Learner topics should be selected based on reflecting on what information was gathered regarding the audience (NFEC, 2019). An assessment can determine topics based on the internal and external needs of the target audience. Some basic topics that should be included would be budgeting, credit managing, and loan repayment (Great Lakes, 2016).

Kaiser, Lusardi, Menkhoff, and Urban, (2020) reviewed the growing literature on the causal effects of financial education programs. In a meta-analysis of 76 randomized experiments, they reported that financial education interventions have sizable/significant effects on financial knowledge and financial behaviors. These results differ from the first meta-analysis of financial education literature. It builds on studies from the first meta-analysis of (Fernandes et al. 2014). The researchers observe the number of recent randomized control trials added to the database serves as the force for an increase in positive results of financial education effects on financial knowledge and financial behavior. The researchers encourage future research to report on the cost of their programs to get an estimate of cost-effectiveness.

National, institutional, and individual data should be used by higher education institutions so that they can determine the specific financial literacy needs of their students. Institutions can make use of the data to identify students most at risk using an evidence-based approach and immediately deploy resources. An example on the national level would be the National Postsecondary Student Aid Study (NPSAS) found that just 28% of students could answer three basic financial literacy questions. At the institutional level, Georgia State University performed a comprehensive analysis to target resources so that students could complete their degrees. GSU has raised bachelor's degree graduation from 32% to 54%. At the individual level of financial wellness, checkup has been used by certain institutions to identify a student's main source of stress, so they can structure and effective intervention (U. S. Department of the Treasury, 2021: home.treasury.gov).

LendEDU compared hundreds of colleges and universities to evaluate which schools had the best financial literacy programs in the country. LendEDU has ranked the top 50 programs which were based on three specifications such as the number of workshops and resources available, access to one-on-one financial consultation, and finally incentivizing programs like a scholarship for attending workshops. They did not look at effectiveness or decision making rather each specification was graded on a 50-point scale where 50 was the highest. They considered workshops and resources as the most important category. The second most important category was one-on-one financial counseling. They do not assess the effectiveness of the programs or evaluate financial decision making just graded schools on certain categories.

The program at Texas Tech University is considered one of the best it is called the Red to Black program. Some of its components include personalized coaching, presentations, and workshops with topics of creating spending plans and maximizing student loans. The program pushes students for academic and financial success (McCarthy, 2019).

Saint Paul College experienced a significant increase in the college's loan default rate which is not good for the college. A team conducted a literature review to research online financial literacy that is being used by colleges and universities. Through the project, it was evident that funds were not available to subscribe to an online program. However, they identified the *CashCourse* program which was produced by the National Endowment for Financial Education (NEFE) met all of their criteria and best of all is free. The program is flexible for general students to most at financial risk students. *CashCourse* is a comprehensive program as is it provides extensive tools and resources needed for all areas of personal finance. *CashCourse* is now the centerpiece of Saint Paul's financial literacy program (Bean, Distad, Mayne, & Kromminga, 2014).

Some key characteristics or principles are necessary for an effective financial literacy program. First, articulate specific goals for the financial literacy program or develop a clear vision. Next, there are content standards as the essential idea students need to know and also, they should be able to do. Another important principle is that all curricular programs should be relevant. The community will serve as an essential component of a quality program. Besides, a quality financial literacy program will connect all curricular areas. All programs must be continually evaluated for effectiveness. Evaluations should be connected back to the original mission and vision of the program (dpi.wi.gov.).

The curriculum of financial literacy should be flexible to meet the needs of all students. Teachers will want to learn the best strategies to teach financial literacy concepts within different curricular areas. There will be a need to identify the gaps and overlaps regarding what is currently being taught.

Evaluating a Financial Literacy Program

The key question which evaluation should ask is how do we know that we are making a difference? The evaluation cycle includes three steps: the first is planning and evaluation, which involves determining the purpose and scope of the evaluation. The second stage is implementing the evaluation which involves collecting and analyzing data and information. Step three is reporting and using evaluation findings. The key is that results are effectively communicated and used (INFE, 2010).

Planning the evaluation which entails being clear on why the evaluation is needed. To define the purpose and scope of evaluation should include input from some significant groups and organizations which have a significant interest in how the program functions. It is important to identify and involve stakeholders and other key people. Decide on the kind of evaluation that will be needed, which means choose and evaluating the design and determine methods of collecting data (INFE, 2010).

The National Association of Student Financial Aid Administrators (NASFAA) has launched its certified financial administrators' program. There is a lack of regulation for financial literacy education at higher education institutions with the result of gaps in terms of standardized results for financial aid officers. The certification will be popular among young financial aid professionals as it gives them access to education that can help them advance in their careers (Botelho, 2019).

Regarding student loan financial literacy, students will want an overview of the entire repayment process. Next, more detail will be required for different aspects of the repayment process. All repayment options should be clearly stated along with different repayment options available based on income. If a student is a dropout with student loan debt, they should be given a seminar about the repayment process with contact information about where they can get help during the repayment process. When students go into repayment, they should receive text messages about when their payment will be due. Fundamentally, students should receive as much help that is necessary during repayment. They should be closely monitored and contacted when they become delinquent.

Context

The context of acquiring financial literacy has been influenced at two levels. The external context refers to forces that affect learning from the broader environment. These include health and safety (including the threat of COVID-19), political, ethical, financial, and many others. Contextual forces also include characteristics of the internal learning environment that occur in the learning transformation process. Three internal contextual elements are relevant: These concern the mode or channel of communication and the theory of learning applied.

External Context

Regarding financial forces in the environment, for example, in one north Philadelphia neighborhood, a teacher started a personal finance program that teaches student budgeting, savings, and investing and allows them to get paid up to $5,000 a year (Kutz, 2019). Olney which became a charter school in 2011 is a low-income school in a demographically low-income community that places financial strain on teachers and students. The finance program is the only one in the country that not only directly pays students but also helps them to open checking and savings accounts. The students take three personal finance classes. They have the option to work as many or few hours as they would like within the school to earn money. Many students claim they joined the personal finance curriculum because they can make money with jobs, but the class is valuable, even if they do not make money. Students acquire financial literacy from the program and the payments to students reduces financial burdens which have reduced violence in the community, perhaps because it is helping mature faster (Kutz, 2019).

Financial aid administrators should be aware of the various financial stressors that can affect student’s lives and learning. A few include food insecurity, homelessness, and reliable childcare (Botelho, 2019). A student’s financial wellness education program can improve overall student financial literacy while it expands student's knowledge of sources of education funding. Student financial wellness is more than tuition and loans. It encompasses attitudes, behavior along with financial knowledge. Student financial wellness programs can lower student default rates, decrease financial stress, help improve academic performance and graduation rates (iGrad, 2020).

Ogden (2019) suggests that external contextual forces that influence learning include the political climate, financial factors, the social environment, ethical considerations, legal restraints, health and safety measures, human emotions, and the environment itself. He feels that as financial education programs in school vary widely and as external influences vary widely, it is an economic folly for schools to spend money on standardized personal finance classes and force students to attend.

A strong student financial wellness program can help students understand financial aid, eligibility, paperwork, learn about funding options, create a financial plan, and understand how student loan repayment works. Financial stress can have a direct effect on the physical and mental health of students. Financial wellness can teach students about debt and what they can do to keep it from taking over their budget. When academic institutions make student success a priority graduation rates will increase. A component of student success is to get students to understand their finances and create a reasonable financial plan to complete college and repay student loans (iGrad, 2020).

The Student Financial Wellness Survey produced by the Trellis Company allows institutions to better understand the various facets of student financial wellness on their campus. The survey finds that colleges must monitor the financial wellness of students closely to meet their student retention initiatives. The survey provides a mechanism that institutions can use to assess the financial wellness of students. The survey provides a benchmark for interventions and to identify students at risk of dropping out. Some interesting findings from the survey include that roughly three out of four students have an unmet need which could prevent their persistence in college (Kepler, Cornett, Fletcher, & Webster, 2020).

Campuses are now implementing emergency programs to overcome obstacles such as car repairs, daycare coverage, rent assistance, and utility bill spikes. Some institutions supplement student loan counseling with one-on-one or small group sessions for more personalized information. They target specialized counseling to specific students to maximize the effectiveness of their resources. Colleges are building crisis support teams to case manage basic needs such as mental health crises or financial crises. Emergency support services are provided for students such as food pantries, temporary housing, or emergency funding. Colleges are reconsidering policies for student housing for students who are housing insecure. Certain campuses provide low-price and healthy food options even food vouchers. Institutions have investigated reducing supplemental costs of education such as textbooks and materials. There are strong financial wellness programs and other resources so that students can attain their academic potential (Kepler et al., 2020).

A dissertation by Begich (2017) tried to understand the financial literacy of women as females account for the majority of college students. The study examined financial literacy for women with a graduate-level degree by asking, what does financial literacy do for women as they make their educational decisions and how their student loans have impacted aspects of their life? Using a phenomenology methodology, Begich engaged in lengthy repeated semi-structured interviews and discussions to find patterns of incidents and events.

The results of the study found a need for more financial literacy education that is specific to student loans. Women did not want more paperwork or online exams; rather they wanted in-depth and a real-world adaptation of finance and student loans. The results indicate students are ill-equipped to process information before they gain a limited knowledge of financial literacy. Other problems they revealed were emotional distress and avoidance of economic investment due to student loan debt (Begich, 2017). Further research will be needed for the emphasis on parental involvement. Finally, financial literacy should start at an early age not when students are leaving for college because the topic is very complex it can be linked to reading literacy.

Internal Context

Internal context refers to contextual characteristics that influence the interactions of the students, teachers, and content, and primarily concern the methods of delivery and the theory of learning.

Channels of Communication

There are a variety of delivery methods for learning financial literacy. The word delivery means how content is communicated between the student/learner and teacher. The three delivery methods include face-to-face instruction, technology-mediated online instruction, and blended instruction, which is a relatively new trend that features face-to-face and online modes of instruction to give more control to the learner (NFEC, 2020).

Online delivery can be synchronous which means it occurs in “real-time” with the instructor and students working together in an online/virtual class with defined start and end times. Using Zoom or another platform, students may see and hear the instructor and each other as they move through the content. Asynchronous learning does not require any real-time interaction; rather, content and learning requirements are available to a student online when it is convenient to his/her schedule. The instructor visits the online site to read and evaluate the written work of students.

The pacing option that is selected will affect the way students participate. The test-based achievement option incorporates adaptive pathing elements to assist students so that they can better grasp concepts and lessons that are harder to understand. Adaptive pathing allows participants who cannot pass tests to complete a review module that provides additional material to help explain the topic. After they are finished with the module and successfully pass the retest, they will be back on target to complete the remainder of the course (NFEC, 2020).

In-person instruction – suits young children, teenagers, and young adolescents who have not entered the workforce according to Barindra De, Sr. Manager of Business Development, and Corporate Training at Palium Software Services (2018). Through classrooms, they can interact with people who are their age. Other benefits include discipline, a regular schedule, better fitness, and mental alertness. Through face-to-face learning, students and teachers get to know each other. Teachers can evaluate strengths and weaknesses, act as mentors, and provide career guidance.

Traditional classrooms allow students to share their views and clarify queries with teachers thus they get an immediate response. Book and classroom notes are useful for studying. The question and answer pattern with teacher suggestions is more helpful for learning than what is available on the internet. The continuous interaction between students and teachers helps student’s anxiety with a test which online guidance does not. It can motivate students to obtain higher marks (De, 2018).

Advantages of in-person instruction, including an organized structure where it is preplanned. Punctuality and discipline give students a feeling of uniformity. Everyone has a sense of belonging or inclusiveness. Face-to-face learning develops relationships socializing and interaction with students. Traditional education encourages competitiveness and brings out the best in themselves. The last advantage is facilities like labs and on-hand training (Truman, 2017).

Online education –can take two major forms the first is for-credit courses offered by higher education institutions. The second form is professional training and certification training. It is this type of online learning that is targeted at professionals or students who want training or students who want training or preparation for certification exams. Criticism of online education is its lack of quality control, specifically high-quality faculty. A greater number of institutions of higher learning have either introduced or reinforced their online education platform (Yu & Hu, 2016).

New education technology has given online education the chance to become more manageable and accessible. Through the loss of traditional features, online education offers flexibility and low cost. One on one, lessons through online education have placed teacher-student interaction at a new level. Online education has the potential to be a compliment or alternative to traditional education. Online education does need regulation with issues of accreditation and quality control (Yu & Hu, 2016).

Some of the advantages of online learning include machine learning algorithms with pattern recognition that can personalize the content for each individual. If a student struggles with a concept, the platform can adjust the e-learning content to provide extra information to assist the student. Another advantage is the instantaneous feedback loop within the platform that other online students provide helps to improve the learning curve. Now reticent or shy people have the opportunity to participate in class discussion much easier than face to face (Kosal, 2020).

Online offers a big-time advantage with convenience and schedules; the online learning industry can stay up to date with the latest developments. Online courses are more affordable with no commuting costs with some textbooks available online at no cost. In the future, online learning could include virtual reality or augmented reality with more advanced learning algorithms (Kosal, 2020).

Hybrid learning also referred to as blended learning is an approach to course delivery where face-to-face classroom instruction is combined with an online approach. The result is a reduction of time in traditional face-to-face as more is handled online. The in-person component would include collaborative learning as online would focus on multimedia-enhanced material with channels for discussion. Hybrid learning has another name, and that is blended learning. Hybrid allows students to interact with content as they engage with activities before, during, or after face to face. A flipped classroom allows the exploration of concepts and review material not in the classroom (Penn State, 2019).

In blended or hybrid courses are where students complete the majority of their work online, but some of the training will have to take place in person. The classes can take place on a university campus or any suitable place. The benefits of blended courses include a reduction in campus time. So, with limited class time, a greater number can attend due to flexibility. Blended courses provide hands-on opportunities that are good for courses with labs, field trips, and a guest speaker to enhance real-life learning (Monson, 2017).

Blended learning also offers a social environment for networking and interaction with faculty or other students. The cons of blend courses include scheduling factors since it is difficult to set up a schedule that agrees with all the participants. Location is the second con for blended courses, because students not from the immediate area may not be able to take the class or meet in the actual location (Monson, 2017).

It is possible to claim that hybrid education could be the breath of the future and also the death of teaching as we know it. A comparison should be made between a multifaceted, hybrid online, self-directed, and complexity-based model with traditional education (in-person). The twenty-first century is the age of information overload with almost limitless access to knowledge. Using the traditional instructional model looks increasingly archaic. But for a large segment of higher education, it is the path of least resistance, which is the continually preferred approach (Newbold, 2018).

The great obstacle is to adopt an instructional model that is vastly different from the way many people were trained and educated. It should be noted that digital and higher education are not killing faculty jobs. However, the possibility does exist that they will extinguish the traditional faculty job description that has been long understood. Education in the future will demand an entirely new approach to preparing and employing teachers due to a completely different type of interaction with students.

A hybrid online format is designed for students living in any location. Students come to campus for an all-day residency. They will work with people in their cohort where they meet virtually and in person. They meet with faculty either in person or online. Each subject area is divided into individual and team projects. Students then select organizations such as businesses, governments, and nonprofits. They will collaborate with these entities as they learn content from faculties, mentors, and coaches. The schedule will consist of flexible deadlines as they work at their own pace to pass competency standards (Newbold, 2018).

Hybrid education is far more unpredictable as it changes every semester. Innovative hybrid educational models allow students to discover how learning works in a very uncontrolled and unpredictable environment. The goal is to avoid John Dewey’s mental rut with stagnation since the new generation of learners does not think and learn as humans traditionally have. A new world with new learners who will thrive better in hybrid environments (Newbold, 2018).

Technology-based learning – teachers have been embracing new technological tools that they incorporate in their teaching practice; with these tools, learning is not limited to educational settings. Educators fully understand the benefits of instruction that is led by this new technology. The older teaching practices are being replaced or supplemented with entirely new instruction methods. There are learning approaches that have been designed to work with this new technology (Kruse, 2011).

Instead of teaching facts, there has been a movement towards competency development such as problem-solving and conceptual understanding. The goal is to think creatively and find solutions to complex issues. Technology facilitates collaboration on a global scale. Technology allows learning to take place everywhere. Technological training preferences cater to different learning preferences.

Technology is promoting competency-based education, which focuses on effective learning over time-based learning. A content-bound approach will take the time factor out and replace it with the open learning outcome. Active learning is also known as hands-on learning where students learn from experience by trying out different learning methods. The teacher’s new role is to serve as a guide and not an active player. There is a movement from subject-oriented approaches toward integrated where different learning areas are combined with different tech tools (Kruse, 2011).

Technology-based learning may be defined as learning by electronic technology. E-learning has replaced technology-based learning as the term of choice in scholarship and industry. Technology-based learning has the potential for substantially transforming the way learning takes place due to its many advantages. First, it fosters greater accessibility to learning with any time and anywhere delivery. Second, it is scalable to large or small groups, because it accommodates a large number of learners at little extra cost and smaller groups of learners who could not participate in traditional enrollment, since there is a lack of enrollment. Third, the content can be updated when the need arises as the cost of replacing materials or retraining instructors is significantly less (Koller, Harvey, & Magnotta, 2005).

The advantage for the learner is that technology-based learning is self-paced, matched to the learner's needs, and emphasizes discovery learning. The learner also benefits because it promotes greater comprehension and retention of complex materials. It does this through hands-on manipulation of course materials while it uses simulation and game-playing.

Challenges that technology-based learning must resolve: first, the digital divide of low computer literacy rates and lack of access to tech in some learner populations. Second, social loafing such as students who work less diligently become frustrated, which leads to less engagement from the absence of the instructor or learner-to-learner interaction. Third, it has the characteristic of high attrition rates with learners, technological incompatibility. Last, is the lack of credibility.

There is a rapid acceleration with technological change, which places a huge demand on education and workforce training. The rate of change requires much more training and retraining of people on the job than in the past. More knowledge workers require frequent retraining. It is important to update the worker's skills quickly as the need arises since it is critical. Companies must be efficient at this to maintain a competitive advantage (Koller, et al., 2005).

Theories of Learning

Pedagogy is the general term used to describe all theories of learning although distinct theories and approaches have been described. Variations in cognitive skills, capacity, and personal experiences contribute to differences in how people learn so teacher education must address the different ways of learning. Selecting from a variety of learning theories can enhance the classroom for a better learning environment for all students (WGU.edu, 2020).

<u>Cognitive Learning Theory.</u> Cognitive learning theory focuses on the mental process or the way people think. The cognitive theory claims that internal thoughts and external forces both contribute to the cognitive process. Students understanding of their thought process will help them learn. Behaviorism learning theory concerns how a student behaves and is based on their interactions with their environment. Behaviors are influenced and learned from external forces, not internal forces. A popular element of behaviorism is positive reinforcement which can help students move forward by meeting learning objectives.

<u>Constructivism Learning Theory.</u> Constructivism learning theory is where students create their learning based on their previous experience. Learning is an active process that is personal and unique for each student. Teachers serve as a guide to help students create their learning and understanding based on their past. Constructivism relies on personal construction for meaning from the learner by way of their experience. The meaning results from the interaction of previous knowledge and new events. The central idea of constructivism is the learner will apply new knowledge to the foundation of previous learning. Another important principle of constructivism is that learning is an active process and not a passive process. The learner willingly constructs

meaning when they are actively engaged with the world. All knowledge is socially constructed since we do it together through interaction and not an abstract idea (Mcleod, 2019).

Furthermore, knowledge is personal as the learner has their point of view which is distinctive. The same lesson may produce different for each student. Through subjective interpretations. Finally, the constructivist theory claims that learning exists in the mind and is not required to match any real-world reality. As a result, learners develop their mental model of the world which is based on their perceptions of the world (Mcleod, 2019).

<u>Pedagogy.</u> The pedagogical approach emphasizes that it is the teacher who will assume responsibility for making decisions not only about what will be learned but how and when it will be learned because teachers direct learning. By definition, pedagogy is the art and science of educating children. It is an authoritarian technique that is teacher-focused that dominated formal education. Great teachers of ancient times such as Confucius and Plato did not use authoritarian techniques; they saw education as an active inquiry, not passive reception. John Dewey emphasized learning using various activities and not rely on a teacher-focused curriculum. Dewey stresses guided experience and not authoritarian instruction (Marciaconner, 2020).

The behaviorist pedagogical approach claims learning is teacher-centered using direct instruction with lectured-based lessons. Behaviorism where the teacher is the sole authority is gained through a curriculum where the subject is taught discretely it is not topic-based learning. The mixture includes demonstration, rote learning, and choral repetition, which are teacher-led. The curriculum has a progressive teaching style where teachers must build activities to facilitate learning with constructivism the emphasis is on learning through experience and reflection. The constructivist approach incorporates project work and inquiry-based learning.

Liberationism – is where value is placed with the teacher as a learner and the class discusses subjects together (Tes, 2018). The Pedagogical Approach could contribute to financial literacy through face to face classroom instruction along with seminars and workshops.

Andragogy. Andragogy is the theory of learning where the emphasis is on adults during learning activities. During learning activities group interaction is of utmost importance where teaching and learning methods encourage work in groups. Andragogy involves a process of self-diagnosis of the need for learning. A model is constructed of competencies or characteristics to achieve a performance level. Diagnostic experiences that are provided to assess competencies assistance will be provided to cover gaps between competencies and the model. A clear sense of direction for self-improvement serves as a motivation to learn. Aspects of Andragogy include the learner is self-directed where they put into practice effectual learning methods. The use of technology is indispensable as learners are responsible for their learning. Andragogy can make a significant contribution to financial literacy. It can do it through small groups or online instruction.

The six principles of andragogy include learning that matches the expectations of the learner. The learner will emphasize the learning features that will be useful for his or her work. Next learning is interactive. Interaction with others renders a significant contribution to desired academic outcomes. Specific strategies promote joint decision-making. They are encouraged to ask questions and to express their viewpoints. The third principle is that learning is based on actual experiences. The experiences are either positive or negative. The positive experiences enrich their lives, and negative experiences should be avoided. Fourth learning occurs with reflective thinking, which is a well-known approach because it will enhance their learning. The fifth principle is that learning is based on respect for the learners. It will help instructors, and students respect each other they will communicate and work to collaborate achievement of academic goals (Kapur, 2019). The last principle of learning experience takes place in a trusting environment. A trusting environment where support provides solutions to errors to achieve desired objectives. Again, andragogy does refer to principles and methods that are related to adult education (Kapur, 2019).

Heutagogy. Heutagogy is self-determined learning. This theory is a holistic and learner-centered approach. Heutagogy was developed as an extension of andragogy. With heutagogy, the learner is a major agent for their learning. It is the learner who is at the center of the learning process and not the teacher or the curriculum. It differs from andragogy because of its emphasis on developing capability, self-reflection, and metacognition which is an understanding of one's learning process. Heutagogy draws on more recent advances in neuroscience, which highlights how people learn at the cellular level. It supports learner-centered approaches and casts doubt on much of the current orthodoxy surrounding teaching methods (Blaschke & Hase, 2015). Heutagogy is well suited to financial literacy it would be most beneficial for online learning from websites.

When designing for heutagogy there are many design principles for learning that can be applied, and it does not matter what the context is. First, learners should be involved in negotiating what and how they will learn throughout the entire design and learning process. Next, the curricula should be flexible as it accounts for learner questions and motivation with shifts as a result of things that have been learned (Blaschke & Hase, 2015).

There should be an understanding between teacher and learner regarding how learning outcomes will be assessed. The teacher will serve as a guide for the learner as they provide formative feedback that is personalized so it will meet the needs of the learner. Finally, the learning environment must provide opportunities so that learners have the chance to explore and reflect on what exactly they have learned and how (Blaschke & Hase, 2015).

The epistemologies just discussed are important for a curriculum and learning. The techniques that will be utilized will be selected based on content and student need. When constructing a curriculum, the specific contexts of educational theories from pedagogy through heutagogy might be desired for multiple reasons. Andragogical practices typically are used after the student is an undergraduate. A fast-maturing student might feel constrained by pedagogical practices. Furthermore, some adult students are not ready for andragogical methods and will still need pedagogical practices. If teaching 20-30 students, it may not be possible to personalize the curriculum for each student (Halupa, 2015).

Conclusions

The influences and interactions of internal and external context on students, teachers, and content co-produce acquiring financial literacy. The internal context/environment includes characteristics of pedagogy and the channels of communication used by teachers to provide content about student loans and responsibilities for repayment. The external context/environment includes influences and interactions of political, financial, social, and other elements that interact with the student's capacity to learn, the teacher's pedagogy, and the content selected and provided.

To align student, teacher, content, and context – with the intention of maximizing the learning of financial literacy, the following questions must be answered:

<u>Student</u>

Does the learner comprehend the materials that are presented? Does the learner demonstrate an understanding of new information? Which formats are suitable for the student learner? Does the learner have access to the information or are they aware it exists and know where to find it? Is the student engaged and is there an open dialogue that allows for questions and answers along with an open discussion to tie up loose ends as further understanding?

<u>Teacher</u>

Does the facilitator reach the students with relevant information they can understand or is the teacher teaching over their heads and boring them to death? Does the teacher hold their interest where the students are engaged and provide feedback to their mentor? Does the audience respond with relevant questions and show curiosity? Do students look intimidated by the material and are they afraid to ask questions? Does the teacher present the material in a format that provides relevant background information, so the student does not become lost or confused?

Does the teacher guide the students and field questions to help them understand? Does the teacher know the audience and what their needs might be? Are references provided for the students, so they can gain a better understanding? Are examples and demonstrations provided so the student can grasp the value of the information in real-time?

<u>Content</u>

Is the proper content provided that can enhance the student’s understanding of the student loan process? The correct materials should be provided that can ensure that the optimal decision is reached. What is the best financial knowledge or information that will reduce errors? Ensure that proper planning takes place and the optimal or correct valid choices will be reached. Is relevant valuable information provided that is the key to decision making? With this information, will the student exhibit the needed skills and behavior of a financially literate person? Information should be crucial for decisions making that does not overwhelm or pose a burden that is easy to understand and digest.

Context

The external context centers on the health and safety of Covid-19. Will online or e-learning replace face to face or is it just a temporary solution that will be placed on the back burner as Covid-19 loses its grip on higher education? Do political questions focus on the new role that government will play as the emphasis changes from growing the economy to growing the government? External context ethical questions might look at are all the various repayment options causing borrowers to borrow over their capacity to pay? Forgiveness questions might consider tax consequences of loan forgiveness.

Application of internal context might investigate if it is better that education is authoritarian or lets the instructor serve as a guide who helps the student find their way? Another internal context is the form of communication is it better that most instruction is in-person or face to face or should education place residence on new technology that uses a variety of communication methods which includes a Zoom lecture.

CHAPTER FOUR

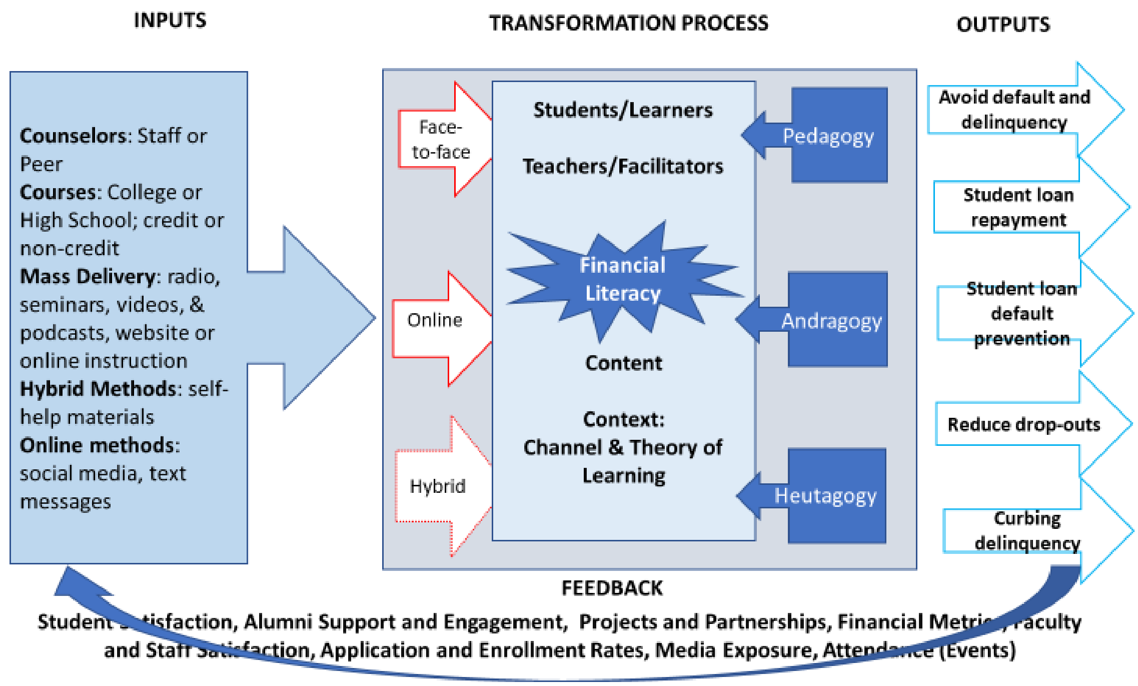
Summary and Evaluation of the Learning Model

This dissertation proposes a general hypothesis that if students (potential borrowers) have a set of incoming characteristics, and if teachers (providers of financial information) are qualified and competent to present relevant information, and if the content of the information is appropriate and on-going, and if the context is supportive, then the interactions among these elements have a greater potential and likelihood to co-produce financial literacy learning, and this will decrease the student loan default rate. The model to support this hypothesis posits a system with inputs, an internal transformation process, outcomes, and a feedback loop. The transformation process is where the interactions among students x teachers x content x context occurs. The premise, moreover, is that financial literacy learning is complex and non-linear; no single element or pair of elements can explain financial literacy learning, and no direct linear causal sequence of elements will explain financial literacy learning.

Five research questions were posed that followed from the hypothesis and the premises. First, what are the characteristics, approaches, and processes of the prospective borrowers who intend to gain student loan financial aid information? Second, what are the characteristics, methods, and processes of those responsible for educating prospective borrowers about student loan information? Third, what are the desirable and essential characteristics of the information, i.e., the content appropriate for student loan financial aid information? Fourth, what are the characteristics of the mode of communication and theory of learning, i.e., the context used to communicate student loan financial aid information? Fifth, if the system elements consisting of students, teachers, content, and context are integrated, will this facilitate learning financial literacy and decrease the student loan default rate? Each question will be discussed and answered.

If learning financial literacy is a system, then the student default rate is an output of that system which results due to a set of inputs and a transformation process. When the inputs are adequate, and the elements of the transformation process are well integrated then positive financial literacy is learned, which reduces student debt and default rates. When the inputs are inadequate, and the elements of the transformation process are poorly integrated then financial literacy is poorly learned, which increases default and delinquency, repayment, and drop-outs (Figure 7).

Figure 7. System of Learning/Acquiring Financial Literacy



Inputs

<u>Students</u>

To learn/acquire financial literacy, one important input is the degree to which staff or peer counselors are available to support formal learning. Staff needs to be motivated and qualified; peer counselors need to be identified, motivated and available. For example, at Thomas Jefferson University, finance students formed Jeff Invest, a "club dedicated to improving their financial literacy." This informal peer approach with a faculty sponsor has led students to report improved leadership and communication skills, and improved understanding of financial topics. The formal evaluation has not yet been reported.

Formal or informal courses could be presented by the high school or at the college one attends and could be credit courses that serve as part of the curriculum, or they could be non-credit courses. To support these, academic institutions and professional consulting providers would make available formats that include group counseling sessions or individual counseling sessions, which could even be online or in person.

Teachers

Due to variations in student's cognitive skills, capacity, and personal experiences, there are differences in how students learn. Teachers may select from a variety of learning theories that will give all students a richer learning environment. With cognitive theory, teachers can give students a better understanding of their thought processes, which will lead to better understanding. Behaviorism learning theory is based on how students interact with their environment. Here teachers can use positive reinforcement, which will help students move forward as they accomplish their objectives. Constructivism learning theory where students rely on learning from previous experience. Using constructivism, the teacher can apply new knowledge to the student foundation of previous learning, they will find meaning by way of their experiences.

Although teachers were trained to teach face to face based on their backgrounds, they should be able to adapt to fully online or a hybrid approach of face-to-face and online blend. Through the transformation process, teachers can mix the different delivery methods or technologies with various learning theories to find the right combination that will promote a premium education process. Whether it is authoritarian through face-to-face instruction or guide the learner with a mixture of online approaches, so they can find the answer.

Mindset

With mindset, the concern is with the borrower's attitudes or thought process. Are they risk-averse or are they comfortable with a lot of debt? Do they have a career path or an idea of the kind of installment payment they can handle? Are they truly financial literate or their level of student loan financial literacy is more than adequate that they are comfortable with their understanding of the repayment process? They have a general understanding of most of the repayment options. If the borrower is overwhelmed do they know where they can get help or repayment assistance? Mindset deals with flexibility are borrowers comfortable with new technologies or processes. Do they feel that their chosen profession will be able to pay off their debt in a timely fashion, or should they switch majors to something more lucrative?

Perhaps when it comes to flexibility, they could adopt text message reminders informing them of payments that are due. Draw on their knowledge of repayment options to use all the available plans in existence so that they can make a smooth transition through the repayment process.

Technology

As an input technology offers a wide variety of different options that borrowers can utilize to grasp student loan financial literacy. Starting with formal websites such as CashCourse, which addresses a large number of issues associated with student loans. Social media serves as a wonderful resource to pose questions and gain a fuller understanding of all aspects of financial aid. If group or individual counseling is not possible, a third alternative would be online counseling. Something that is not the latest technology, but is available in newer forms is instructional videos that are oriented to all the different facets of financial aid, which can be easily accessed through a smartphone.

Interactive websites can serve as phenomenal technology to improve financial education. They are available 24/7 so that they are convenient to borrowers. In reality, practically anything that is tech-oriented can be reached by a PC or smartphone. Just the state of today's technology alone should be able to resolve most problems that arise with student loans. The input of technology should expose all the different plans and options that borrowers can utilize to avoid delinquency and default.

Marketing

What good are the other inputs if borrowers are not aware they exist or do not know how to reach them? Marketing can inform the borrower of the services available and start the relationship. Marketing is in the position to promote growth and development. Marketing is a key input in the transformation process just so it can get started and mature. It will help the other elements to interact and get the ball rolling. Delivery methods can interact with learning theory. A big component of marketing is mass media which includes advertising promotions on radio, websites, television, social media, text messages, online ads, and other tech ads.

Marketing can educate the borrower of various services that are available so that they will know where to turn to get help. Marketing can inform borrowers of different services that exist that are out there so that they can use them to their advantage. Marketing can promote the higher education financial industry to the general public so that the other inputs can get engaged in the transformation process and reduce negative consequences such as delinquency and default. Starting with the initiative of marketing growth and development will take place that will help keep financial aid efficient.

Another vehicle to serve learning financial literacy would be to utilize mass delivery methods. The available methods include radio or podcasts. Seminars, symposiums, or workshops present other alternative options. Another favorite with students would be online instruction where they could interact with a website provided it is not live and at their convenience.

Still another possibility exists, and that is hybrid methods where part of the instruction is face to face, and another facet is online. Many self-help materials might use hybrid methods where something else supplements the instruction. Finally, other available inputs include online methods like social media, which is a fabulous way to reach students along with text messages to their smartphones.

Are counselors addressing the issues regarding loan programs with individual sessions or group sessions? Does the school culture or the culture where the student resides provide the needed information? Is there a promotion of information sources that one can utilize where people can gain access to valuable materials?

Transformation Process

Students

The characteristics of students include the following facts: art majors have the highest default rates while stem majors have the lowest default rates. Students from nonselective colleges have higher default rates regardless of the field of study. Selective colleges have much smaller default rates. A valuable way students learn student loan literacy is through actual hands-on experience. Students who do not complete a college degree have a greater chance of defaulting. Also, students who are non-completers are twice as likely to default at public institutions. Of the three financial education delivery methods, students preferred online methods over counseling centers and workshops. Some reasons include the fact that online resources are available 24/7; they are conveniently easy to use, and finally; students can remain anonymous.

To increase student awareness and efficacy for the student repayment process it was found that text reminders increased the timelines of loan repayment and the amount of the loan that is repaid. Students like that text messages will push people to make informed decisions and take the correct form of action. College students rank text messaging as their number one form of communication. Other popular forms of communication include social media, email, and the fourth method of phone calls.

A learning style that is popular with students is VARK, where V is visual, A is aural/auditory, R is read/write, and K is Kinaesthetic. Where an individual learns by carrying out specific tasks. A student's family background plays a significant influence on financial literacy level. Since payments are the most important factor in the financial socialization of students. When parents serve as positive financial role models then the student will make better financial decisions. Students who lack financial literacy are unable to estimate potential earnings and manage and pay off student loan debt. Students from for-profit colleges are noted for their higher default rates even though only nine percent of all college students in the country attend for-profit institutions.

Students from families that are upper or middle income may have access to social or cultural capital. This means they could have contact with people or information channels that can make the process easier. In the case of low-income families or first-generation collegegoers, it is less likely to be the case. Based on the college type, dropouts have higher default rates compared to graduates regardless of the degree program they studied. The longer students stay in school the more debt they accumulate. Students with a lower GPA have a higher level of student loan debt. Completion of a college degree is the strongest indicator of not defaulting. A student's selection of a major is an important factor that will impact student loan decisions. Since it is tied to expected future earnings, students do not understand many details about their student loans. Many rely on individuals and acquaintances who in a lot of cases lack a strong background for their advice.

Teachers

Qualified and effective instructors are vital because they can have the most effective influence on student success with effective educators, there is a more positive outcome and better achievement. They do not rely on a one-size-fits-all mentality because it will not produce high-quality results. Teachers prefer diagnostic tests and surveys to better assess previous knowledge. With this knowledge, they can better tailor instruction to improve learning. Effective instruction for teacher's retrieval practice is through frequent quizzes, and low stake testing improves learning gains over information transmission. Space instruction over a period of time instead of cramming instruction into one session. Finally, instruction should prompt questions that improve student's mastery of the material.

Financial education can be taught in formal, non-formal, and informal settings. Formal settings would be credit courses in high school and college. Non-formal such as workshops and counseling sessions away from the education setting. Informal settings include interactions with people and forms of mass media like news, work, and the internet. One-on-one counseling in low-income high schools may have a severe imbalance.

The reasons teachers give that they are unprepared to teach financial literacy include they have not taught financial literacy concepts through either formal or informal training. Few states require teachers to get certification or demonstrate knowledge or competency about the subject. The majority of teachers have backgrounds teaching subjects other than personal finance.

Teachers must use an assessment to understand if students do benefit from financial education. Assessment will also indicate if additional enhancement will be needed. Assessment data will help teachers evaluate teaching and curriculum effectiveness. Teachers have another option, and that is to utilize video in the classroom from platforms like YouTube, which makes it easy to upload lectures that can be shared with students who can process the information at their own pace. Since this is the age of flipped classrooms, and online learning students can learn more about the information without a teacher.

The desire for learning and teaching to be fun and engaging could cause students to be less willing to attempt to learn harder and more difficult material. Teachers will want their students to engage the brain at intense levels because that is how nature and biology work.

Teachers will want to focus on the domains of learning by using cognitive or thinking domains. To help students understand teachers will want students to construct meaning by interpreting, classifying, or explaining. To help students, analyze the material or concepts teachers can create spreadsheets, charts, diagrams, or graphs. Teachers use evaluation where judgments will be made based on criteria or standards. Methods that are popular with instructors are inductive teaching and learning because they use a range of instructional formats. Students are given more responsibility for their learning compared to a deductive approach. When a classroom approach is used for inductive teaching, it will involve more active learning by discussing questions and solving problems. Humans have a shared cognitive architecture so individual differences in how we learn are relatively minor in importance.

<u>Content</u>

The criteria that are used to rate financial education programs is first they consider workshops and resources as the category that is the most important. The next most important category is one-on-one financial counseling. Instructions are not assessed in the effectiveness of their programs or evaluate financial decision-making schools were only graded on certain categories. A highly-rated program offered to personalize coaching, presentation, and workshops that featured workshops about creating spending plans and maximizing student loans. Another feature of the program is that it pushed students to achieve academic and financial success.

Some key characteristics or principles are crucial to have for an effective financial literacy program. The program must have specific goals and articulate a clear vision. State the important content standards that are essential for students to know and be able to accomplish. They should be relevant for the student to succeed. A quality program will address the needs of the community. One purpose of a financial literacy program will be to connect all curricular areas. Continuous evaluation of programs is essential to test their effectiveness. A final purpose of evaluations is to make sure that the program follows its original mission and purpose.

Is focused on exactly what financial information and understanding will be needed along with how the content will be assessed or evaluated to ensure it has been mastered. One variable that was found to have a definitive and positive effect on student knowledge about their student loans, and that is current employment. General financial literacy and student loan literacy are two separate constructs where the experience of borrowing may lead to a stronger understanding of student loan terms.

Financial literacy includes the following performance outcomes such as making informed judgments, taking effective actions, understanding the financial choices, making plans for the future, and satisfying related challenges. Consider student loan literacy a subcomponent of financial literacy because it will focus on understanding college finance options and fully understanding all the various repayment plans. Basic topics for financial literacy include budgeting, credit managing, and loan repayment.

A financial literacy program should have specific goals and a clear vision. It should be structured with content standards, which are the essential ideas students must know and should be able to accomplish. The curricular program should be relevant as it addresses the needs of the community and connects all curricular areas. It is also essential that the financial literacy program be flexible and meet all student's needs.

An evaluation or assessment is vital to a financial program. It should have a defined purpose and scope that identifies stakeholders and other key people.

Context

The context includes external and internal environment along with culture and the other characteristics that affect learning. The external environment is the broader environment of the health, safety, political, ethical, financial to name a few. The internal environment includes sources of information, mode, or channel of communication, and the third is the theory of learning applied. Information sources pertain to where a person acquires financial literacy such as college, professional training, books, articles, radio, tv, etc. Financial literacy programs offer more than obtaining information, they are dynamic constructs of financial skills, behavior, experience, and opportunity.

The external context will focus on financial stressors such as insecurity, homelessness, and childcare. A student financial wellness program will encompass attitudes, behavior, and financial knowledge while it lowers student default rates and financial stress, improves academic performance and graduation rates.

Even before the pandemic, the United States has been on an unsustainable fiscal path. Factors that have contributed to the structural problem of the federal budget include an aging population, an increase in healthcare costs, and a lack of revenues to sustain the country's commitments. The Covid-19 crisis has only added to the devastating fiscal challenge. The reason the national debt matters is because it reduces the country's flexibility to both plans and responds to this urgent crisis. The growing interest costs make it more difficult to invest in the future to build infrastructure, enhance education, and create job growth (Peterson Foundation, 2021).

The national debt is a threat to critical safety net programs such as social security, Medicaid, Medicare, and unemployment compensation. The country still faces new emerging and ongoing challenges, which include climate change, affordable health care, international threats plus a competitive global economy. The constant and continuing borrowing will reduce the opportunities and prosperity of the newer generation. The country must prepare for the unexpected by making smart investments, investing in national security, and strengthening the safety net.

A strong economy depends on a stable fiscal foundation though the country spends one billion every day on interest so, instead of investing in the future the country is paying for the past. Where interest can overshadow priorities that include education, infrastructure, and scientific research. After the pandemic leaders will have to address the fiscal outlook and manage debt to promote growth and meet moral obligations to future generations (Peterson

Foundation, 2021).

A major external influence during 2020-2021 has been the global Covid-19 pandemic. It has influenced applications for new loans and payment of previous loans. The U.S. government has responded by suspending all federal student loan payments and stopping all interest charges until the end of September 2021. Furthermore, all collections and garnishments on federal student loans in default have ceased. The interest-free halt to repayment just pertains to federal that the Department of Education is the owner. This applies to most government-issued loans but some (FFELs) are commercially held as some Perkins loans are college-owned. With private loans, the lender might pause payments with forbearance. The Coronavirus pandemic has caused interest rates to plunge, which could make refinancing a good deal (Student Loan Hero, 2021).

One focus of internal context is channels of communication. The delivery method refers to how the content is communicated to students. Three noted delivery methods include face-to-face instruction, technology-mediated instruction, and blended instruction.

Another focus of the internal context is theories of learning are due to the fact, there are variations in cognitive skills, capacity, and personal experiences, which contribute to differences in how people learn so teacher education must address the various ways people learn. Several models and approaches are used in classrooms to either support or meet different kinds of learning.

<u>Students x Teachers x Content x Context</u>

The interaction of the four elements listed above occurs when the facilitator passes on financial knowledge, information, and skills to the student. The student uses this content from the facilitator which is the behaviors and understanding of how to make valid choices and to avoid error based on suboptimal decision making. The content is applied in the context of the external and internal environment which includes the culture and characteristics that affect learning. From this process, financial literacy will emerge when the interactions among the many elements are evident and there is a new understanding. Behavior, values, attitudes, and perspectives will support one's capacity to formulate and address financial problems and opportunities.

The process is known as a system approach to learning, which can lead to financial literacy. Here the focus is not on one or two elements of learning as the cause of the outcome. The system view of the process of learning and attaining literacy will emphasize understanding the relationships and interactions between elements to gauge outcomes.

Outputs of the Model

As suggested by the model (Figure 7) several outputs may be identified.

Performance Improvement

One result of acquiring/learning financial literacy includes improvement in the performance of those with this proficiency, including a chance to avoid default and delinquency. Financial literacy would equip students to understand student loan options and repayment options, which would produce improved decision making.

Financial and Brand

Another output would be a student with financial competency and proper loan repayment both of which would identify and brand the person as a responsible citizen. This would contribute to good credit which could help when seeking a mortgage or other loans.

Degrees and Certificates

Perhaps financial literacy is connected to seeking a business/finance degree? Regardless of the degree program they studied, it is dropouts who have higher default rates at every age compared to graduates when college type is considered. Students who attend private for-profit were found to have the highest default rate after their mid-twenties. An intervention approach for college graduates that provides education intending to reduce loan default is text messaging since they promote positive results for student loan repayment and other financial behavior.

<u>Research and Projects</u>

With financial literacy, one may be better at financial projects regardless of one's occupation?

<u>Executive Education and Consulting</u>

With financial literacy, one may be motivated to help others – such as the Jefferson Club that was described earlier.

Feedback Loop

The feedback loop consists of Student Satisfaction, Alumni Support and Engagement, Projects and Partnerships, Financial Metric, Faculty and Staff Satisfaction, Application and Enrollment Rates, Media Exposure, and Attendance (Events). The financial learning system has a feedback loop that enables the inputs and transformation to adapt to changes due to experience. There is an external or containing environmental context that informs and influences the other elements, including the transformation process.

Positive student satisfaction could have a big impact on the student body which would cause more students to want to participate in the process of gaining financial literacy. Feedback going to alumni could cause alumni to want to participate with the inputs as volunteers and assist students through teaching or active engagement with all inputs to help students master financial literacy. Projects and partnerships could be formed with the local community to get them to participate with the various inputs. The financial metric could measure the success rate of the inputs and indicate where resources should be channeled. Faculty and staff satisfaction could be increased with their active participation with the inputs where they openly engage with students and recent graduates even dropouts.

Application and enrollment rates are sure to increase with a successful implementation of all the input where applicants can see they can afford to attend and succeed. The inputs applied correctly can generate much-needed media exposure, which will raise people's awareness of all the possibilities that exist for prospects. Last, attendance and events complement each other when the inputs are applied because successful events will only lead to an increase in attendance.

Research Questions and Responses

(1) What are the characteristics, methods, and processes of the *prospective borrowers* who intend to gain student loan financial aid information?

As a borrower ranges from traditional high school to a mid-career adult returning to college. Prospective borrowers will return their focus on the major groups of inputs that are illustrated in Figure 5. The five major inputs can be grouped into one of five major categories: counselors, courses, mass delivery, hybrid methods, and online methods. While they are still a student in high school or college, they might want to use the resources at their institution.

Two popular **inputs** would be counselors who are either part of the staff or the other possibility would be fellow students who serve as peer counselors. They could interact face to face where they will receive hands-on attention. Their questions will be answered directly, and all the important details will be carefully explained. The process could be conducted online through a Zoom conference. A good introductory approach for all prospective borrowers would be to first take advantage of mass delivery methods, which include radio, seminars, videos, podcasts, websites, or online instruction. Mass delivery will give borrowers a platform or foundation that they can use to add to their knowledge base.

Two other inputs are extremely helpful to borrowers, and that is hybrid methods such as self-help materials and online methods, which include social media and text messages. These two inputs serve as ideal supplements that can be combined with other inputs to enrich the prospective borrowers' understanding of the entire student loan process.

It is safe to assume the student learner would want to be informed by the latest technology presumably their smartphone. Another safe assumption is that it would be easy to reach them through social media such as Facebook and Twitter. The student learner would be turned off by snail mail or a telephone call. They would prefer a text message or even an email. As far as social media is concerned, they could be directed towards a group where they could interact in various formats such as a Zoom conference. A special group could be formed; they could interact with members and listen to guest speakers.

Fan favorites with students are online methods such as social media and websites where they can interact at their convenience. The best way to inform students about these online methods would be through text messages to their smartphones. The transformation process would be inputs that are online or hybrid where the interaction would take place between students and teachers to facilitate learning. As to the theory of learning, it would be, for the most part, pedagogy, which is an authoritarian technique that is teacher-centered. Other aspects of learning would encompass principles of andragogy where group interaction is of the utmost importance. The transformation process would produce the many positive outputs of preventing student loan default, curbing delinquency, understanding student loan repayment, and avoiding dropouts.

First, borrowers are going to want information that is clear and concise. It should not be wordy or full of jargon. Bright colors and displays should be used that carefully outline the procedures in a format that is easy to understand. The websites of major loan servicers know how to illustrate the process in easy-to-understand terms. The information should not be confusing or convoluted. Information should be presented that is critical in importance that will help guide the decision-maker to find the right conclusion.

The student will first want an overview of the entire repayment process. Next, more detail will be required for different aspects of the repayment process. Clear illustrations should be provided that lead the learner about what is required at each stage of repayment. The student will desire information about how installment payments are determined and what their actual payment will be. All repayment and deferment options should be clearly stated along with the different repayment options that are available based on income.

The student would want information that is readily available and not have to perform extensive research. The information should be easy to access by a device. The library would not be one of their primary choices. Many would prefer to obtain information from their home and not during business hours. Others would not mind attending a seminar, workshop, group, or individual counseling session. It should be assumed that social media would be a popular alternative along with information that could be accessed by a device.

(2) What are the characteristics, methods, and processes of those *responsible for educating* prospective borrowers about student loan information?

Teachers and educators serve as a crucial component in the student loan financial literacy process since they enhance the prospective borrowers' understanding and ability to master the difficult student loan borrowing process. First, it will be necessary to look at the qualifications or credentials of the person providing the instruction or teaching the material. What is the appropriate background to pass on knowledge about student loans? Is a degree required or special certification? The form of instruction will next come into question.

Whether it is at the high school or college level the question of student loan financial literacy should be addressed right at the start, and that is at freshmen orientation. Next, it should be presented in first-year experience courses (Bean et al., 2014). Any student that desires financial aid should be given counseling or advising through one-on-one sessions that must be made mandatory for a student in these two groups. Multiple interventions with learners will be necessary with follow-up evaluations to check on the learner's progress and to check if further assistance will be necessary.

To engage students about the entire financial aid process, it will be necessary to try to reach them through several platforms or media contacts. The entire staff that will be involved with students during the financial aid process should be thoroughly trained and if possible certified.

When students graduate from college or drop out with student loan debt, they should be given a seminar about the repayment process with contact information about where they can get help during the repayment process. When students go into repayment, they should receive text messages about when their next payment will be due. Fundamentally, students receive as much help that is necessary during repayment. They should be closely monitored and contacted once they become delinquent. During high school and college students should be exposed to financial literacy and student loan financial literacy at multiple points and not all at once by different means. A financial aid education where students receive financial education where they are exposed to relevant material that will be later reinforced will be beneficial to them for the foreseeable future.

The teacher facilitator would want to engage students with a special seminar or workshop. The facilitator would probably want to add a non-credit course or hold a Zoom conference. The facilitator would not be opposed to making a financial aid course part of the curriculum. Counselors who could serve as a facilitator would prefer individual and group sessions with students. A teacher could make a lecture and tape a video of the lecture to post as a podcast on the website, or as a YouTube video, the students could view.

Facilitators want to make sure the learner understands the basics and can comprehend essential and vital information to plan, and transition into the ideal repayment plan based on his or her circumstances.

Facilitators would differ from students in their delivery method and process of transmitting information to learners. Teachers would prefer hands-on or face-to-face contact with learners. Part of the reason might be the complexity of the information since it would be easier to interact face to face where they answer questions and receive feedback from students. Facilitators would not be opposed to a video or podcast of their lectures. Facilitators would love to design a PowerPoint to bring out key points of information.

Facilitators would prefer hands-on or face-to-face contact with learners. Important inputs for facilitators would be counseling from staff or peers. Another important input for teachers would be credit or non-credit college courses. When it comes to online inputs, facilitators prefer a video or podcast of their lectures where they would design a PowerPoint to emphasize key points. Inputs that teachers would discourage would-be mass delivery of radio and online methods of social media. Through face-to-face and hybrid methods, the transformation process takes place between students and learners. Due to the facilitator's input preferences, the predominant theory of learning is pedagogy centered around the teacher.

The facilitator will first want to make sure that the learner has a sufficient background or understanding of important matters regarding student loans. The facilitator wants to make sure the learner has a sound foundation in the basics. Next, the teacher will want to focus on repayment, which includes consolidation, graduated repayment, forbearance to suspend payments, and deferment to defer payments. Classification will be used to set up different components of repayment with detailed explanations.

The transformation process would take the vital content information that is important for decision making where it would interact with context. The channel and theory of learning the output would be wise decisions by students who would achieve the maximum result based on their circumstances.

(3) What are the desirable and essential characteristics of the information, i.e., the *content* appropriate for student loan financial aid information?

The question addresses the simple linear relationship between having information and knowledge and making financial decisions that reducing the high default rate and avoid delinquency. However, as the full relationship is argued to be systemic, borrowers who are uninformed about the many available repayment options are less likely to make good choices.

What content is most important to financial literacy? If a borrower would have trouble making payments, they can temporarily suspend payments with a deferment. Some of the reasons include they are enrolled in school, are experiencing economic hardship, are unemployed, and in the military. Another option to temporarily suspend or reduce payments with a forbearance which includes unemployment, economic or temporary hardship, natural disaster, and military deployment. Other options if you have trouble making payments are to change your due date or reduce payments by changing payment plans such as income-sensitive or graduated repayment (Aessuccess.org).

In a situation that involves multiple payments to multiple lenders, there is the option to consolidate federal loans where more than one student loan is combined into a new single loan, and a new repayment schedule will be granted. Federal loans offer another repayment plan, and that is an extended repayment plan where the period of repayment is 25 years instead of 10 years, which is the standard plan (Aessuccess.org).

If a borrower desires to lower their monthly payments or find that their federal student loan debt takes a significant portion of their income, there are several Income-Driven Repayment plans such as Revised Pay as You Earn Repayment (REPAYE), Pay as You Earn Repayment (PAYE), Income Contingent Repayment (ICR), and Income-Based Repayment (IBR) (Studentaid.gov). IBR will assist with monthly payments for people who experience financial hardship. It may extend the repayment period past ten years, and it can offer loan forgiveness when borrowers have made 300 qualifying payments (Aessuccess.org).

Also, there are various loan forgiveness and discharge plans such as Teacher Loan Forgiveness, Public Service Loan Forgiveness, Loan Discharge, Total and Permanent Disability, and Verified Death (Aessuccess.org).

The content that should be presented should be most relevant to enhance complicated decision-making. The entire repayment process should be outlined. Start with the different ways that payments can be suspended or deferred. List all the different methods or options that are available to students. Next, all the different repayment plans should be carefully outlined with full explanations of the process and what they would have to do to apply. The ways they can avoid default should be carefully stressed.

Content would want to include more than one sense such as see (read) or hear (listen). To be actively engaged in the learning process would be ideal. The facilitator and learner would interact; they would also participate in a discussion. To prove mastery of the material the learner would set up his or her demonstration of the process. The way they would want to present the information, they would want to outline the repayment process using PowerPoint and indicate the different repayment options, and deferment methods available.

Content should be structured so that what is conveyed is important to their decision-making or better yet is vital to reaching the proper choice. Information that is not crucial or just makes things harder to understand because it is information overload should be ranked. Information should be prioritized based on how helpful it is to the borrower and not because it pertains to student loans. When it comes to content review knowledge, information, skills, and understanding of the student loan repayment process and rank what is essential to the repayment process, which facilitates an ideal decision.

It is important to instruct the learner with the necessary content, so they will be able to function and execute proper decisions. The content of the repayment process will start with the background and basics to build financial literacy. The repayment process will be placed into separate categories to help the learner grasp the material. The distinct areas will be supported with explanations, examples, and illustrations of relevant material to be presented that is essential to the learner to gain a full understanding of the repayment process. So, they will be able to function independently and conquer any unforeseen problems that might arise.

The transformation process should still produce many positive outputs. Another positive aspect that facilitates learning is the interaction between facilitator and learner where they can participate in a discussion.

(4) What are the characteristics of the mode of communication and theory of learning, i.e., the context used to communicate student loan financial aid information?

A wide variety of methods should be used to communicate with students'; websites should be designed to carry all the essential information that is appropriate to their needs. Text messages and emails should be sent to students to alert them of all the available financial aid opportunities. Brochures and pamphlets should be sent to student's homes to advise them of financial aid that is available. Signs should be posted on bulletin boards that contain financial information and who they should contact. Mass communication such as tv and radio should make announcements. Still another way to reach potential borrowers is with seminars, webinars, workshops, and symposiums at popular places where potential borrowers are known to congregate. It is best to pursue many avenues and forms of communication to try and reach potential borrowers.

Many forms of learning should also be employed to help learners grasp the financial aid process. Cognitive learning would focus on how people think. Behaviorism will focus on how students interact with the environment. Constructivism is where students learn based on past experience this is where instructors can serve as a guide. Humanism is where students can use self-actualization from a hierarchy of needs, and Connectivism people learn by forming connections.

A popular approach with teens is to use Pedagogy which is teacher-centered using direct instruction. Andragogy involves interaction with others where learning is based on actual experiences. Finally, Heutagogy is self-determined, holistic, and is a learner-centered approach it is most beneficial for online learning from websites. All theories of learning should be used for a maximum educational experience.

A study by Weathersby (2018) focused on determining the formative status of students' financial literacy knowledge and the difference between students who participated in a financial literacy class in high school and those who did not participate in a financial literacy course in high school. The collection of formative data to determine a students' baseline of personal financial knowledge with the influence of a prior financial literacy class served to inform administrators on how they could strengthen the financial literacy module that was offered through student development courses. The result of the data analysis indicates that less than 70% of students were proficient in overall financial literacy.

Furthermore, they found no significant differences in financial literacy for students who had completed a prior financial literacy class and those who had not. The existing problem of low financial literacy knowledge continues to have a negative influence on students because they still struggle with student loan debt along with personal financial management (Weathersby, 2018).

A study by Breyer (2019) highlights the problem that adult consumers face growing complex financial decisions today as financial education programs fail to prevent financial hardship among these adult consumers. Courses that promote personal financial acumen and wealth creation should be stressed, but uncertainty exists as to the most effective modality and format of financial education content. If the adult learners are not immediately applying financial knowledge, then their ability to retain the information will start to diminish. Andragogy has become synonymous with adult learning. Pedagogical approaches do not consider the unique needs of adults as learners compared to andragogy. Andragogy aligns with learners' experiences with the study intervention for a post-intervention view of utility and efficacy of financial literacy in a workshop adult learning environment.

Andragogy addresses the art and sciences of adult education practices since it will focus on learners' internalized needs instead of the teaching process and outcomes. The use of andragogy in curriculum design made both course and program outcomes more relevant to learners. Relevancy is the key to engaging adult learners through building an understanding of how and why the curricula are now pertinent and applicable to both personal and professional lives. It is the immediacy of application that has a positive effect on the retention of acquired knowledge and skills (Breyer, 2019).

The context then becomes the different cultures, lifestyles, age groups, income levels, and different backgrounds and education, that compose the student body of learners.

Context is very important you have to look at the income level. Are they U.S. citizens or international students? Race and gender are also important considerations the assumption cannot be made that they are of traditional age, so they could have dependents to support.

The context will examine the external environment which for the learner is the economy in general based on their field of study. There can be big differences for individual learners. If the learner understands all their different repayment options, they will have a much greater chance of succeeding. Currently, Covid-19 is the dominant factor that learners will have to face there will be much uncertainty. New opportunities should appear as other areas may face hardships. Due to Covid-19, many new characteristics will transform how the economy operates. The availability of a vaccine could set the course for a brighter future. The internal environment could change drastically for different lines of work or professions.

Context of relevant information for decision making must consider environment, culture, and characteristics affecting learning. What is critical is the current job market and the economy. Do employment opportunities currently exist? Consideration should be placed on opportunities in a particular field which is internal. Furthermore, the external environment would consider the present state of the economy. Information about postponing or deferring payments would be relevant to the borrower. Also, repayment information based on income could be crucial and vital to the borrower.

With the content just discussed and using a context channel and theory of learning that is predominantly pedagogy and supported with andragogy and heutagogy the transformation process will bestow upon the learners from the facilitators the desired outputs. These outputs will include the prevention of default and avoidance of delinquency with a reduction of dropouts.

Context with the internal environment they would want to utilize a group and individual counseling, seminars, workshops, and symposiums would be a must. To reach the external environment they would announce financial aid nights. Also, they would want to take advantage of social media and form a group on Facebook or Twitter. To reach the external environment videos and podcasts of lectures should be posted on the school website. As for culture, they would want to visit different communities of people in public places and hold financial aid information nights.

(5) If the system elements consisting of students, teachers, content, and context are integrated, will this facilitate learning financial literacy and decrease the student loan default rate?

Are more likely to because this is a system perspective to learning where the individual will try to understand the relationship and interaction between the elements. Financial literacy will be viewed as a complex dynamic construct that evolves when an individual focuses on the four elements listed above and tries to understand how they interact. The transformation process is concerned with the interaction where the financial literacy learning system relies on a feedback loop that can adapt to changes that are due to experiences. Recent graduates are forced to maneuver through an uncertain economy brought on by a global pandemic which should be pursued by taking a system thinking outlook.

Students who are financially literate and understand the repayment process should be able to navigate through most obstacles that might appear. They will have the proper tools to plan ahead and likely avoid default. They should be able to make the correct decisions and avoid default compared to students who lack student loan literacy, especially an understanding of the repayment process.

The facilitator will structure the entire student loan financial education so that learners have the best chance possible of avoiding default. The chance to decrease the student loan default rate is the primary goal of the teacher’s lessons. The facilitator will be sure the learner understands all the options available and what they can do to avoid default. The facilitator knows what works and what does not work. Emphasis will be placed on making sure the learner can understand the sound principles of successful repayment and how they should react given different scenarios.

An understanding of the proper content can make a huge difference in how the learner can negotiate through trouble times, and the important content is crucial to the learner who can use it to their maximum advantage. The right content will arm the learner who will have a big advantage over the uninformed borrower.

The context will be different for diverse learners based on the various characteristics they face. However, a well-informed borrower should be able to function whether they exist in a dissimilar culture or face a different internal environment. An understanding of the full range of repayment options could give them an advantage even over a borrower who faces more favorable characteristics but does not have a clue to the repayment process. The external environment which is the Covid-19 economy could make things difficult for many borrowers. Those with a full understanding of repayment can exercise all the different options and get through the Covid-19 crisis.

Learning is the result of a successful transformation process where the interaction of teachers and students with the appropriate content supported through the necessary context will give the borrower the education to avoid default. The borrower will be equipped to budget and plan for the future as they take advantage of all the different options available to them to overcome unforeseen consequences or circumstances that might arise.

Conclusions

The study started with information about U.S. student loan debt, delinquency, and default rates. Next, the issue that student loan programs are underutilized because people are not aware of the programs or understand how they can help. The importance of financial literacy was stressed, which can empower people since it is associated with desirable and responsible financial behavior. A suggestion was made that taking a systems perspective will look at complex interrelationships and recurring patterns. It will not blame a single cause but look at multiple causes and effects. To achieve a system, view of the process of learning and attaining literacy one has to understand the relationships and interactions between elements.

The paper proposed that financial literacy should be viewed as a complex dynamic construct, which should focus on elements of a student (learner), teacher (facilitator), content (financial knowledge, information skills, behaviors, understand suboptimal decision-making), and context (external and internal environment, culture and characteristics that affect learning).

The structural components are found in all organizational systems with input such as variables, situations, and people who are in the process of education. Next, the transformation process involves interaction among students, teachers, content, and context. The outputs are applications generated by the interaction between the elements a feedback loop enables the inputs and transformation to adapt due to experiences.

Five questions were proposed that can serve as a basis for new opportunities for an improved system. The study suggests that if an institution truly desires to reduce student loan problems, and at the same time improve student loan financial literacy among its student body, it should address the five questions from a system view evaluating the interactions of students x teachers x content x context where combinations can produce an outcome.

Policy Recommendations

The paper proposes a different solution to the financial literacy crisis by employing a systematic approach to the design of learning and literacy for financial education. By analyzing the interactions between four key variables: student x teacher x content x context important relationships will emerge among various elements, which will expose a new understanding of key components that can be implemented in an advanced financial education program.

Through the evaluation of interactions among important variables, a transformation process can develop from inputs of significant instructional and delivery methods that interact with other key variables, which are transformed into a new learning program that produces desirable outputs, which better serve the institution.

Key stakeholders should use the system approach described in this paper and apply it to the five questions that help analyze different aspects of the transformation process to gain a better understanding of how to design an optimal financial education program that can foster sound decision-making. A full assessment of a proposed study will be necessary to achieve the greatest benefits of the system approach. An evaluation should study if the research adheres to fundamental principles discussed in this paper with the possibility of using an alternative approach or pursuing additional research ideas.

<u>Relevant Dissertations</u>

A dissertation by Govindarajan (2016) finds that numeracy is a better predictor of financial delinquency than financial literacy and that financial literacy is not correlated with financial delinquency. He claims that possession of financial knowledge does not appear to lead to better financial decisions with a student population. Numeracy is a distinct construct where low numeracy is associated with various biases and fallacies, which could lead to deleterious financial behavior and attitudes. Numeracy is more than an indication of the ability to work with numbers and can be a marker of a broader ability for better decision-making.

He claims that financial literacy is just a test of financial education. However, numeracy provides more than a measure of a facility with numbers since it can assess deliberation, metacognition, and extracting effective meaning. Numeracy is better than financial literacy or financial education. Numeracy is understanding fractions, proportions, and percentages, which will lead to better decision-making in financial domains. The model could accommodate a variable of numeracy as an input which could enhance the transformation process.

A dissertation by Flores (2014) examined students' financial literacy level, financial behavior, and self-efficacy that may impact retention and success so institutions can develop programs and interventions. If a person has a stronger self-efficacy the more, they will exert effort and persist at a task. With a strong sense of self-efficacy, they might demonstrate more positive financial behavior. Self-efficacy is the belief in one’s ability to perform well. It can be used to understand how individuals respond when making decisions. The study wants to explore the impact of self-efficacy on the financial literacy of first-generation, low-income college students.

The study finds the self-efficacy scale can be a useful tool for the development of a financial education program. Confidence plays a role in financial literacy. A positive experience can bolster financial self-efficacy whereas a negative experience can dampen financial self-efficacy the majority of college students are making financial decisions for the first time. Again, self-efficacy will also work with the model as an input variable for the transformation process.

A dissertation by Cohen (2018) attempts to develop an exemplary financial literacy program for undergraduate students. The study used a comprehensive literature review and targeted qualitative semi-structured interviews with college administrators and professionals. The study finds the following subjects as the core to the development of an exemplary financial literacy program. The first is critical thinking and priority management will allow students to acquire and evaluate information. The second is budgeting and debt service. An understanding of budgeting, planning for expenses and savings, acceptable levels of debt, and repayment of debt are essential. The third is banking, monitoring their bank account activity will assist students to understand and manage financial resources and schedule payments. Fourth is credit card and debt accumulation. The fifth is credit scores, credit reports, and identity theft awareness. Last is identity theft.

Exceptional financial literacy programs promote and support peer mentors, use large and small group discussions along with one-on-one sessions. They promote community involvement and make financial literacy real instead of an abstract idea. The different subjects could be implemented into the model and transformed into an exemplary financial literacy program.

Schachar (2019) used a comparative case study approach to examine three distinct Income Share Agreement (ISA) programs at three different universities. Chapters 4-6 of her dissertation is where each chapter is devoted to a full analysis of the individual institution's ISA program.

Some qualities of ISAs that Schachar finds are that they meet the needs of a subset of students, and they are simpler and less costly than alternatives. They are serving a niche market of Parent Plus or private loan borrowers where the market needs some other options. Institutions do not view ISAs as a way to make college less expensive rather they view ISAs as a tool for reducing the risk of default or loan underpayment. ISAs are a market-based approach for dealing with university accountability. ISA's institutions might not know how graduates were fairing in the labor market. Because of ISAs, institutions are acutely aware of a graduate's progression in the job market. ISAs adjust services and resources to support students in improving success. The study claims ISAs have considerable promise to impact higher education finance.

It is still possible to restructure the model using the different qualities of ISAs to find an ideal Income Share Agreement program.

Recommendations for Future Research

Future research should implement the system approach outlined here at an institution of higher education. The principles of variables, interactions, and transformation should be carefully analyzed and studied before being formulated into a model. This paper offers one such systems approach.

REFERENCES

Akers, B., & Chingos, M. M. 2014. Student loan safety nets: estimating the costs and benefits of income-based repayment. ***Brown Center on Education Policy at Brookings.*** Retrieved from: https://www.brookings.edu/wp-content/uploads/2016/06/IBR_online.pdf

American Education Services, Harrisburg, PA. Retrieved from http://www.aessucces.org/

Anderson, D. M., Conzelmann, J. G., & Lacy, A. T. 2018. The state of financial knowledge in college: new evidence from a national survey. ***RAND Working Paper.*** Retrieved from: https://www.rand.org/content/dam/rand/pubs/working_papers/WR1200/WR1256/RAND_WR1256.pdf

Bailey, P. 2018. Student loan debt crisis deepens and default rates soar. ***Nonprofit Quarterly.*** Retrieved from: https://nonprofitquarterly.org/student-loan-debt-crisis-deepens-and-default-rates-soar/

Baker, G. D. 2014. How to become a financial aid director. ***http://www.collegemouse.com.*** Retrieved from: https://www.collegemouse.com/how-to-become-a-financial-aid-director/#:~:text=Financial%20aid%20directors%20usually%20need%20a%20master%20or,as%20they%20gain%20the%20essential%20skills%20and%20experience.

Barrington, R. 2019. Not paying student loans here's what to expect. ***MoneyRates.*** Retrieved from: https://www.money-rates.com/personal-loans/consequences-of-not-paying-student-loans.htm

Bean, S., Distad, A., Mayne, D., & Kromminga, A. 2014. Improving student financial literacy as a means of addressing increasing student loan default rates. ***MnSCU Luoma Leadership Action Learning Project Team #3.*** Retrieved from:

https://www.minnstate.edu/system/hr/training_and_development/Leadership_Academy/documents/cohort_7_ALP_reports/Team_3_Report.pdf

Begich, M. P. 2017. A transcendental phenomenological study of financial literacy and student loan debt of female graduate students. Retrieved from: https://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=2509&context=doctoral

Berman, J. 2019. Here's why america's $1.5 trillion student-loan crisis has spiraled out of control. ***MarketWatch.*** Retrieved from: https://www.marketwatch.com/story/why-financial-education-wont-solve-the-15-trillion-student-loan-crisis-2019-06-27

Blaschke, L. M., & Hase, S. 2015. Heutagogy: a holistic framework for creating twenty-first century self-determined learners. ***ResearchGate.***

Boatman, A., Evans, B., & Soliz, A. 2014. Applying the lessons of behavioral economics to improve the federal student loan program: six policy recommendations. ***Lumina Foundation.*** Retrieved from: Applying_the_Lessons_of_Behavioral_Economics_to_improve_the_Federal_Policy_Loan_Programs.pd

Boggs, B. 2019. U. S. student loans and debt levels set record: what's a legislature to do? ***National Conference of State Legislatures,*** Paper No. 6. Retrieved from: https://www.ncsl.org/Portals/1/Documents/educ/Student-Loans-And-Debt_v02.pdf

Bolt. 2014. The vark guide to learning styles. ***www.boltlearning.com.*** Retrieved from: https://www.boltlearning.com/blog/article/vark-guide-learning-styles/

Botelho, S. 2019. 2 new ways to support student financial literacy on campus. ***University Business.*** Retrieved from: https://universitybusiness.com/2-new-ways-to-support-student-financial-literacy-on-campus/

Breyer, K. L. 2019. A Qualitative action research study of a self-directed e-learning financial education course for midwestern adult learners. Retrieved from: https://search.proquest.com/openview/02889f619d04f61ab1edd29d3036371a/1.pdf?pq-origsite=gscholar&cbl=18750&diss=y

Buchwald, E. 2020. Two trillion coronavirus stimulus package lets some student-loan borrowers delay payments for six months. ***MarketWatch.*** Retrieved from: https://www.marketwatch.com/story/2-trillion-coronavirus-stimulus-bill-gives-student-loan-borrowers-six-months-of-relief-2020-03-26

Campbell, C., Deil-Amen, R., & Rios-Aguilar, C. 2015. Financial aid frustrations: social media as a window into community college student challenges. ***A Report of the Getting Connected Project.*** Retrieved from: https://www.coe.arizona.edu/sites/default/files/gcfinancialaidreport.final_2.pdf

Chakrabarti, R., Gorton, Jiang, M., van der Klaauw, W. 2017. Who is more likely to default on student loans. ***Liberty Street Economics.*** Retrieved from: https://libertystreeteconomics.newyorkfed.org/2017/11/who-is-more-likely-to-default-on-student-loans.html

Cho, S. H., Xu, Y., & Kiss, D. E. 2015. Understanding student loan decisions: a literature review. ***Family and Consumer Sciences Research Journal,*** 43, (3): 229-243. Retrieved from: file:///C:/Users/David/AppData/Local/Packages/Microsoft.MicrosoftEdge_8wekyb3d8bbwe/TempState/Downloads/ChoXuKiss2015StudentLoanLiteratureReview%20(1).pdf

Cohen, S. 2018. ***Practitioner's guide to student financial literacy.*** Unpublished doctoral dissertation, University of Pittsburgh, Pittsburgh.

College Board. 2016. ***Financial aid essentials.*** National merit scholarship corporation.

Retrieved from: https://secure-media.collegeboard.org/digitalServices/pdf/membership/counselor-workshops/financial-advising-booklet.pdf

Daly, L. 2020. These are the five worst states for student. ***The Motley Fool.*** Retrieved from: https://www.fool.com/student-loans/are-5-worst-states-student-loan-debt/

Darolia, R. 2016. An experiment on information use in college student loan decisions. ***Research Department, Federal Reserve Bank of Philadelphia Working Paper No. 16-18.*** Retrieved from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2805857

De, B. 2018. Traditional vs. online learning. ***eLearning Industry.*** Retrieved from: https://elearningindustry.com/traditional-learning-vs-online-learning

dpi.wi.gov. Building an effective financial literacy program. ***dpi.wi.gov.*** Retrieved from: https://dpi.wi.gov/sites/default/files/imce/cte/pdf/pflchap1.pdf

Duggan, M. 2015. Mobile messaging and social media 2015. ***Pew Research Center,*** Retrieved August 2, 2019, Retrieved from: https://www.pewinternet.org/2015/08/19/mobile-messaging -and-Social media-2015/.

Duncan, P. B., & Harris, A. Why is financial education/literacy important? ***D&E, The Power Group.*** Retrieved from: www.depower.org

Durband, D. B., & Britt, S. L. (Eds.). 2012. ***Student financial literacy: campus-based program development.*** New York: Springer.

Fain, P. 2018. Big racial and sectoral gaps in student loan default rates mostly persist even after controlling for wealth and income. ***Inside Higher Ed.*** Retrieved from: https://www.insidehighered.com/news/2018/06/22/big-racial-and-sectoral-gaps-student-loan-default-rates-mostly-persist-even-after

Fernandez, D., Lynch Jr., J., & Netemeyer, R. G. 2014. Financial literacy, financial education, and downstream financial behaviors. ***Management Science,*** 60, (8): 1861-1883. https://dl.acm.org/doi/10.1287/mnsc.2013.1849 Retrieved from: https://pubsonline.informs.org/doi/abs/10.1287/mnsc.2013.1849?journalCode=mnsc

Fishchietto, N. 2016. Variables impacting student loan knowledge. ***Ohio State University.*** Retrieved from: https://kb.osu.edu/bitstream/handle/1811/76531/Nicholas_Fischietto_2016_Thesis.pdf?sequence=1&isAllowed=y

Flores, C. 2014. ***First generation college student financial literacy: impact of self-efficacy and behavior.*** Unpublished doctoral dissertation, Washington State University, Pullman.

FRED Economic Data. Economic research: federal reserve bank of st. louis. Retrieved from: https://fred.stlouisfed/org/series?SLOAS

Fredman, J. 2018. Study uncovers disconnect between financial literacy and knowledge about student loans. ***NASFAA.org.*** Retrieved from: https://www.nasfaa.org/news-item/15725/Study_Uncovers_Disconnect_Between_Financial_Literacy_and_Knowledge_About_Student_Loans

Friedman, Z. 2019. Student loan debt statistics in 2019: a $1.5 trillion crisis. ***Forbes.*** Retrieved from: https://www.forbes.com/sites/zackfriedman/2019/02/25/student-loan-debt-statistics-2019

GAO. 2018. ***Federal student loans: actions needed to improve oversight of schools' default rates.*** United States Government Accountability Office: Report to Congressional Requesters. Retrieved from: https://www.gao.gov/assets/700/691520.pdf

Goetz, J., Cude, B. J., Nielsen, R. B., Chatterjee, S., & Mimura, Y. 2011. College-based personal finance education: student interest in three delivery methods. ***Journal of Financial***

Counseling and Planning, 22 (1): 27- 42.

Govindarajan, S. 2016. ***Effects of numeracy and financial and related academic outcomes in college students.*** Unpublished doctoral dissertation, University of Texas, Arlington.

Great Lakes.org. 2016. Financial literacy: what you need to know to educate your students. ***Great Lakes.org.*** Retrieved from: https://fasfaa.memberclicks.net/assets/ClockHour/1617/financial%20literacy-what%20you%20need%20to%20know%20august%202016.pdf

Greenfield, J. S. 2015. Challenges and opportunities in the pursuit of college finance literacy. ***The High School Journal,*** 98: 316-336.

Ha, L., Joa, C., Gabay, I., & Kim, K. 2018. Does college students' social media use affect school e-mail avoidance and campus involvement? ***Internet Research,*** 28, 213-231.

Habermacher, A. 2018. Part 3: the brain and the myth of learning styles. ***Linkedin.*** Retrieved from: https://www.linkedin.com/pulse/brain-myth-learning-styles-andy-habermacher?articleId=6442320759107911680

Halupa, C. M. 2015. Pedagogy, Andragogy, & Heutagogy. ***ResearchGate.*** Retrieved from: https://www.researchgate.net/publication/297767648_Pedagogy_Andragogy_and_Heutagogy

Harris, E. 2016. The real answer to the student loan crisis: changing borrower behavior, says study. ***Forbes.*** Retrieved from: https://www.forbes.com/sites/elizabethharris/2016/08/31/the-real-answer-to-the-student-loan-crisis-changing-borrower-behavior-says-study/#68134c9748e5

Home.Treasury.Gov. 2019. Best practices for financial literacy education at institution of higher education. *U.S. Financial Literacy and Education Commission.* Retrieved from:

https://home.treasury.gov/system/files/136/Best-Practices-for-Financial-Literacy-and-Education-at-Institutions-of-Higher-Education2019.pdf

Ideas42. 2016. Nudging for success: using behavioral science to improve the postsecondary student journey. ***Ideas42.*** Retrieved from: www.ideas42.org/wp-content/uploads/2016/09/Nudging-For-Success-FINAL.pdf

IES. 2018. 2015-16 national postsecondary student aid study (NPSAS:16): student financial estimates for 2015-16. ***Institute for Education Sciences: National Center for Education Statistics.*** Retrieved from: https://nces.ed.gov/pubs2018/2018466.pdf

iGrad. 2019. How to make financial literacy go viral with social media. ***The Bridge: Bridging the gap between financial literacy and financial capability.*** Retrieved from: https://www.igradfinancialwellness.com/blog/how-to-use-social-media-to-teach-financial-literacy

iGrad. 2020. 4 Surprising ways financial wellness programs help colleges and their students. ***The Bridge.*** Retrieved from: https://www.igradfinancialwellness.com/blog/4-surprising-ways-financial-wellness-programs-help-colleges-students

INFE. 2010. Detailed guide to evaluating financial education programmes. ***OCED.*** Retrieved from: http://www.oecd.org/finance/financial-education/49994090.pdf

Javine, V. 2013. Financial knowledge and student loan usage in college students. ***Financial Services Review,*** 22: 367-387.

Johnson, C L., O'Neill, B., Worthy, S. L., Lown, J. M., & Bowen, C. F. 2016. What are student loan borrowers thinking? Insights from focus groups on college selection and student loan decision making. ***Journal of Financial Counseling and Planning,*** 27: 184-198. Retrieved from: https://files.eric.ed.gov/fulltext/EJ1161822.pdf

Kaiser, T., Lusardi, A., Menkoff, L., & Urban, C. 2020. Financial education affects financial knowledge and downstream behaviors. ***Global Financial Literacy Excellence Center.*** Retrieved from: https://gflec.org/wp-content/uploads/2020/04/Working-Paper-Financial-education-affects-financial-knowledge-and-downstream-behaviors-April_2020.pdf?x83489

Kantrowitz, M. 2019. Student loan statistics. ***Saving for college.com.*** Retrieved from: https://www.savingforcollege.com/article/student-loan-statistics

Kapur, R. 2019. Principles and teaching methods of andragogy. ***ResearchGate.*** Retrieved from: https://www.researchgate.net/publication/337102322_Principles_and_Teaching_Methods_of_Andragogy

Kasman, M., Heuberger, B., & Hammond, R. A. 2018. A review of large-scale youth financial literacy education policies and programs. ***Economic Studies at Brookings.*** Retrieved from: https://www.brookings.edu/wp-content/uploads/2018/10/ES_20181001_Financial-Literacy-Review.pdf

Kasman, M., Heuberger, B., & Hammond, R. A. 2018. Recommendations for improving youth financial literacy education. ***Economic Studies at Brookings.*** Retrieved from: https://www.brookings.edu/wp-content/uploads/2018/10/ES_20181001_Financial-Literacy-Recommendations.pdf

Keshner, A. 2019. Treasury department recommends mandatory financial-literacy courses for college students. ***MarketWatch.*** Retrieved from: https://www.marketwatch.com/story/treasury-dept-says-student-debt-crisis-is-so-bad-that-financial-education-should-be-mandatory-for-college-students-2019-06-17

Kirkham, E. 2018. Income-based student loan repayment: your guide to ibr. ***Student Loan Hero/ Lendingtree.*** Retrieved from: https://studentloanhero.com/featured/income-based-repayment-plan/

Klepfer, K., Cornett, A., Fletcher, C., & Webster, J. 2019. Student financial wellness survey fall 2019 semester results. ***Trellis Company.*** Retrieved from: https://www.trelliscompany.org/wp-content/uploads/2020/07/Fall-2019-SFWS-Report.pdf

Koksal, I. 2020. The rise of online learning. ***Forbes.*** Retrieved from: https://www.forbes.com/sites/ilkerkoksal/2020/05/02/the-rise-of-online-learning/#2d4a794672f3

Koller, V., Harvey, S., & Magnotta, M. 2005. Technology-based learning. ***Social Policy Research Associates.*** Retrieved from: https://www.doleta.gov/reports/papers/TBL_Paper_FINAL.pdf

Kruse, F. 2011. Eight ways to embrace technology-based learning approaches. ***Skills You Need.*** Retrieved from: https://www.skillsyouneed.com/rhubarb/technology-based-learning-approaches.html

Kurt, D. 2019. Student loan debt: 2019 statistics and outlook. the numbers are staggering – and still on the rise. ***Investopedia.*** Retrieved from: https://www.investopedia.com/student-loan-debt-2019-statistics-and-outlook-4772007

Kutz, S. 2019. This is the most innovative financial literacy program in the U.S. – it gives students' paychecks and helps them open bank accounts. ***MarketWatch.*** Retrieved from: https://www.marketwatch.com/story/how-one-high-school-is-teaching-hundreds-of-students-to-become-millionaires-2019-05-03

Kuzman, A., Kuzman, J., & Thiewes, H. 2010. An examination of business students' student debt and total debt. ***American Journal of Business Education,*** 3, 71-78. Retrieved from: https://files.eric.ed.gov/fulltext/EJ1060315.pdf

Lobb, J. 2019. Student loan default guide. ***lendedu.com*** Retrieved from:

https://lendedu.com/blog/student-loan-default/

Lowe, T. 2019. How Obamacare blew up the student loan crisis. ***Washington Examiner.*** Retrieved from: https://www.washingtonexaminer.com/opinion/how-obamacare-blew-up-the-student-loan- crisis

Lucca, D. O., Nadauld, T., & Shen, K. 2017. Credit supply and the rise in college tuition: evidence from the expansion in federal student aid programs. ***Federal Reserve Bank of New York Staff Reports,*** no. 733. Retrieved from: https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr733.pdf

Lusardi, A., Scheresberg, C. B., & Oggero, N. 2016. Student loan debt in the us: an analysis of 2015 nfcs data. ***George Washington University School of Business, Global Financial Literacy Excellence Center.*** Retrieved from: https://gflec.org/research-tag/an-analysis-of-the-2015-nfcs-data/

Lusardi, A., & Willis, L. E. 2017. Should colleges require a financial literacy class? ***MarketWatch.*** Retrieved from: https://www.marketwatch.com/story/should-colleges-require-a-financial-literacy-class-2017-04-03

Lusardi, A. 2019. Financial literacy and the need for financial education: evidence and implications. ***Swiss Journal of Economics and Statistics.*** Retrieved from: https://sjes.springeropen.com/articles/10.1186/s41937-019-0027-5

Lustig, M. 2020. Coronavirus stimulus: five things student loan borrowers should know. ***U.S. News & World Report.*** Retrieved from: https://www.usnews.com/education/blogs/student-loan-ranger/articles/coronavirus-stimulus-things-student-loan-borrowers-should-know

Marciaconner. 2020. Introduction to andragogy & pedagogy. ***MarciaConner.com*** Retrieved from: http://marciaconner.com/resources/andragogy-pedagogy/#:~:text=Pedagogy%20%28p%C3%A8d-e-go%C2%B4j%C3%AA%29%20literally%20means%20the%20art%20and%20science,be %20learned%2C%20and%20when%20it%20will%20be%20learned.

Majors, N. 2020. The future of higher education after COVID-19. ***theLAB.*** Retrieved from: https://academic.logos.com/the-future-of-higher-education-after-covid-19/

Markle, G. 2019. Crushing debt or savvy strategy? Financial literacy and student perceptions of their student loan debt. ***Journal of Student Financial Aid,*** 49 (1): 1-20. Retrieved from: https://ir.library.louisville.edu/cgi/viewcontent.cgi?article=1651&context=jsfa

May, C. 2018. The problem with learning styles. ***Scientific American.*** Retrieved from: https://www.scientificamerican.com/article/the-problem-with-learning-styles/

McCarthy, T. 2019. Top 50 College financial literacy programs of 2019. ***LendEDU.*** Retrieved from: https://lendedu.com/blog/top-college-financial-literacy-programs/

McLeod, S. 2019. Constructivism as a theory for teaching and learning. ***Simply Psychology.*** Retrieved from: https://simplypsychology.org/constructivism.html

Melton, A., Wingfield, A. D., & Ostroff, E. G. 2020. Cares act offers six months of debt relief to student loan borrowers. ***Consumer Financial Services Law Monitor.*** Retrieved from: https://www.consumerfinancialserviceslawmonitor.com/2020/03/cares-act-offers-six-months-of-debt-relief-to-student-loan-borrowers/

Monson, T. 2017. Online vs blended learning courses: which are right for you? ***eLearning Industry.*** Retrieved from: https://elearningindustry.com/online-vs-blended-learning-courses-which-right-you

Mueller, H. M., & Yannelis, C. 2018. The rise in student loan defaults in the great recession. ***NYU Stern School of Business.*** Retrieved from: https://pdfs.semanticscholar.org/1123/a55aeb391ff19e1c7d1466f56f2aaa591514.pdf

Newbold, C. 2018. Not your mother's online class. ***Inside Higher Ed.*** Retrieved from:

https://www.insidehighered.com/digital-learning/views/2018/08/22/hybrid-education-breath-future-and-death-teaching-we-know-it

New York Fed. Federal Reserve Bank of New York. Retrieved from: https://www.newyorkfed.org/medialibrary/interactives/householdcreditdata

NFEC, 2020. Teaching financial literacy: top 8 tips. ***National Financial Educators Council.*** Retrieved from: https://www.financialeducatorscouncil.org/teaching-financial-literacy/

NITRO. 2020. Student loan debt. ***Nitro.*** Retrieved from: https://www.nitrocollege.com/research/average-student-loan-debt

Nova, A. 2019. Many high school students don't understand how the college financial aid. Retrieved from: process works. ***CNBC.com.*** https://www.cnbc.com/2019/07/05/many-high-school-students-dont-understand-the-financial-aid-process.html

Ogden, T. 2019. More states are forcing students to study personal finance. It's a waste of time. ***The Washington Post.*** Retrieved from: https://www.washingtonpost.com/outlook/2019/04/23/more-states-are-forcing-students-study-personal-finance-its-waste-time/

Pearson.com. 2016. What are learning styles? theories of learning styles rest on two fundamental claims. ***Pearson Learning Styles White Paper.*** Retrieved from: https://www.pearson.com/content/dam/one-dot-com/one-dot-com/us/en/pearson-ed/downloads/Learning-Styles.pdf

Peterson Foundation. 2021. What does the national debt mean for america's future? Retrieved from: https://www.pgpf.org/sites/default/files/What-Does-the-National-Debt-Mean-for-America%E2%80%99s-Future.pdf

Penn State University. 2019. What is hybrid learning? ***Hybrid Learning @ Penn State.*** Retrieved from: https://sites.psu.edu/hybridlearning/what-is-hybrid/

Perna, L. W. & Kurban, E. R. (Eds.). 2013. ***The state of college access and success: improving for students from underrepresented groups.*** New York: Routledge.

Perna, L. W., Kvaal, J., & Ruiz, R. 2017. Understanding student debt: implications for federal policy and future research. ***ANNALS, AAPSS,*** 671: 270-286.

PHEAA.org. Retrieved from: https://www.pheaa.org/

Prince, M. J., & Felder, R. M. 2013. Inductive teaching and learning methods: definitions, comparisons, and research bases. ***Journal of Engineering Education,*** 95(2), 123-128. Retrieved from: https://www.engr.ncsu.edu/wp-content/uploads/drive/1-MORshfST1zjmfEqk33HF1PCYP-HbW3L/2006-Inductive%20learning%20paper%20(JEE).pdf

Ranzetta, T. 2019. Opinion: solving america's financial-literacy crisis starts with teachers, not laws. ***MarketWatch.*** Retrieved from: https://www.marketwatch.com/story/solving-americas-financial-literacy-crisis-starts-with-teachers-not-laws-2019-11-19

Reverse Tide. 2020. The future for education is now for university students.

Ruland, S. 2019. Student loan debt: new study shows that 9% of pa students are defaulting within two years. ***York Daily Record.*** Retrieved from: https://www.ydr.com/story/news/2019/10/23/student-loans-9-percent-pa-students-default-within-two-years/4061613002/

Schachar, L. M. 2019. ***Financing the future: the emerging role of income share agreements in higher education.*** Unpublished doctoral dissertation, University of Pennsylvania, Philadelphia.

Seitz, S. 2020. The white-knuckle ride to financial literacy: understanding your student loans.

Rockefeller Institute of Government. Retrieved from: https://rockinst.org/blog/the-white-knuckle-ride-to-financial-literacy-understanding-your-student-loans/

Sheets, R. G. & Crawford, S. 2014. From income-based repayment plans to an income-based loan system. ***George Washington Institute of Public Policy.*** Retrieved from: https://www.luminafoundation.org/files/publications/ideas_summit/From_Income-based_Repayment_Plans_to_an_Income-based_Loan_System.pdf

Skornik, J. 2017. Financial literacy and student loan default. ***California State University, Northridge.*** Retrieved from: https://www.academia.edu/35224062/Financial_Literacy_and_Student_Loan_Default?auto=download

Smith, M. 2019. Understanding the 8 types of learning styles. ***Mindvalley.*** Retrieved from: https://blog.mindvalley.com/types-of-learning-styles/#:~:text=Understanding%20the%208%20Types%20Of%20Learning%20Styles%201,is%20the%20most%20recent%

Somji, R. 2018. Teaching strategies for the 8 different learning styles. ***VirtualSpeech.*** Retrieved from: https://virtualspeech.com/blog/teaching-strategies-different-learning-styles

Starr, l. M. 2020. Leadership, Contexts, and Learning - Part 2. Theories of Learning, Channels, and Curricula. *Thomas Jefferson University Digital Commons*, School of Continuing and Professional Studies Faculty Papers. Paper 7. Retrieved from: https://jdc.jefferson.edu/jscpsfp/7.

Strauss, V. 2013. Howard gardner: multiple intelligences are not learning styles. ***The Washington Post.*** Retrieved from: https://www.washingtonpost.com/news/answer-sheet/wp/2013/10/16/howard-gardner-multiple-intelligences-are-not-learning-styles/

Streeter, M. 2020. What's in the cares act: higher education and student debt. ***The Institute for College Access & Success.*** Retrieved from: https://ticas.org/covid-19-2/covid-19-affordability/whats-in-the-cares-act-higher-education-student-debt/

Studentaid.gov. https://studentaid.gov/

Student Loan Hero. 2021. Student loan hero coronavirus information center. Retrieved from: https://studentloanhero.com/featured/student-loan-coronavirus-information/

Sweeney, L. B. 2008. Systems thinking habits of mind. ***Systems & Literacy Workshop Outline.*** Retrieved from: SYSTEMS + LITERACY (lindaboothsweeney.net)

Tes. (2018). What is pedagogy? ***Tes Editorial.*** Retrieved from: https://www.tes.com/news/what-is-pedagogy-definition

TICAS. 2019. Student debt and the class of 2018. ***The Institute for College Access and Success,*** 14th Annual Report September 2019. Retrieved from: https://ticas.org/wp-content/uploads/2019/09/classof2018.pdf

TICAS. 2018. Student debt and the class of 2017. ***The Institute for College Access and Success,*** 13th Annual Report September 2018. Retrieved from: https://ticas.org/files/pub_files/classof2017.pdf

Toppo, G. 2019. In learning styles debate, it's instructors vs. psychologists. ***Inside Higher Ed.*** Retrieved from: https://www.insidehighered.com/news/2019/01/09/learning-styles-debate-its-instructors-vs-psychologists

Truman, G. 2017. X pros and cons of traditional education. ***DAILYONWEB.*** Retrieved from: https://www.dailyonweb.com/News/X-Pros-Cons-of-Traditional-Education.html

Weathersby, M. J. 2018. An assessment of the financial literacy of undergraduates at one community college in texas. Retrieved from: https://www.proquest.com/docview/2051938948

Weissmann, J. 2013. Our student loan system is broken, and these new statistics prove it. ***The Atlantic.*** Retrieved from: https://www.theatlantic.com/business/archive/2013/08/our-student-loan-system-is-broken-and-these-new-statistics-prove-it/278453/

WGU.edu. 2020. The five educational learning theories. ***Western Governors University.*** Retrieved from: https://www.wgu.edu/blog/five-educational-learning-theories2005.html

Wills, M. 2020. Why college tuition increases. ***The Classroom.*** Retrieved from: https://www.theclassroom.com/why-college-tuition-increases-13596121.html

Wilson, L. O. 2020. The three domains of learning – cognitive, affective, psychomotor. ***The Second Principle.*** Retrieved from: https://thesecondprinciple.com/instructional-design/threedomainsoflearning/

Yu, J., & Hu, Z. 2016. Is online learning the future education? ***World Economic Forum.*** Retrieved from: https://www.weforum.org/agenda/2016/09/is-online-learning-the-future-of-education/

Zumwal, A., McCaulley, G., Sweedler, K., Tobe, E., Olive, P., Kiss, E., Serido, J., Wounded Head, L., Johnson, C., Katras, M., Bartholomae, S., & Evans, D. 2019. Student loan tips: Texting intervention project***. South Dakota State University, Consumer Sciences Department.*** Retrieved from: https://extension.sdstate.edu/sites/default/files/2019-01/P-00058.pdf