

An Experimental Study to Analyze the Behavior of Students from Multidisciplinary Groups Towards Education Loans

By

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Abstract

The utilization of student loans has become a fundamental component in the financial support of a substantial proportion of students and their families pursuing higher education. With the ongoing escalation of education expenses, a considerable number of individuals resort to student loans as a viable solution for mitigating the financial disparity. These loans provide individuals the opportunity to pursue educational endeavors that may otherwise be beyond their reach, yet they also include enduring financial responsibilities and factors to be taken into account over an extended period of time. The presence of a substantial amount of student loan debt can impose considerable financial constraints on individuals, impeding their capacity to actively pursue job prospects, accumulate savings for the future, or attain many other personal objectives. The psychological impact of loan repayment can have detrimental effects on individuals' mental health and overall state of well-being. Thus, the evaluation of loan repayment terms and possibilities should be conducted with serious consideration. When making borrowing decisions, individuals should carefully evaluate the duration of the repayment period and determine their preference for either a shorter term with larger monthly payments or a longer term with smaller monthly payments. Furthermore, it is vital to have an in-depth knowledge of the accessibility of deferment, forbearance, or loan forgiveness programs in order to effectively navigate unforeseen financial challenges or research alternative options for reducing debt. Nevertheless, by engaging in a deliberate and strategic decision-making process, students can effectively manage the intricate nature of student loans and get more favorable outcomes. The initial step involves acquiring an extensive understanding of the many categories of loans accessible, namely federal and private loans, along with their corresponding conditions, interest rates, and repayment alternatives.

This paper is a research study that seeks to examine the attitudes and actions of multidisciplinary educational background groups in relation to educational loans. The primary objective of this study is to assess the efficacy of the Interactive Learning Environment (ILE) in influencing students' decision-making processes pertaining to student loans.

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Introduction

a. Background

Student loans are a financial instrument specifically created to provide assistance to students in financing their educational pursuits. Scholarships have the capacity to defray the costs associated with tuition fees, textbooks, lodging, and several other educational expenditures. Student loans serve the purpose of mitigating the disparity between the escalating expenses associated with higher education and the monetary means accessible to people and families. The use of student loans in the United States has had a significant impact on numerous individuals and households, primarily due to the persistent escalation of college expenses and the imperative nature of obtaining a higher education [1]. As of March 2019, the total amount of federal and private student loan debt owing by borrowers in the United States reached a substantial sum of \$1.6 trillion [2].

The two main sources of student loans are federal loans and private loans. Federal student loans are disbursed by the government and frequently have more advantageous conditions, such as stable interest rates, adaptable repayment alternatives, and prospective programs for loan forgiveness. In contrast, private student loans are acquired through financial entities such as banks and credit unions [3]. These loans generally feature diverse interest rates and repayment conditions that are dependent on the borrower's creditworthiness. According to a survey published in 2018, the majority of student loans, around 92%, are classified as federal loans which totals the outstanding debt to \$1.4 trillion from 43 million borrowers [2]. Whereas the total outstanding debt for private student loan is \$124.65 billion which is only 7.76% of the total Student loan debt in the US.

The determination of the overall borrowing cost is significantly influenced by the interest rates associated with student loans. Interest rates for federal loans are normally determined by the government and tend to be cheaper in comparison to interest rates for private loans, which are influenced by market conditions and the borrower's credit history [3]. Interest on student loans can accumulate at many phases, including during the borrower's enrollment in school, during grace periods, or throughout the payback period. The start of student loan repayment often

occurs once the borrower finishes their educational pursuits or has transitioned to a status of enrollment below half-time. There are multiple repayment alternatives accessible to borrowers, enabling them to select programs that are most compatible with their individual financial situations. The available choices encompass basic repayment plans, graded repayment plans, extended repayment plans, and income-driven repayment plans. The last category, known as income-driven repayment plans, modifies monthly payments in accordance with the borrower's income and family size.

The increasing accumulation of student loan debt has imposed a significant economic hardship on numerous individuals in the United States, particularly among the younger population. Excessive debt payments can limit the ability to make discretionary purchases and potentially impede access to other credit options. The presence of onerous payments often results in the occurrence of delinquency and default, giving rise to a multitude of challenges for the particular borrower [4].

b. Problem Statement & Research Objective

The determinants that influence the outcomes of an educational loan are the loan size, repayment schedule, and interest rate. The interdependence of these aspects necessitates careful consideration in selecting the optimal combination. The students frequently encounter difficulty in determining the appropriate loan arrangement to consider. This occurrence can be attributed to a deficiency in comprehending the system. Numerous factors can exert effect on an individual's decision-making process. The act of making an incorrect decision can result in unforeseen challenges. Amateur borrowers may encounter difficulties in grasping key information related to student loans, in contrast to individuals with prior knowledge in this matter. The variation in this aspect can also be influenced by one's educational background or level of attainment. Hence, a primary inquiry of the study is around determining whether the educational background of students influences their decision-making process. The impact of student loan debt on students can have both immediate and long-term consequences, affecting all facets of their lives. The aim

of this study is to examine the decision-making process of students from diverse backgrounds in order to identify potential variances.

Interactive Learning Environment (ILE) is a simulation tool that enables users to modify the variables of a model without requiring a complete understanding of the interrelationships among those variables. Another objective of this thesis is to examine the potential influence of the interactive simulation tool on the decision-making process and ascertain the advantages it offers students.

c. Research Questions

In order to achieve the stated objectives, the following research questions will be addressed:

- ❖ Based on Educational attainment does the decision-making ability of individuals differ regarding education loans?
- ❖ How does the proposed Experiment through the learning environment affect a student's understanding of education loans both before and after its implementation?

Literature Review

A student loan refers to a sum of money that is borrowed by a student in order to finance the expenses related to pursuing higher education or postsecondary education. Education loans are specifically structured to cover expenses such as tuition fees, textbooks, educational materials, and living expenses incurred by individuals during the pursuit of their academic degrees [5]. There exists a diverse range of education loans, which can be categorized into two overarching classifications: Federal loans and Private loans. The aforementioned loan has become a prominent facet of contemporary student existence. The responsible utilization of this loan can prove advantageous for a student.

The majority of student loans occur through the federal government due to the comparatively lower interest rates provided by federal lending programs in comparison to those supplied by private lenders. The determination of interest rates for federal loans is governed by legislative measures and is independent of the borrower's probability of default. In addition to government borrowing, certain students resort to borrowing from private financial institutions, typically when their capacity to borrow from the government has been fully utilized. In contrast to the loans provided through federal lending programs, private lenders extend loans with interest rates that are based on the borrower's probability of default [3].

In 2016, individuals with less than a bachelor's degree who were borrowers of all age groups reported a median outstanding student loan debt of \$10,000. Individuals who possessed a Bachelor's degree were found to have a median debt of \$25,000, whereas those who held a postgraduate degree had a median debt of \$45,000 [8]. The mean amount of debt incurred by law school graduates surpasses \$180,000 and for medical school graduates it exceeds to \$200,000. The average loan debt incurred by students with backgrounds in Science, Arts, and Business is comparatively lower than that of the previous groups [14].

Students who possess a higher degree of financial literacy exhibit a higher tendency to perceive their student loan debt in a beneficial manner as a financial approach. Additionally, these individuals display reduced apprehension regarding their capacity to repay their loans and

demonstrate superior decision-making skills in matters pertaining to financing and education, as compared to students who possess lower levels of financial literacy [19].

Methodology

This study was completed by following the below main methods:

- ❖ Development of the Student Loan System Dynamics Model.
- ❖ Creating ILE based on the Student loan System Dynamics model.
- ❖ ILE experiment by Undergraduate Students from multidisciplinary Education background.

Model Description

The base model for this ILE has been developed by combining few existing system dynamics models. The main model consists of four main modules. The trial module demonstrates the operational characteristics inside the trial foundation of the Interactive Learning Environment (ILE). The federal loan module provides an illustration of the operational mechanics pertaining to federal loans, while the private loan module demonstrates the functionality of the scenario in which a student opts for a private loan.

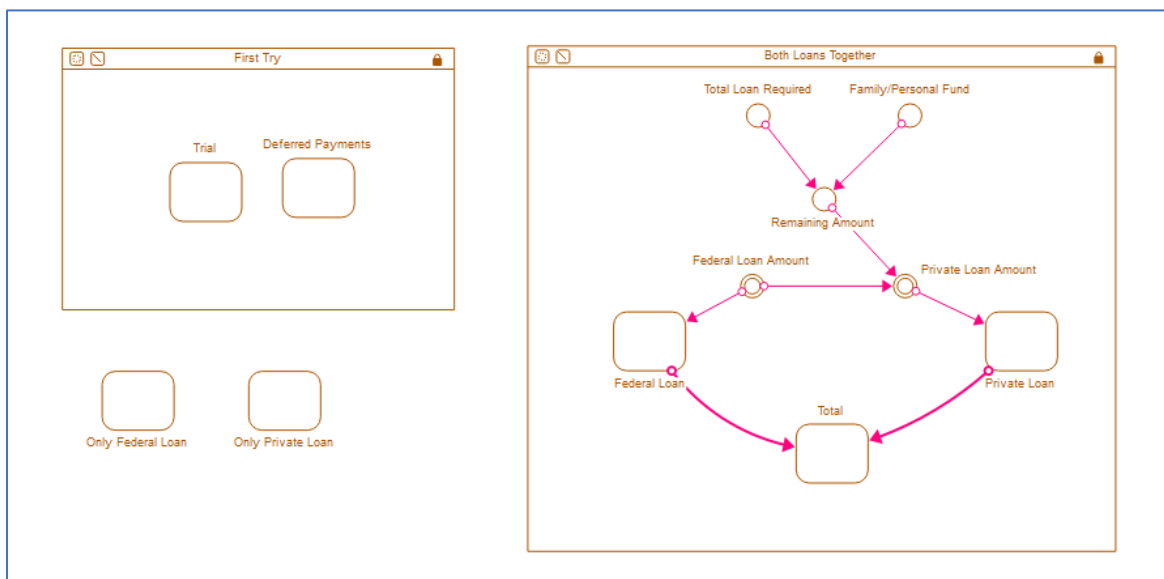


Fig 1(a) Student loan base model

Another module, referred to as deferred payments, is also available. This module is used to function the 6 months deferred payment in the trial phase of the model. This module demonstrates the functionality of the model in scenarios involving postponed payments.

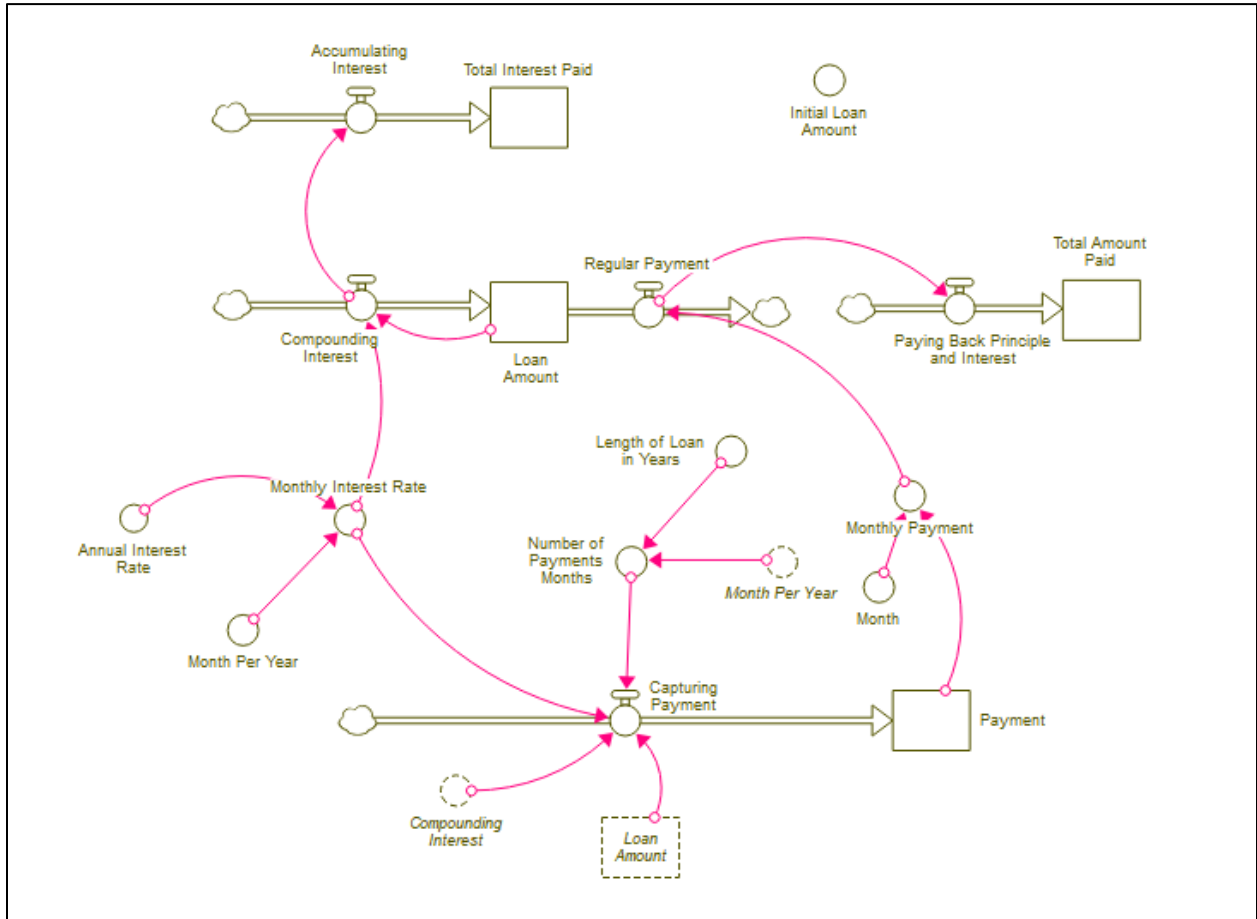


Fig 1(b): Stock and flow diagram Deferred module

The internal configuration of the modules exhibits a comparable structure, although having distinct functionalities. A variable named family/ personal fund has been integrated in the model as well. Another assumption that has been taken into account during the development process is that students generally exhibit a preference for federal loans. However, in cases where the amount obtained from federal loans is insufficient, they may opt to supplement their funding with private loans. The model incorporates an additional payment option that allows students to choose to repay an additional amount from their overall loan amount. Additionally, there is a variable that specifically incorporates interest payments, enabling students to decide whether

they wish to commence making solely interest payments while still enrolled in school. The model also consists of an option where students can choose to make early payment or even defer their repayment process.

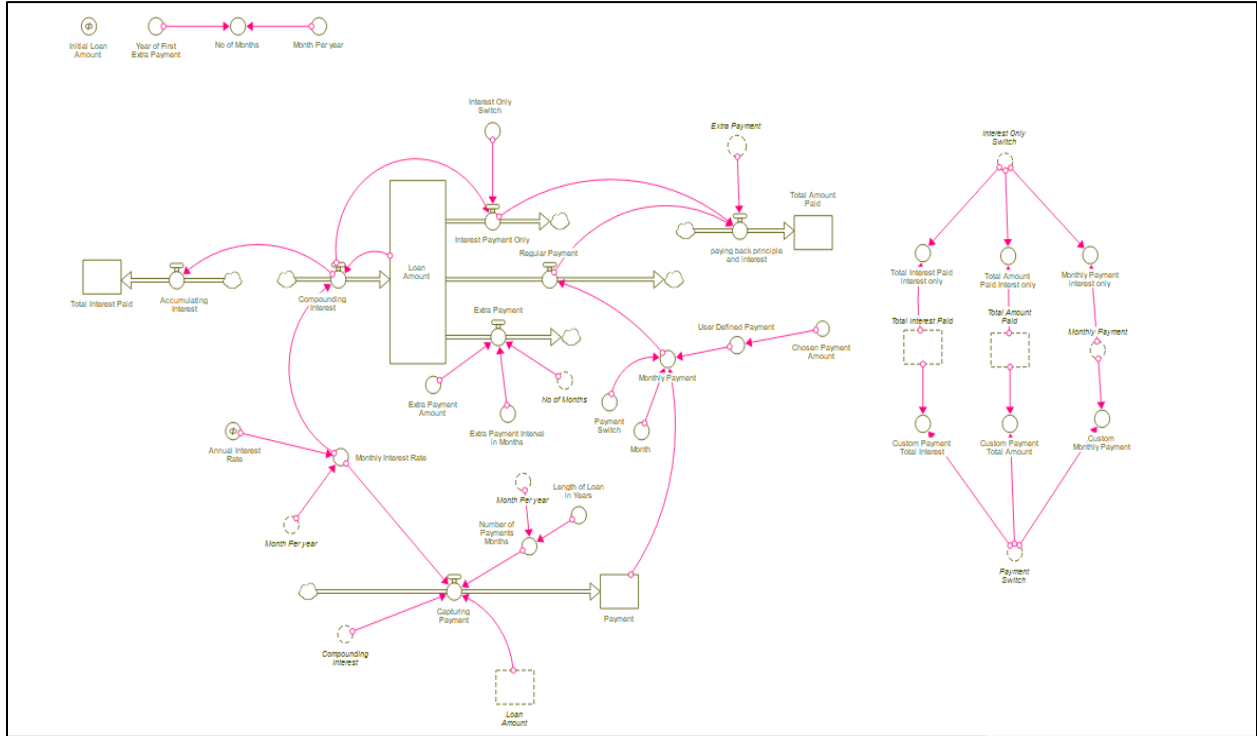


Fig 1(c) Stock and flow diagram Trial module

ILE Development

‘Understanding Student Loan’ is an ILE which has been developed on the basis of the student loan system dynamics model. This simulation tool has been developed for non-SD students to easily understand how the student loan system works. Initially the ILE consists of a trial phase which includes the basics parameters required for a student loan. The participants have the opportunity to engage in the trial phase and observe the outcomes of their specific preferences.

On the initial page of the Interactive Learning Environment (ILE), participants are provided with an introductory understanding of the simulation tool that they will engage with during their session. The trial phase consists of the basic parameters of a loan such as the amount of loan, interest rate and repayment period. These parameters are initially set based on the initial data from the SD model, although they can be modified during this phase. The page features three options: "Simulation," "Live," and "Try Again." These buttons serve the purposes of simulating the Interactive Learning Environment (ILE), observing real-time results while modifying parameters, and resetting the entire simulation process, respectively. Two graphs are presented to illustrate the outcomes of total loan repayment and interest payment, as determined by the selected data preferences. Participants are also able to verify the cumulative payment amount by referring to the lower section of the page. The trial page provides users with a basic understanding of the functioning of the Interactive Learning Environment (ILE).

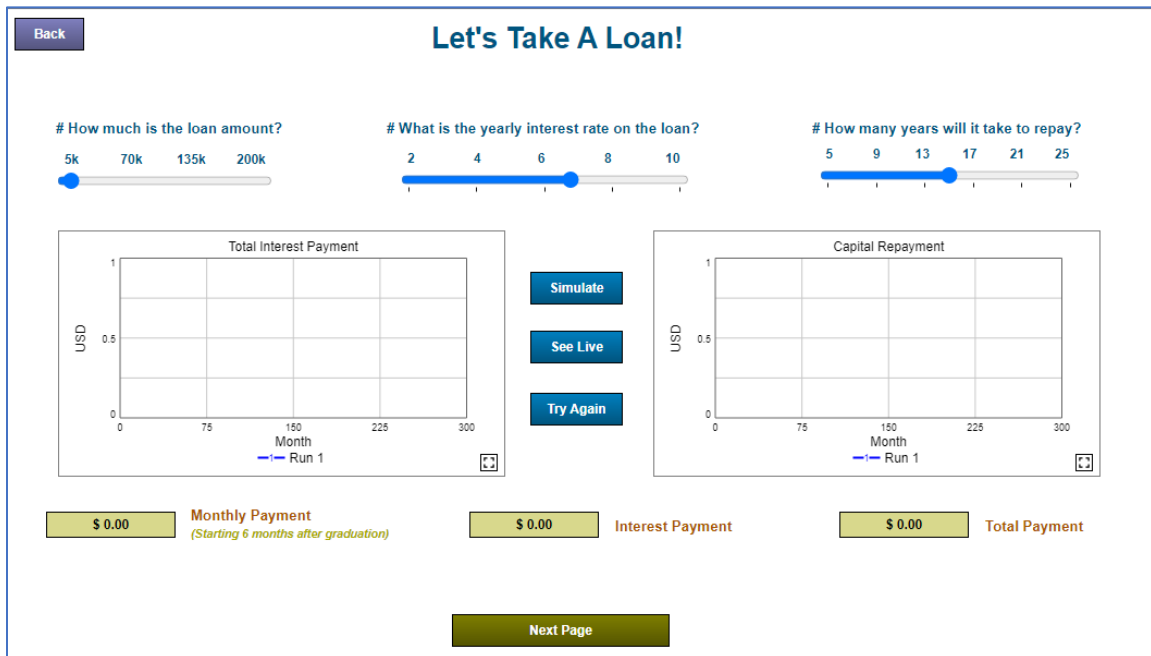


Fig. Trial page of ILE

Following the completion of the trial phase, participants will progress to the subsequent phase, during which they will be introduced to fundamental principles that must be understood prior to obtaining a student loan. This page will facilitate the participants in navigating through various loan categories and payment options. The buttons inside the loan categories enable individuals to examine the benefits and drawbacks associated with both federal and private loans. Within the available payment type alternatives, participants possess the ability to travel through several parameters in order to discern and select the most suitable method for repaying their loan debt.

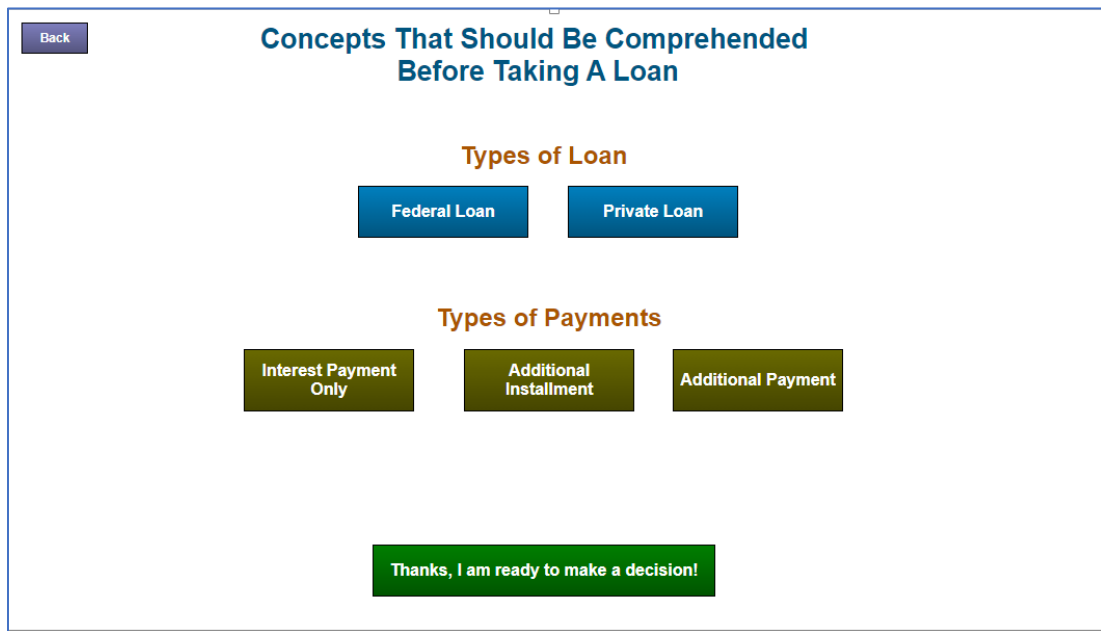


Fig: Concepts to comprehend for student loan

Upon selecting the federal loan option, users will be redirected to a page that presents a comprehensive overview of the pros and cons associated with obtaining a federal loan. Similarly, if the button for the private loan is pressed, the aforementioned principle applies. This will enable a student to comprehend the fundamental distinctions between these two loans and assist them in making a good selection.



Fig: Advantages & Disadvantages of federal loan



Fig: Advantages & Disadvantages of Private loan

If the user selects the button corresponding to an interest-only payment option, the system will afterwards lead them to a page that presents a repayment alternative for student loan obligations. On this page, the loan amount, interest rate, and repayment time remain same throughout. The method includes a switch option that allows participants to activate the interest-only payment feature. The simulated outcomes prior to and after activating the interest-only payment feature are visually represented in the two graphs, along with the corresponding result bars.

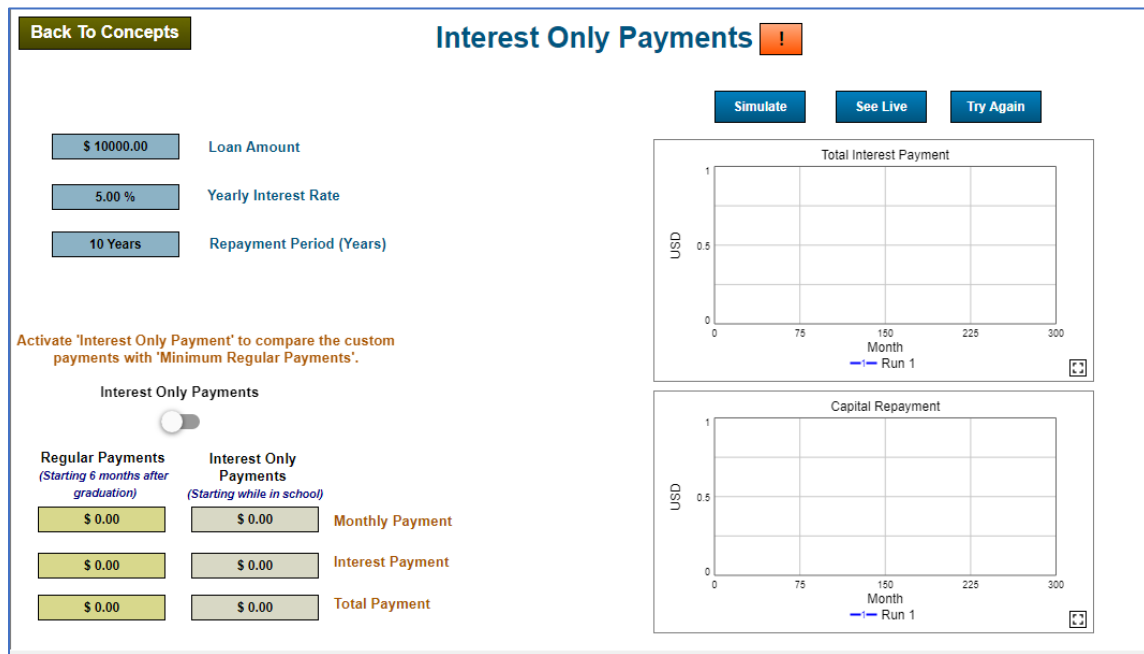


Fig: Interest only payment method

Additional payments are a different way to repay. This payment is derived to be an additional sum that must be paid on top of the previously agreed-upon payment amount. The main loan parameters are fixed on this page just like they were before, but the user can toggle the additional payment option on and modify the monthly payment to observe how the repayment schedule has changed.

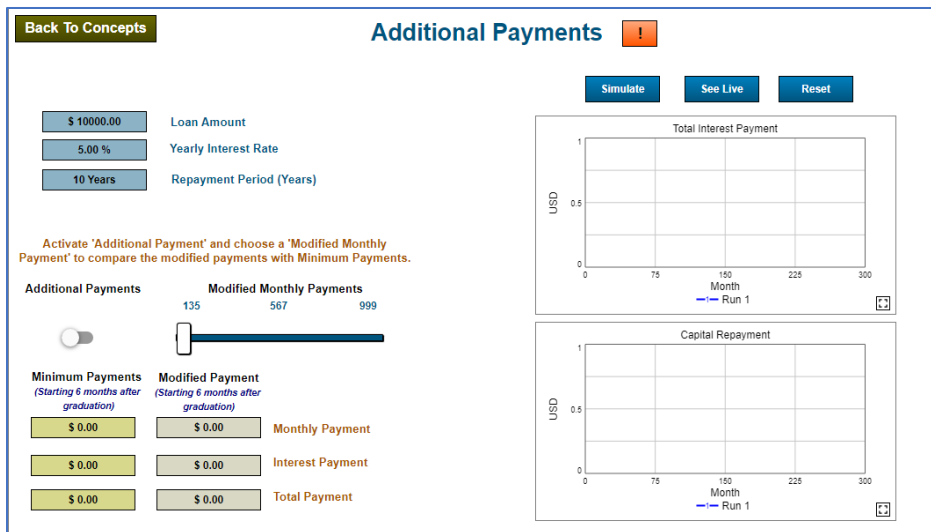


Fig: Additional Payments method

Another repayment concept is additional installments. An additional installment refers to an additional payment made by the borrower that goes beyond the regular monthly payment required by the loan agreement. Making additional installment on a student loan can be a strategic financial move to pay off the loan faster and reduce the overall interest cost. In the additional installment page, the basic loan parameters are fixed. There are three slider buttons that can be moved to change the amount of additional payment, year of payment and the time interval.

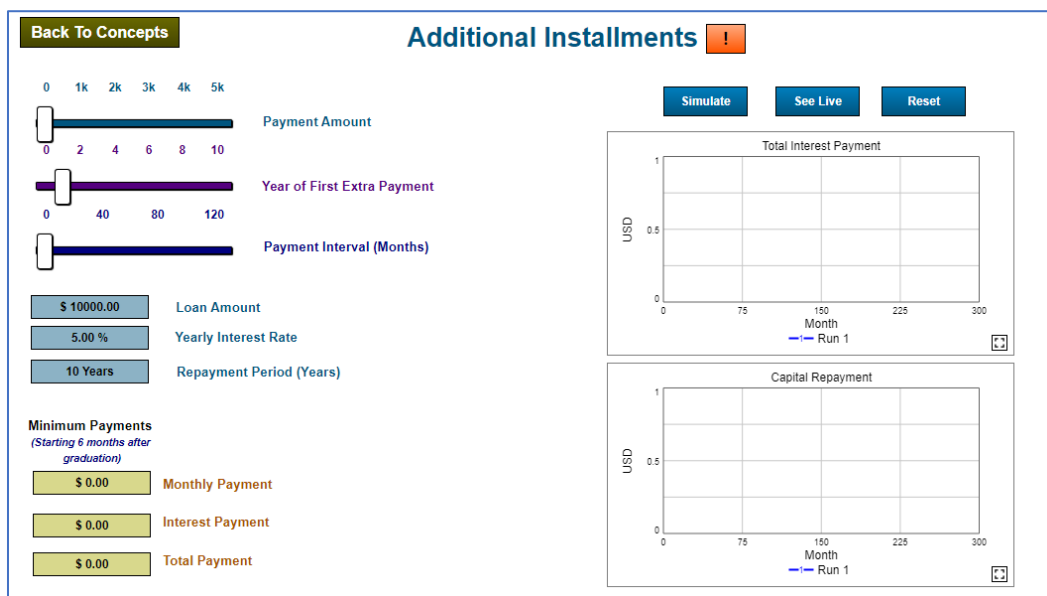


Fig: Additional installment method

The next page of the ILE gives an option to the user to choose between federal loan or private loan. It has another option to direct the user to a page where the user can choose both federal and private loan together.

The page dedicated to federal loans encompasses the essential loan criteria along with supplementary loan repayment options. The necessary criteria are not predetermined and can be selected based on the user's discretion. By modifying the supplementary variables, the user is able to observe the alterations in the outcome of the loan repayment procedure and then make an informed decision.

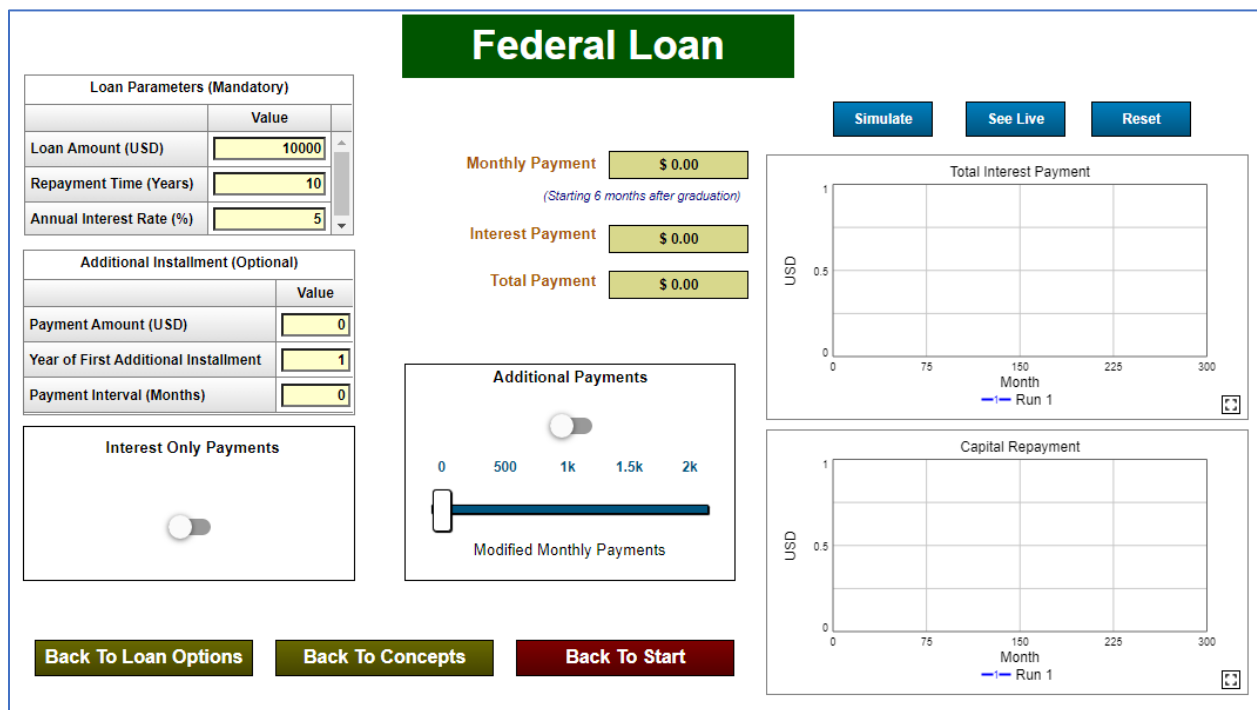


Fig: Federal Loan

The next page of the ILE refers to the Private loan option. The private loan segment has the same parameters as the federal loan with one additional option. The model by default starts the loan repayment process after 6 months of graduation. But in the Private loan segment an option has been added to change the settings for starting time of repayment process.

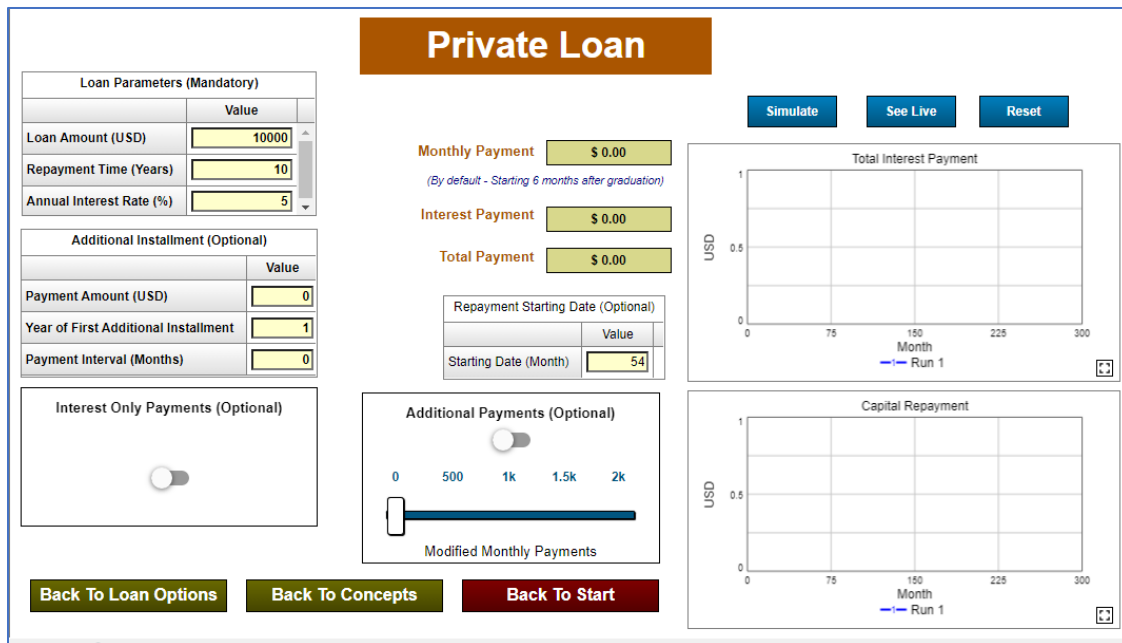


Fig: Private Loan

In the last segment of the ILE both Federal and Private loans are shown together. Both loan schemes has the same parameters but mainly developed to see how it works if the user prefers to take both Federal and private loan together. By changing different parameters and adding/excluding additional repayment options, the user can check the outcome in the mentions graphs and choose the best loan option for them.

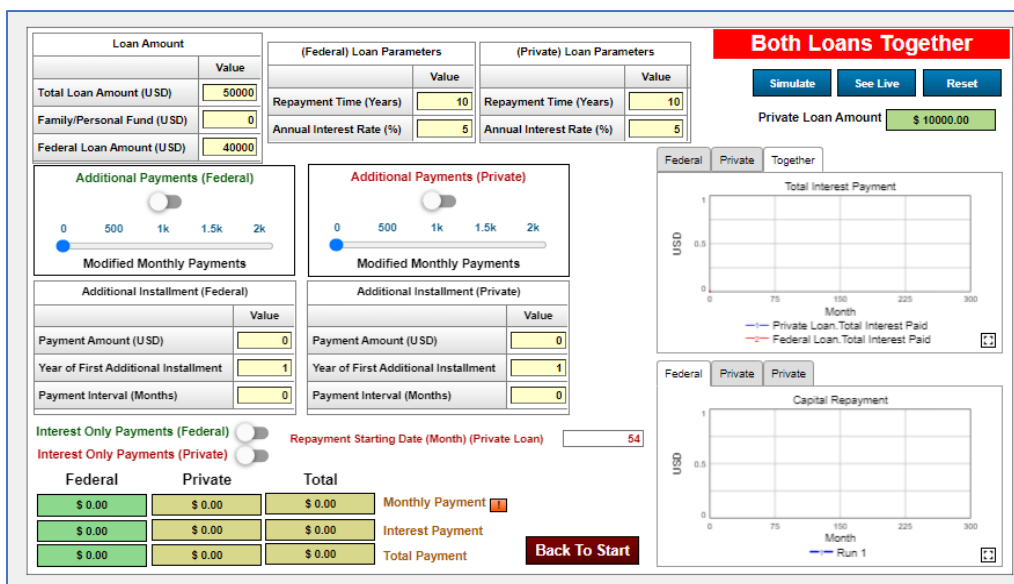


Fig: Both Federal and Private Loans together

Experiment Procedure

This section provides the procedure that has been used during the experiment.

The present study has been carried out on a sample of students with diverse educational backgrounds. There was a total of 20 students, with 5 students each coming from the fields of business, social science, engineering, and medical studies. The study sample consisted of both male and female individuals aged 18 to 25 years. The participants consisted of a mixture of first-year undergraduate students who had already taken out student loans, as well as students who were planning to obtain loans in the near future.

The inclusion of students with diverse study backgrounds in the analysis of an education loan experiment facilitated a more holistic comprehension of the effects of student loans within different academic domains. Tuition fees for undergraduate studies vary from program to program. An average Medical school student owes the highest amount of student debts which can be around \$200,000. On the other hand, the business students owe on average \$80,000, social science students take an average of \$60,000 loan [14] and engineering students owe around \$30,000 as debt [22]. This was a key reason for choosing different background students for this experiment.

The experiment was conducted in a face-to-face manner with each participant. Each participant was guided alongside the simulation process of the ILE.

a. Trial Phase

In the beginning of the trial phase, the participants were provided with an opportunity to engage in the Interactive Learning Environment (ILE) for a predetermined duration within a specific year, with the intention of repaying a defined sum at a chosen interest rate. The result provided them with an understanding of the functioning of the simulation tool. Subsequently, participants were provided with the chance to modify the parameters in accordance with their personal preferences and observe the ensuing outcomes. This phase additionally facilitated the demonstration of the outcomes resulting from the modified parameters in live mode. Following

multiple trial runs, each participant developed a level of familiarity with the simulation tool, thereby indicating their preparedness to go to the next step.

b. Understanding the concepts

After completing the trial phase, the participants were sent to the following step, which was where they would obtain clear information about the advantages and disadvantages of the various types of loans, as well as the various processes for repaying the loans. They were able to maneuver between the many buttons in order to familiarize themselves with the various concepts.

c. Simulating different repayment options

Participants have the option to select several methods of debt repayment by interacting with the various buttons associated with the repayment concepts. By selecting the interest-only payment option, individuals will have the opportunity to observe the disparity between the minimum regular payment and the interest-only payment. In this instance, the fundamental parameters will remain constant. The participant has the option to activate the switch for interest-only payment and initiate the simulation.

By choosing the additional payment method, the user can check the variation on the repayment process based on additional payment. By activating the additional payment switch and choosing a modified monthly payment, they can compare the modified payment with the regular predefined monthly payments.

In the additional installment concept, the user will be able to pay extra installment additional with the predefined monthly payment. They can choose the extra amount by navigating the payment amount slider. They can also choose the year they want to start the additional installment and the time interval between each installment.

d.Choosing between Federal Loan and private loan

The subsequent page will allow the user to choose their desirable loan option and run test to see how the process functions. By choosing the Federal loan button the user will be redirected to the page for Federal loan simulation test. This page has the option to change the mandatory loan parameters according to the user's preference. It also includes the previously mentioned three repayment options by using which the user can find their desirable loan plan with optimal payment solution.

The user can also choose the private loan option to conduct the simulation and decide on their favorable option. The private loan step has the similar parameters like the federal loan with one additional parameter to change the loan start time. By changing the parameters. The user will be able to check the payment process and repayment opportunities for private loan as well.

Choosing both Federal and Private loan

The last criterial of the ILE is to test with both federal and private loans. In this page mandatory parameters for both Federal and Private loans is included with the additional repayment options. The user can divide the required loan amount between the two loan options with their favorable interest rate and repayment duration. After running the test they can change the numbers according to their requirement to get the desired result.

Research Ethics

This study followed strict ethical guidelines to protect participants' rights, privacy, and well-being. Participants were informed clearly and comprehensively about the research goal, procedures, potential risks and benefits, and voluntary nature before participating. Informed consent was obtained from all participants, and they had the opportunity to ask questions and clarify any concerns before deciding to participate. Ethical rules and related laws was strictly followed when collecting and handling data. The data of the participants was gathered in a way that guarantees accuracy, integrity, and safety. There were measures put in place to protect against data leaks or illegal access.

Results and Analysis

a. Trial Phase:

During the trial phase the 3 participants among 5 medical background participants chose to run the ILE with maximum loan amount but less interest rate and shorter repayment period. The other 2 participants navigated in between higher loan amount with less interest rate and higher repayment period. The Business Background participants were more calculative even in the trial phase. All of them showed comparable results with their trial run. The Social Science participants were diverse in this initial phase. Same results were seen with the engineering participants.

Loan amount (\$)	Number of participants
0 – 50,000	0
50,000 - 100,000	0
100,000 - 150,000	2
150,000 - 200,000	3

Table 1a: Loan amount chosen by Medical students

Interest rate (%)	Number of participants
0 – 4	3
4 - 7	2
7 - 10	0

Table 1b: interest rate chosen by Medical students

Repayment duration (year)	Number of participants
0 –10	3
10 - 15	1
15 - 25	1

Table 1c: Repayment period chosen by Medical students

When queried about the decision-making process throughout the trial period, individuals with a medical background indicated that they opted for the highest loan amount due to the higher costs associated with medical studies.

Loan amount (\$)	Number of participants
0 – 50,000	2
50,000 - 100,000	2
100,000 - 150,000	1
150,000 - 200,000	0

Table 2a: Loan amount chosen by business students

Interest rate (%)	Number of participants
0 – 4	0
4 - 7	5
7 - 10	0

Table 2b: interest rate chosen by business students

Repayment duration (year)	Number of participants
0 –10	0
10 - 15	3
15 - 25	2

Table 2c: Repayment period chosen by business students

When queried about their decision-making process during the trial phase, individuals with a business experience expressed a preference for conducting an analysis of the procedure prior to obtaining a student loan.

Loan amount (\$)	Number of participants
0 – 50,000	3
50,000 - 100,000	1
100,000 - 150,000	1
150,000 - 200,000	0

Table 3a: Loan amount chosen by Social Science students

Interest rate (%)	Number of participants
0 – 4	2
4 - 7	2
7 - 10	1

Table 3b: interest rate chosen by Social Science students

Repayment duration (year)	Number of participants
0 –10	1
10 - 15	2
15 - 25	2

Table 3c: Repayment period chosen by Social science students

The individuals with a background in Social Science exhibited diverse outcomes in their decision-making process during the trial phase. Each of the five participants exhibited distinct preferences while choosing the borrowing method.

The participants with an Engineering background also exhibited variability in their selected parameters, similar to the participants from the Social Science discipline.

Loan amount (\$)	Number of participants
0 – 50,000	2
50,000 - 100,000	2
100,000 - 150,000	1
150,000 - 200,000	0

Table 4a: Loan amount chosen by Engineering students

Interest rate (%)	Number of participants
0 – 4	0
4 - 7	5
7 - 10	0

Table 4b: interest rate chosen by Engineering students

Repayment duration (year)	Number of participants
0 –10	0
10 - 15	3
15 - 25	2

Table 4c: Repayment period chosen by Engineering students

b. Comprehending the concept

Once the trial phase was completed, the participants were asked to move forward in the ILE. In the next phase, the participants were allowed to look into fundamental ideas pertaining to various sorts of loans, as well as the associated benefits and drawbacks. Additionally, three distinct loan repayment strategies were introduced to them. The examination of the benefits and drawbacks associated with both Federal and private loans has provided them with insight to make a more informed decision in the future stages. In the context of the interest pay only technique, participants have the ability to activate the switch and assess the disparity between the outcomes of normal payments and interest-only payments.

c. Additional repayment method

The participants were asked to test out additional repayment choices after going over the benefits and drawbacks of both federal and private loans in order to determine their preferences. They were able to see the variations in the loan payback procedure by adjusting the parameter values. They were instructed to continue with the main test run after they were comfortable with the procedure.

d. Test phase 1

After receiving the necessary training and guidance through the trial test and other loan repayment settings, the participants had the choice to simulate between federal loan, Private loan and selecting both loan at a time. For the first test run all the participants had different choice criteria. According to their needs, the Participants modified the loan's principal amount, interest rate, and payback schedule. In order to determine the best solution or loan plan for themselves, they also included or excluded the option of making additional loan repayments. The following tables show the Test phase 1 result according to educational background of the participants.

Loan Criteria	No. of Participants
Federal Loan	3
Private Loan	2
Federal & Private loan together	0

Table : Test phase 1 for medical background participants

The majority participant from medical background decided to test the federal loan model first. The rest of them chose the private loan system. No participant chose the option where both loans are functioning at a time.

Loan Criteria	No. of Participants
Federal Loan	4
Private Loan	1
Federal & Private loan together	0

Table : Test phase 1 for Business background participants

The business background participants mostly favored the Federal Loan system.

Loan Criteria	No. of Participants
Federal Loan	2
Private Loan	2
Federal & Private loan together	1

Table : Test phase 1 for Social Science background participants

Among the Social Science students, 1 participant chose to run the model with both federal and private loan option and the rest of them were equally divided in Federal and Private loan segments accordingly.

Loan Criteria	No. of Participants
Federal Loan	2
Private Loan	1
Federal & Private loan together	2

Table : Test phase 1 for Engineering background participants

Among the Engineering background participants, two run their test with federal and private loan together. Two chose the Federal loan option and the remaining participants chose Private loan.

e.Test Phase 2

After the first test phase was completed, the participants were asked to return to the front page of the ILE and go through the same testing process with Federal, Private and Both loans option one more time. This was done to see if there were any changes in their selection process. In the 2nd test phase, there was a significant change in the selection process by the participants. The below tables show the test phase 2 result for all the participants according to their background.

Loan Criteria	No. of Participants
Federal Loan	1
Private Loan	1
Federal & Private loan together	3

Table : Test phase 2 for Medical background participants

Loan Criteria	No. of Participants
Federal Loan	1
Private Loan	1
Federal & Private loan together	3

Table : Test phase 2 for Business background participants

Loan Criteria	No. of Participants
Federal Loan	2
Private Loan	1
Federal & Private loan together	2

Table : Test phase 2 for Social Science background participants

Loan Criteria	No. of Participants
Federal Loan	3
Private Loan	2
Federal & Private loan together	0

Table : Test phase 2 for Engineering background participants

In the second test phase, the majority of participants with medical backgrounds opted for the option that incorporates both federal and private loans. When asked why they made their choice, the majority of them cited the higher tuition costs. The other participants' selection procedures also varied from the first test phase.

f. Final Test Phase

During the final test phase the participants were confident enough to simulate the ILE according to their requirement and choose a loan scheme that was best for them. The Test result for the final phase is given in the tables below.

Loan Criteria	No. of Participants
Federal Loan	1
Private Loan	0
Federal & Private loan together	4

Table : Final test phase for Medical background participants

Loan Criteria	No. of Participants
Federal Loan	3
Private Loan	2
Federal & Private loan together	0

Table : Final test phase for Business background participants

Loan Criteria	No. of Participants
Federal Loan	2
Private Loan	2
Federal & Private loan together	1

Table : Final Test phase for Social Science participants

Loan Criteria	No. of Participants
Federal Loan	3
Private Loan	1
Federal & Private loan together	1

Table : Final Test Phase for Engineering background participants

Once the Final test has been completed, the participants were asked to give their feedback on the reason behind their final choice with the loan options. The option where they can take both Federal and Private loans was selected by the majority of participants with a medical background. Due to the high cost of medical school, it can be challenging for students to borrow the whole amount from federal banks. They must thus borrow the remaining sum from commercial banks. The medical students would therefore be better off borrowing money from both sources.

Compared to medical degrees, business studies have lower tuition costs. Because of the lower interest rates and simple repayment procedures, three of the participants chose to take out federal loans. The other two participants, on the other hand, made the decision to take out a private loan with a flexible repayment plan.

From the social science background participants, only one decided to go for the option with both federal and private loan due to the higher tuition fees of specific educational institution. The other four participants were equally favorable to the federal and private loan system.

The engineering participants mostly chose the federal loan scheme for low and fixed interest rate, with better repayment option.

There is no clear pattern in the loan combinations that each participant in this experiment selected. The only thing that can be concluded is that students prefer to accept both federal and private loans when tuition costs are high.

Feedback

The experiment has received positive feedback from the participants. By using this ILE the participants were able to understand the concepts of both types of loans and could differentiate among them. They were also able to decide on which type of loan will be a better option for their specific requirement in case of taking out student loans. They were also very optimistic to test the different repayment option available in the ILE. The ILE experiment focusing on student loans has proved to be an effective initiative for enhancing students' comprehension and decision-making regarding student loan management. Participants are provided with an engaging and

interactive learning environment as a result of the experiment's success. Through the utilization of interactive technologies, simulations, and the incorporation of interesting components, participants are able to actively engage and acquire knowledge through experiential learning. The experiment successfully combines plausible situations that closely resemble the issues and problems that students deal with when managing their student loans. The experiment improves participants' capacity to use knowledge and make wise decisions by exposing them to real-world scenarios like budgeting exercises, interest rate comparisons, and loan payback computations.

Limitations

- One limitation in the experiment is that the mentioned deferred loan payment could not be integrated during the modeling process.
- The ILE shows a fixed interest rate for Private loans and did not change year to year. This issue can be solved in future studies.
- This experiment only included undergraduate students as participants. Undergraduate students have four years of study ahead of them, which is a fantastic time to decide on a study loan experiment. This was the main rationale for adopting this sample criterion. But this experiment can include master's students as well as students who have already graduated and has student debt already.
- Loan consolidation was not considered in the developed model.
- Income driven payment and debt forgiveness was not considered for federal loan.

Conclusion

The experiment with an interactive learning environment that focused on student loans has shown to be a useful and effective method for equipping students with the knowledge and abilities required to successfully negotiate the challenges of managing student loan debt. The experiment has the potential to have a major impact on students' financial well-being and loan-related decision-making by designing an interesting and interactive experience, incorporating realistic circumstances, and emphasizing informed decision-making.

Students actively participate in their own education through the experiment, which gives them the opportunity to practice critical thinking and financial literacy. Participants develop a greater grasp of loan conditions, repayment possibilities, and long-term financial repercussions through simulations of real-world loan scenarios, empowering them to make decisions that are in line with their own needs and professional goals.

The experiment's emphasis on simulations, scenarios, and interactive technologies improves student memory of important ideas. The experiment gives students the ability to examine loan possibilities, compare interest rates, determine repayment amounts, and create unique repayment schemes by giving them access to pertinent information, tools, and resources.

Although the trial has shown several positive aspects, there is still room for development. The usefulness and relevance of the experiment can be increased by extending its scope to include more financial literacy issues, allowing for customization and personalisation, and assessing long-term effects. Future directions that could broaden the experiment's influence include working with financial institutions and incorporating it into academic programs.

In conclusion, the interactive learning environment experiment on student loans has a lot of potential for empowering students with the information, abilities, and self-assurance they need to successfully manage their debt. The experiment can continue to develop and positively impact students' financial well-being by addressing the areas for improvement and considering potential future directions. This will enable them to make informed decisions as they navigate their educational journey and future financial success.

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Appendix A

	Equation	Properties	Units
"Family/Personal_Fund"	0		USD
Federal_Loan_Amount	40000		USD
Private_Loan_Amount	Remaining_Amount - Federal_Loan_Amount		USD
Remaining_Amount	Total_Loan_Required - "Family/Personal_Fund"		USD
Total_Loan_Required	50000		USD
Deferred_Payments.Accumulating_Interest	Compounding_Interest		USD/ Month
Deferred_Payments.Annual_Interest_Rate	5		1/Year
Deferred_Payments.Capturing_Payment	IF TIME = 54 THEN - PMT(Monthly_Interest_Rate, Number_of_Payments_Months, Loan_Amount + Compounding_Interest*DT,0) ELSE 0		USD/ Month
Deferred_Payments.Compounding_Interest	Monthly_Interest_Rate*Loan_Amount		USD/ Month
Deferred_Payments.Initial_Loan_Amount	10000		USD
Deferred_Payments.Length_of_Loan_in_Years	10		Year
Deferred_Payments.Loan_Amount(t)	Loan_Amount(t - dt) + (Compounding_Interest - Regular_Payment) * dt	INIT Deferred_Payments .Loan_Amount = Initial_Loan_Amount	USD
Deferred_Payments.Month	1		Month

Deferred_Payments.Month_Per_Year	12		Month/Year
Deferred_Payments.Monthly_Interest_Rate	(Annual_Interest_Rate/100)/Month_Per_Year		1/Month
Deferred_Payments.Monthly_Payment	Payment/Month		USD/Month
Deferred_Payments.Number_of_Payments_Months	Length_of_Loan_in_Years*Month_Per_Year		Month
Deferred_Payments.Paying_Back_Principle_and_Interest	Regular_Payment		USD/Month
Deferred_Payments.Payment(t)	Payment(t - dt) + (Capturing_Payment) * dt	INIT Deferred_Payments.Payment = 0	USD
Deferred_Payments.Regular_Payment	Monthly_Payment		USD/Month
Deferred_Payments.Total_Amount_Paid(t)	Total_Amount_Paid(t - dt) + (Paying_Back_Principle_and_Interest) * dt	INIT Deferred_Payments.Total_Amount_Paid = 0	USD
Deferred_Payments.Total_Interest_Paid(t)	Total_Interest_Paid(t - dt) + (Accumulating_Interest) * dt	INIT Deferred_Payments.Total_Interest_Paid = 0.0001	USD
Federal_Loan.Accumulating_Interest	Compounding_Interest		USD/Month
Federal_Loan.Annual_Interest_Rate	5		1/Year
Federal_Loan.Capturing_Payment	IF TIME = 54 THEN - PMT(Monthly_Interest_Rate, Number_of_Payments_Months, Loan_Amount +		USD/Month

	Compounding_Interest*DT, 0) ELSE 0		
Federal_Loan.Chosen_Payment_Amount	0		USD/ Month
Federal_Loan.Compounding_Interest	Monthly_Interest_Rate*Loan_Amount		USD/ Month
Federal_Loan.Custom_Monthly_Payment	IF Payment_Switch =1 THEN Monthly_Payment ELSE 0		USD/ Month
Federal_Loan.Custom_Payment_Total_Amount	IF Payment_Switch =1 THEN Total_Amount_Paid ELSE 0		USD
Federal_Loan.Custom_Payment_Total_Interest	IF Payment_Switch = 1 THEN Total_Interest_Paid ELSE 0		USD
Federal_Loan.Extra_Payment	PULSE(Extra_Payment_Amount, No_of_Months, Extra_Payment_Interval_in_Months)	OUTFLOW PRIORITY: 3	USD/ Month
Federal_Loan.Extra_Payment_Amount	0		USD
Federal_Loan.Extra_Payment_Interval_in_Months	0		Month
Federal_Loan.Interest_Only_Switch	0		dmnl
Federal_Loan.Interest_Payment_Only	IF TIME < 54 AND Interest_Only_Switch = 1 THEN Compounding_Interest ELSE 0	OUTFLOW PRIORITY: 2	USD/ Month
Federal_Loan.Length_of_Loan_in_Years	10		Year
Federal_Loan.Loan_Amount(t)	Loan_Amount(t - dt) + (Compounding_Interest - Regular_Payment - Interest_Payment_Only - Extra_Payment) * dt	INIT Federal_Loan.Loan_Amount = .Federal_Loan_Amount	USD

Federal_Loan.Month	1		Month
Federal_Loan.Month_Per_year	12		Month/Year
Federal_Loan.Monthly_Interest_Rate	(Annual_Interest_Rate/100)/Month_Per_year		1/Month
Federal_Loan.Monthly_Payment	IF Payment_Switch = 0 THEN Payment/Month ELSE User_Defined_Payment		USD/Month
Federal_Loan.Monthly_Payment_interest_only	IF Interest_Only_Switch =1 THEN Monthly_Payment ELSE 0		USD/Month
Federal_Loan.No_of_Months	Year_of_First_Extra_Payment*Month_Per_year		Month
Federal_Loan.Number_of_Payments_Months	Length_of_Loan_in_Years*Month_Per_year		Month
Federal_Loan.paying_back_principle_and_interest	Regular_Payment + Interest_Payment_Only + Extra_Payment		USD/Month
Federal_Loan.Payment(t)	Payment(t - dt) + (Capturing_Payment) * dt	INIT Federal_Loan.Payment = 0	USD
Federal_Loan.Payment_Switch	0		dmnl
Federal_Loan.Regular_Payment	Monthly_Payment	OUTFLOW PRIORITY: 1	USD/Month
Federal_Loan.Total_Amount_Paid(t)	Total_Amount_Paid(t - dt) + (paying_back_principle_and_interest) * dt	INIT Federal_Loan.Total_Amount_Paid = 0	USD
Federal_Loan.Total_Amount_Paid_Interest_only	IF Interest_Only_Switch =1 THEN Total_Amount_Paid ELSE 0		USD
Federal_Loan.Total_Interest_Paid(t)	Total_Interest_Paid(t - dt) + (Accumulating_Interest) * dt	INIT Federal_Loan.Total_Interest_Paid = 0	USD

Federal_Loan.Total_Interest_Paid_interest_only	IF Interest_Only_Switch = 1 THEN Total_Interest_Paid ELSE 0		USD
Federal_Loan.User_Defined_Payment	IF TIME >= 54 THEN Chosen_Payment_Amount ELSE 0		USD/Month
Federal_Loan.Year_of_First_Extra_Payment	1		Year
Only_Federal_Loan.Accumulating_Interest	Compounding_Interest		USD/Month
Only_Federal_Loan.Annual_Interest_Rate	5		1/Year
Only_Federal_Loan.Capturing_Payment	IF TIME = 54 THEN - PMT(Monthly_Interest_Rate, Number_of_Payments_Months, Loan_Amount + Compounding_Interest*DT, 0) ELSE 0		USD/Month
Only_Federal_Loan.Chosen_Payment_Amount	0		USD/Month
Only_Federal_Loan.Compounding_Interest	Monthly_Interest_Rate*Loan_Amount		USD/Month
Only_Federal_Loan.Custom_Monthly_Payment	IF Payment_Switch =1 THEN Monthly_Payment ELSE 0		USD/Month
Only_Federal_Loan.Custom_Payment_Total_Amount	IF Payment_Switch =1 THEN Total_Amount_Paid ELSE 0		USD
Only_Federal_Loan.Custom_Payment_Total_Interest	IF Payment_Switch = 1 THEN Total_Interest_Paid ELSE 0		USD
Only_Federal_Loan.Extra_Payment	PULSE(Extra_Payment_Amount, No_of_Months, Extra_Payment_Interval_in_Months)	OUTFLOW PRIORITY: 3	USD/Month
Only_Federal_Loan.Extra_Payment_Amount	0		USD

Only_Federal_Loan.Extra_Payment_Interval_in_Months	0		Month
Only_Federal_Loan.Initial_Loan_Amount	10000		USD
Only_Federal_Loan.Interest_Only_Switch	0		dmnl
Only_Federal_Loan.Interest_Payment_Only	IF TIME < 54 AND Interest_Only_Switch = 1 THEN Compounding_Interest ELSE 0	OUTFLOW PRIORITY: 2	USD/ Month
Only_Federal_Loan.Length_of_Loan_in_Years	10		Year
Only_Federal_Loan.Loan_Amount(t)	Loan_Amount(t - dt) + (Compounding_Interest - Regular_Payment - Interest_Payment_Only - Extra_Payment) * dt	INIT Only_Federal_Loan.Loan_Amount = Initial_Loan_Amount	USD
Only_Federal_Loan.Month	1		Month
Only_Federal_Loan.Month_Per_year	12		Month/Year
Only_Federal_Loan.Monthly_Interest_Rate	(Annual_Interest_Rate/100)/Month_Per_year		1/Month
Only_Federal_Loan.Monthly_Payment	IF Payment_Switch = 0 THEN Payment/Month ELSE User_Defined_Payment		USD/ Month
Only_Federal_Loan.Monthly_Payment_interest_only	IF Interest_Only_Switch =1 THEN Monthly_Payment ELSE 0		USD/ Month
Only_Federal_Loan.No_of_Months	Year_of_First_Extra_Payment*Month_Per_year		Month
Only_Federal_Loan.Number_of_Payments_Months	Length_of_Loan_in_Years*Month_Per_year		Month
Only_Federal_Loan.paying_back_principle_and_interest	Regular_Payment + Interest_Payment_Only + Extra_Payment		USD/ Month

Only_Federal_Loan.Payment(t)	Payment(t - dt) + (Capturing_Payment) * dt	INIT Only_Federal_Loan. Payment = 0	USD
Only_Federal_Loan.Payment_Switch	0		dmnl
Only_Federal_Loan.Regular_Payment	Monthly_Payment	OUTFLOW PRIORITY: 1	USD/ Month
Only_Federal_Loan.Total_Amount_Paid(t)	Total_Amount_Paid(t - dt) + (paying_back_principle_and_interest) * dt	INIT Only_Federal_Loan. Total_Amount_Paid = 0	USD
Only_Federal_Loan.Total_Amount_Paid_Interst_only	IF Interest_Only_Switch = 1 THEN Total_Amount_Paid ELSE 0		USD
Only_Federal_Loan.Total_Interest_Paid(t)	Total_Interest_Paid(t - dt) + (Accumulating_Interest) * dt	INIT Only_Federal_Loan. Total_Interest_Paid = 0	USD
Only_Federal_Loan.Total_Interest_Paid_interest_only	IF Interest_Only_Switch = 1 THEN Total_Interest_Paid ELSE 0		USD
Only_Federal_Loan.User_Defined_Payment	IF TIME >= 54 THEN Chosen_Payment_Amount ELSE 0		USD/ Month
Only_Federal_Loan.Year_of_First_Extra_Payment	1		Year
Only_Private_Loan.Accumulating_Interest	Compounding_Interest		USD/ Month
Only_Private_Loan.Annual_Interest_Rate	5		1/Year
Only_Private_Loan.Capturing_Payment	IF TIME = Repayment_Starting_Date THEN - PMT(Monthly_Interest_Rate, Number_of_Payments_Months, Loan_Amount + Compounding_Interest*DT, 0) ELSE 0		USD/ Month

Only_Private_Loan.Chosen_Payment_Amount	0		USD/ Month
Only_Private_Loan.Compounding_Interest	Monthly_Interest_Rate*Loan_Amount		USD/ Month
Only_Private_Loan.Custom_Monthly_Payment	IF Payment_Switch =1 THEN Monthly_Payment ELSE 0		USD/ Month
Only_Private_Loan.Custom_Payment_Total_Amount	IF Payment_Switch =1 THEN Total_Amount_Paid ELSE 0		USD
Only_Private_Loan.Custom_Payment_Total_Interest	IF Payment_Switch = 1 THEN Total_Interest_Paid ELSE 0		USD
Only_Private_Loan.Extra_Payment	PULSE(Extra_Payment_Amount, No_of_Months, Extra_Payment_Interval_in_Months)	OUTFLOW PRIORITY: 3	USD/ Month
Only_Private_Loan.Extra_Payment_Amount	0		USD
Only_Private_Loan.Extra_Payment_Interval_in_Months	0		Month
Only_Private_Loan.Initial_Loan_Amount	10000		USD
Only_Private_Loan.Interest_Only_Switch	0		dmnl
Only_Private_Loan.Interest_Payment_Only	IF TIME < 54 AND Interest_Only_Switch = 1 THEN Compounding_Interest ELSE 0	OUTFLOW PRIORITY: 2	USD/ Month
Only_Private_Loan.Length_of_Loan_in_Years	10		Year
Only_Private_Loan.Loan_Amount(t)	Loan_Amount(t - dt) + (Compounding_Interest - Regular_Payment - Interest_Payment_Only - Extra_Payment) * dt	INIT Only_Private_Loan.Loan_Amount = Initial_Loan_Amount	USD

Only_Private_Loan.Month	1		Month
Only_Private_Loan.Month_Per_year	12		Month/Year
Only_Private_Loan.Monthly_Interest_Rate	(Annual_Interest_Rate/100)/Month_Per_year		1/Month
Only_Private_Loan.Monthly_Payment	IF Payment_Switch = 0 THEN Payment/Month ELSE User_Defined_Payment		USD/Month
Only_Private_Loan.Monthly_Payment_interest_only	IF Interest_Only_Switch =1 THEN Monthly_Payment ELSE 0		USD/Month
Only_Private_Loan.No_of_Months	Year_of_First_Extra_Payment*Month_Per_year		Month
Only_Private_Loan.Number_of_Payments_Months	Length_of_Loan_in_Years*Month_Per_year		Month
Only_Private_Loan.paying_back_principle_and_interest	Regular_Payment + Interest_Payment_Only + Extra_Payment		USD/Month
Only_Private_Loan.Payment(t)	Payment(t - dt) + (Capturing_Payment) * dt	INIT Only_Private_Loan.Payment = 0	USD
Only_Private_Loan.Payment_Switch	0		dmnl
Only_Private_Loan.Regular_Payment	Monthly_Payment	OUTFLOW PRIORITY: 1	USD/Month
Only_Private_Loan.Repayment_Starting_Date	54		Month
Only_Private_Loan.Total_Amount_Paid(t)	Total_Amount_Paid(t - dt) + (paying_back_principle_and_interest) * dt	INIT Only_Private_Loan.Total_Amount_Paid = 0	USD
Only_Private_Loan.Total_Amount_Paid_Interst_only	IF Interest_Only_Switch =1 THEN Total_Amount_Paid ELSE 0		USD

Only_Private_Loan.Total_Interest_Paid(t)	Total_Interest_Paid(t - dt) + (Accumulating_Interest) * dt	INIT Only_Private_Loan.Total_Interest_Paid = 0	USD
Only_Private_Loan.Total_Interest_Paid_interest_only	IF Interest_Only_Switch = 1 THEN Total_Interest_Paid ELSE 0		USD
Only_Private_Loan.User_Defined_Payment	IF TIME >= Repayment_Starting_Date THEN Chosen_Payment_Amount ELSE 0		USD/ Month
Only_Private_Loan.Year_of_First_Extra_Payment	1		Year
Private_Loan.Accumulating_Interest	Compounding_Interest		USD/ Month
Private_Loan.Annual_Interest_Rate	5		1/Year
Private_Loan.Capturing_Payment	IF TIME = Repayment_Starting_Date THEN -PMT(Monthly_Interest_Rate, Number_of_Payments_Months, Loan_Amount + Compounding_Interest*DT, 0) ELSE 0		USD/ Month
Private_Loan.Chosen_Payment_Amount	0		USD/ Month
Private_Loan.Compounding_Interest	Monthly_Interest_Rate*Loan_Amount		USD/ Month
Private_Loan.Custom_Monthly_Payment	IF Payment_Switch =1 THEN Monthly_Payment ELSE 0		USD/ Month
Private_Loan.Custom_Payment_Total_Amount	IF Payment_Switch =1 THEN Total_Amount_Paid ELSE 0		USD
Private_Loan.Custom_Payment_Total_Interest	IF Payment_Switch = 1 THEN Total_Interest_Paid ELSE 0		USD

Private_Loan.Extra_Payment	PULSE(Extra_Payment_Amount, No_of_Months, Extra_Payment_Interval_in_Months)	OUTFLOW PRIORITY: 3	USD/ Month
Private_Loan.Extra_Payment_Amount	0		USD
Private_Loan.Extra_Payment_Interval_in_Months	0		Month
Private_Loan.Interest_Only_Switch	0		dmnl
Private_Loan.Interest_Payment_Only	IF TIME < 54 AND Interest_Only_Switch = 1 THEN Compounding_Interest ELSE 0	OUTFLOW PRIORITY: 2	USD/ Month
Private_Loan.Length_of_Loan_in_Years	10		Year
Private_Loan.Loan_Amount(t)	Loan_Amount(t - dt) + (Compounding_Interest - Regular_Payment - Interest_Payment_Only - Extra_Payment) * dt	INIT Private_Loan.Loan_Amount = .Private_Loan_Amount	USD
Private_Loan.Month	1		Month
Private_Loan.Month_Per_year	12		Month/ Year
Private_Loan.Monthly_Interest_Rate	(Annual_Interest_Rate/100)/Month_Per_year		1/ Month
Private_Loan.Monthly_Payment	IF Payment_Switch = 0 THEN Payment/Month ELSE User_Defined_Payment		USD/ Month
Private_Loan.Monthly_Payment_interest_only	IF Interest_Only_Switch =1 THEN Monthly_Payment ELSE 0		USD/ Month
Private_Loan.No_of_Months	Year_of_First_Extra_Payment*Month_Per_year		Month

Private_Loan.Number_of_Payments_Months	Length_of_Loan_in_Years*Month_Per_year		Month
Private_Loan.paying_back_principle_and_interest	Regular_Payment + Interest_Payment_Only + Extra_Payment		USD/ Month
Private_Loan.Payment(t)	Payment(t - dt) + (Capturing_Payment) * dt	INIT Private_Loan.Payment = 0	USD
Private_Loan.Payment_Switch	0		dmnl
Private_Loan.Regular_Payment	Monthly_Payment	OUTFLOW PRIORITY: 1	USD/ Month
Private_Loan.Repayment_Starting_Date	54		Month
Private_Loan.Total_Amount_Paid(t)	Total_Amount_Paid(t - dt) + (paying_back_principle_and_interest) * dt	INIT Private_Loan.Total_Amount_Paid = 0	USD
Private_Loan.Total_Amount_Paid_Interst_only	IF Interest_Only_Switch = 1 THEN Total_Amount_Paid ELSE 0		USD
Private_Loan.Total_Interest_Paid(t)	Total_Interest_Paid(t - dt) + (Accumulating_Interest) * dt	INIT Private_Loan.Total_Interest_Paid = 0	USD
Private_Loan.Total_Interest_Paid_interest_only	IF Interest_Only_Switch = 1 THEN Total_Interest_Paid ELSE 0		USD
Private_Loan.User_Defined_Payment	IF TIME >= Repayment_Starting_Date THEN Chosen_Payment_Amount ELSE 0		USD/ Month
Private_Loan.Year_of_First_Extra_Payment	1		Year
Total.Total_Interest_Payment	Private_Loan.Total_Interest_Paid + Federal_Loan.Total_Interest_Paid		USD
Total.Total_Monthly_Payment	Federal_Loan.Monthly_Payment + Private_Loan.Monthly_Payment		USD/ Month

Total.Total_Payment	Federal_Loan.Total_Amount_Paid +Private_Loan.Total_Amount_Paid		USD
Trial.Accumulating_Interest	Compounding_Interest		USD/ Month
Trial.Annual_Interest_Rate	5.00		1/Yea r
Trial.Capturing_Payment	IF TIME = 54 THEN - PMT(Monthly_Interest_Rate, Number_of_Payments_Months, Loan_Amount + Compounding_Interest*DT, 0) ELSE 0		USD/ Month
Trial.Chosen_Payment_Amount	0		USD/ Month
Trial.Compounding_Interest	Monthly_Interest_Rate*Loan_Amount		USD/ Month
Trial.Custom_Monthly_Payment	IF Payment_Switch =1 THEN Monthly_Payment ELSE 0		USD/ Month
Trial.Custom_Payment_Total_Amount	IF Payment_Switch =1 THEN Total_Amount_Paid ELSE 0		USD
Trial.Custom_Payment_Total_Interest	IF Payment_Switch = 1 THEN Total_Interest_Paid ELSE 0		USD
Trial.Extra_Payment	PULSE(Extra_Payment_Amount, No_of_Months, Extra_Payment_Interval_in_Months)	OUTFLOW PRIORITY: 3	USD/ Month
Trial.Extra_Payment_Amount	0		USD
Trial.Extra_Payment_Interval_in_Months	0		Month
Trial.Initial_Loan_Amount	10000		USD

Trial.Interest_Only_Switch	0		dmnl
Trial.Interest_Payment_Only	IF TIME < 54 AND Interest_Only_Switch = 1 THEN Compounding_Interest ELSE 0	OUTFLOW PRIORITY: 2	USD/ Month
Trial.Length_of_Loan_in_Years	10		Year
Trial.Loan_Amount(t)	Loan_Amount(t - dt) + (Compounding_Interest - Regular_Payment - Interest_Payment_Only - Extra_Payment) * dt	INIT Trial.Loan_Amount = Initial_Loan_Amount	USD
Trial.Month	1		Month
Trial.Month_Per_year	12		Month/ Year
Trial.Monthly_Interest_Rate	(Annual_Interest_Rate/100)/Month_Per_year		1/ Month
Trial.Monthly_Payment	IF Payment_Switch = 0 THEN Payment/Month ELSE User_Defined_Payment		USD/ Month
Trial.Monthly_Payment_interest_only	IF Interest_Only_Switch =1 THEN Monthly_Payment ELSE 0		USD/ Month
Trial.No_of_Months	Year_of_First_Extra_Payment*Month_Per_year		Month
Trial.Number_of_Payments_Months	Length_of_Loan_in_Years*Month_Per_year		Month
Trial.paying_back_principle_and_interest	Regular_Payment + Interest_Payment_Only + Extra_Payment		USD/ Month
Trial.Payment(t)	Payment(t - dt) + (Capturing_Payment) * dt	INIT Trial.Payment = 0	USD
Trial.Payment_Switch	0		dmnl

Trial.Regular_Payment	Monthly_Payment	OUTFLOW PRIORITY: 1	USD/ Mont h
Trial.Total_Amount_Paid(t)	Total_Amount_Paid(t - dt) + (paying_back_principle_and_inter est) * dt	INIT Trial.Total_Amount _Paid = 0	USD
Trial.Total_Amount_Paid_In terst_only	IF Interest_Only_Switch =1 THEN Total_Amount_Paid ELSE 0		USD
Trial.Total_Interest_Paid(t)	Total_Interest_Paid(t - dt) + (Accumulating_Interest) * dt	INIT Trial.Total_Interest_ Paid = 0	USD
Trial.Total_Interest_Paid_int erest_only	IF Interest_Only_Switch = 1 THEN Total_Interest_Paid ELSE 0		USD
Trial.User_Defined_Paymen t	IF TIME >= 54 THEN Chosen_Payment_Amount ELSE 0		USD/ Mont h
Trial.Year_of_First_Extra_Pa yment	1		Year

Run Specs	
Start Time	0
Stop Time	300
DT	1
Fractional DT	False
Save Interval	1
Sim Duration	1
Time Units	Month
Pause Interval	0
Integration Method	Euler
Keep all variable results	True
Run By	Run
Calculate loop dominance information	True

Exhaustive Search Threshold	1000
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Custom Unit	Aliases	Equation
Dimensionless	dmnl unitless	1
kilowatt hours per day		kWh/day
kilowatts	kilowatt	kW