Architecting Financial Literacy: The PACT Model

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IDE 632 – Instructional Design and Development II

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Introduction

Financial literacy instruction in secondary education has often been inconsistent and limited in its emphasis on practical application, leaving many students underprepared for real-world financial responsibilities. Increasing economic complexity and inequities in access to financial knowledge underscore the need for more authentic, learner-centered approaches. In response, this project proposes developing a standalone, scenario-based financial literacy module for 11th- and 12th-grade students, using Articulate 360 and guided by an Instructional Systems Design (ISD) model.

Instructional Context

The instructional context is a standalone, scenario-based financial literacy module designed for 11th–12th grade public high school students. Delivered digitally via Articulate 360, the module uses the PACT Instructional Design Model to reach learners from diverse socioeconomic backgrounds. Instruction emphasizes realistic financial decision-making scenarios—such as budgeting, credit use, and unexpected expenses—within a flexible or asynchronous environment.

Purpose of the ISD Model

The purpose of applying the PACT (Parameterize, Act, Consequence, Think) model is to guide the systematic development of a focused, data-driven instructional cycle that aligns learner needs with technical interactivity. By using a unified four-phase cycle, the model ensures coherence across content delivery and assessment, supporting experiential learning, asynchronous social modeling, and measurable behavioral outcomes.

Instructional Problem or Need

The model addresses the need for effective financial literacy instruction that extends beyond factual recall to develop confidence and competence in real-world decision-making. Many students lack equitable access to financial knowledge; therefore, the PACT model provides a structured, closed-loop approach. This design accounts for socioeconomic disparities by using dynamic parameterization to promote applied skills, metacognitive reflection, and informed financial choices.

Model Background

Context & Environment

Instructional systems design (ISD) models have traditionally provided structured approaches for analyzing learning needs, designing instruction, developing materials, implementing learning experiences, and evaluating outcomes within defined educational systems (Branch, 2009). The specific context for the proposed model is secondary financial literacy instruction for 11th- and 12th-grade students in a public high school setting. This context operates within a broader educational suprasystem that includes district curriculum standards, state graduation requirements, technology infrastructure policies, and accountability measures. These broader structures influence instructional priorities, resource allocation, and assessment expectations.

Within this suprasystem, several interacting subsystems shape implementation. These include the individual high school, the classroom structure, the learning management system (LMS), the instructional technology platform (Articulate 360), and the learners themselves. Teachers, administrators, and guidance counselors serve as support agents within the subsystem, ensuring alignment with curricular goals and supporting student progress. Within this system, instruction must account for diverse learner backgrounds, varying levels of prior financial knowledge, and uneven access to financial resources, all of which influence how learners engage with and apply financial concepts. Financial literacy instruction in this context has often been fragmented and inconsistently implemented, resulting in limited opportunities for students to practice authentic financial decision-making (OECD, 2020).

The instructional environment is a digital learning ecosystem supported by school-issued or personal devices and facilitated through interactive instructional technology. The instructional product developed through this model is a standalone, self-paced, scenario-based module created in Articulate 360 and delivered either during scheduled class time or asynchronously via a learning management system. The anticipated completion time is approximately 60–90 minutes, allowing flexibility for implementation in a single session or across multiple shorter sessions. This environment enables branching scenarios, embedded feedback, learner data collection, and performance-based assessment, while also imposing constraints related to accessibility, device availability, time limitations, and institutional reporting requirements.

Because the instruction is self-paced rather than instructor-led, the PACT model compensates for the absence of real-time instructor mediation through dynamic parameterization and asynchronous social modeling. This ensures that embedded scaffolding and motivational design are tailored to individual learner data rather than generic feedback. The absence of real-time instructor mediation requires increased emphasis on clear navigation, embedded scaffolding, automated and adaptive feedback, cognitive load management, and motivational design. Evaluation processes must rely more heavily on embedded analytics and xAPI data collection, which facilitate the metacognitive reflection phase, learner performance data, and structured reflection rather than instructor observation. These conditions require an instructional design process that intentionally integrates learner autonomy, contextual sensitivity, and iterative data-informed revision.

Existing ISD models offer limited guidance on systematically integrating authentic decision-making, learner context, self-paced delivery considerations, and digital analytics into a unified framework. Financial decision-making is strongly shaped by socioeconomic context and emotional factors, yet these elements are rarely addressed explicitly in traditional design models (OECD, 2020). As a result, there is a need for the PACT (Parameterize, Act, Consequence, Think) Model, a context-specific framework intentionally aligned with both the instructional system and the digital, self-directed environment in which learning occurs.

This project addresses this need by proposing an instructional systems design model tailored to scenario-based financial literacy instruction in secondary education. Grounded in foundational ISD principles (Branch, 2009) while extending them to emphasize authentic decision-making, equity, learner autonomy, and iterative use of learner data. The model is designed to function effectively within the identified suprasystem, subsystems, and self-paced digital environment and to guide the development of scalable, responsive, and meaningful financial literacy instruction.

Key Personnel & Roles

Role	Description of the Role
Learner (Students)	Engage in self-directed, scenario-based decision-making activities. Apply personal context to financial choices, reflect on outcomes, and generate performance data that informs continuous improvement of the instructional system.
Classroom Teacher (Facilitator)	Introduces the module to students, monitors student progress, and provides supplemental clarification when needed. The teacher will help students reinforce connections between module content and broader classroom learning objectives.
Instructional Designer & Developer	The ID will create the overall design of the module by conducting a front-end analysis, defining measurable learning objectives, structuring scenario-based instruction, and ensuring alignment with instructional systems design principles. The developer will build the module within Articulate 360, programming branching scenarios, embedded feedback, navigation, and accessibility features. Also, make sure technical compatibility with LMS and optimizes user experience in a self-paced environment.
Subject Matter Experts	Provide accurate and current financial content. Two financial SMEs will make sure scenarios reflect realistic financial decision-making contexts and validate the authenticity and practical relevance of learning activities.
District Curriculum Specialist	Oversee alignment with state standards and graduation requirements at the district level. Review scalability and ensure consistency across schools if the model is adopted system wide. Serves as the final approval authority for district-wide adoption.
School Administrator (Principal or Curriculum Lead)	Make sure there is proper alignment with district standards, graduation requirements, and institutional policies. In addition to this they will support scheduling, resource allocation, and accountability reporting. Serves as the final approval authority for school-level implementation.
Guidance Counselor	Reinforces real-world application of financial literacy concepts in postsecondary planning and career readiness.

Data and Evaluation Specialist	Designs performance metrics and analyzes embedded learner analytics to assess instructional effectiveness. Supports iterative revision of the module using learner data, completion rates, and performance outcomes.
Technology Coordinator/ IT Support	Maintain device access, LMS functionality, and technical infrastructure. Troubleshoots issues to ensure uninterrupted learner access and compliance with district technology policies.

Intended Audience

There are two primary categories that comprise the intended audience for this instructional systems design model: (1) instructional designers and educational developers, who serve as the primary users of the model; and (2) classroom educators and district curriculum specialists, who may use the model to evaluate, adapt, or implement scenario-based financial literacy instruction. While the model is designed for these professional users, it ultimately supports the development of instruction for a specific learner group, identified separately as the instructional product's target population.

The primary audience consists of instructional designers (IDs) and educational developers who design and develop digital learning experiences. These individuals will use the model as a framework for structuring scenario-based instruction, sequencing content, and embedding scaffolded decision-making, feedback, and learner supports within a self-paced environment (Branch, 2009). The model is intended to guide design decisions while still allowing flexibility to adapt instruction to different institutional contexts, learner needs, and delivery formats.

The secondary audience includes classroom educators and district curriculum specialists who are responsible for facilitating, adapting, or evaluating instruction developed using this model. These individuals typically ensure alignment with district curriculum standards and state graduation requirements and may use the model to determine whether a given instructional product meets those expectations. Educators engaging with the model are expected to demonstrate proficiency with learning management systems and digital instructional tools, as well as the ability to interpret learner performance data generated through embedded analytics to inform instructional refinement.

The target population of the instructional product, rather than the model itself, consists of 11th- and 12th-grade students enrolled in public high schools. These learners, typically between the ages of 16 and 18, are approaching significant postsecondary transitions, including college enrollment, workforce entry, military service, or technical training. At this stage, students are increasingly expected to make independent financial decisions related to employment income, budgeting, credit use, student loans, and long-term financial planning.

However, prior exposure to financial literacy concepts varies significantly across this population. Some students may have experience managing part-time employment income or contributing to household expenses, while others may have had limited structured engagement with financial decision-making. The instruction must account for differences in students' prior financial

knowledge and access to resources, rather than assuming all learners share the same background (OECD, 2020).

Students in this environment are expected to access and complete the module through a learning management system using school-issued or personal devices. Therefore, learners must demonstrate basic digital literacy skills, including navigating online platforms, interacting with multimedia content, and responding to embedded prompts. Because the instruction is self-paced and may be delivered without real-time instructor facilitation, students must also rely on self-regulation, task persistence, and independent problem-solving.

The instructional model accounts for differences in motivation, numeracy, confidence, and cognitive readiness by incorporating scaffolded decision pathways, embedded feedback, and clear navigation structures. The model assumes learners possess foundational literacy and numeracy skills sufficient to interpret contextual financial information, percentages, and simple calculations. At the same time, it recognizes that financial decision-making is influenced by socioeconomic context, personal experience, and emotional factors. As such, the design intentionally integrates authentic scenarios that reflect diverse learner realities rather than abstract or decontextualized financial concepts.

The PACT Model

Analysis and Design of the Model

Management of Instruction

As previously stated, this ISD model seeks to guide the instructional designers and developers in creating a standalone, scenario-based financial literacy module. It serves as a framework for aligning learner needs with instructional strategies, ensuring that 11th- and 12th-grade students are prepared for real-world financial responsibilities.

Within the spectrum of learning theories, this model aligns with Constructivism and Situated Learning. By utilizing realistic financial decision-making scenarios, the model activates learning by requiring users to apply prior knowledge and intuition to new, complex situations. From this, the learner will retrieve foundational numeracy and literacy skills and apply them to the specific financial challenges presented within the Articulate 360 environment.

The Financial Literacy Model consolidates the main components of financial decision-making (budgeting, credit, saving) into a visual and interactive representation. The learner navigates the model through branching scenarios that enable safe failure and retry, improving their chances of success in real-world applications without the risks of actual financial loss.

To lay out an effective blueprint for the management of instruction for this model, we examine the learning architecture required for a self-paced digital environment:

Method of Delivery	The delivery consists of a digital, standalone module created in Articulate 360 and hosted on a Learning Management System (LMS). The training encompasses a 60–90 minute session that can be completed in a single sitting or divided into shorter sessions. It utilizes interactive storytelling, embedded analytics, and performance-based assessment rather than passive lectures.
Method of Instruction	The instruction utilizes a Directive Learning Architecture regarding navigation and core concepts, transitioning to a Guided Discovery approach for the scenarios. Unlike the "Receptive" architecture used for advanced learners, this model accounts for learners with varying levels of prior financial knowledge and socioeconomic backgrounds. The absence of real-time instructor mediation requires this architecture to rely heavily on clear navigation, embedded scaffolding, and automated adaptive feedback.

Method of Grouping for Learning	The method of grouping adheres to an Individualized approach. Given the context of "self-directed, scenario-based decision-making," the instruction is designed for the individual learner to interact directly with the content. This allows the student to reflect on personal context and generate performance data that informs their specific learning path.

Model Logic & Rationale

The PACT model logic follows a non-linear, adaptive progression designed to transition learners from surface-level knowledge to durable behavior change. The rationale for the scenario-based financial literacy framework is as follows:

1. **Parametrize (Contextual Analysis):** The learner enters a personalized scenario based on a pre-scenario diagnostic that determines the difficulty and scaffolding level. This ensures the simulation aligns with the learner's prior knowledge and specific life path (e.g., workforce, college, or military).
2. **Act (Decision Point):** The model presents 3-way branching forks (save, spend, invest) requiring active calculation. Peer rationale toggles and real-time remediation manage cognitive load while maintaining a "safe failure" environment.
3. **Consequence (Output & Feedback:** The learner views automated feedback tied to specific financial mechanisms (e.g., APR or liquidity buffers). The model provides 1-month and 6-month projections to demonstrate long-term causal relationships.
4. **Think (Metacognitive Reflection):** The learner is prompted with a non-skippable reflection to identify the financial patterns followed or broken. This data then feeds back into the next iteration to continuously refine the instructional parameters.

This logic ensures that the instruction extends beyond factual recall to establish a community of practice, developing the metacognitive skills necessary for lifelong financial competence.

Needs Assessment: Front-End Analysis

To understand the "gap" in financial proficiency that justifies this model, a comprehensive front-end analysis was conducted to evaluate the current state of financial education relative to the competencies required of high school graduates. The analysis identified that financial literacy instruction in secondary education has historically been fragmented and inconsistent, often limited in its emphasis on practical application. This lack of cohesive instruction leaves many students underprepared for real-world financial responsibilities.

While the instructional designer is responsible for creating the module, the front-end analysis ensures the content addresses the root causes of financial illiteracy, such as a lack of authentic practice and equitable access, rather than merely treating the symptoms. The following factors constitute the analysis for this model:

Gap Analysis The primary discrepancy identified is the gap between the "Current" state of instruction and the "Required" state of learner competence.

- **Current State:** Instruction is often decontextualized, focusing heavily on factual recall rather than applied skills. Implementation is inconsistent across districts, resulting in limited opportunities for students to practice authentic financial decision-making.
- **Required State:** The desired outcome is for students to possess not just knowledge, but the confidence and competence to navigate real-world financial decision-making. Learners require an approach that prepares them for immediate postsecondary transitions, including workforce entry, military service, or college enrollment.

Extant Data Analysis A review of existing educational and economic data reveals that increasing economic complexity has outpaced current instructional methods.

- **Economic Complexity:** The financial landscape has become increasingly intricate, requiring higher levels of sophistication to manage student loans, credit, and employment income.
- **Inequity of Access:** Data indicates that students lack equitable access to financial knowledge, often depending on their specific school system or family background.
- **Socioeconomic Influence:** Research, including data from the OECD (2020), highlights that financial decision-making is strongly shaped by socioeconomic context and emotional factors, elements rarely addressed in traditional, linear instructional models.

Learner Context Analysis The analysis confirmed that the "one-size-fits-all" approach is insufficient. The design must account for diverse socioeconomic backgrounds and varying levels of financial stress rather than assuming a homogeneous learner profile.

- **Prior Knowledge:** There is significant variance in prior financial exposure; some students contribute to household expenses or hold part-time jobs, while others have limited engagement with money management.
- **Digital Readiness:** Because the instruction is delivered via a self-paced digital module (Articulate 360) without real-time instructor mediation, the analysis highlights a need for learners to rely on self-regulation and task persistence.
- **Cognitive and Emotional Factors:** The model must account for differences in motivation, numeracy, and confidence. It must also recognize that for many learners, financial decisions are not purely logical but are influenced by emotional and personal experiences.

Task & Setting Analysis The environment for this instruction is a digital learning ecosystem, accessed via school-issued or personal devices.

- **Instructional Constraints:** The analysis identified specific constraints, including accessibility requirements, strict time limits (60–90 minutes), and the need for the module to function both asynchronously and in a classroom setting.
- **Task Requirements:** The core tasks require students to navigate realistic scenarios—such as budgeting, credit use, and handling unexpected expenses—and apply immediate feedback to correct their financial trajectory.

Stage 1: Plan

During the Planning stage, the Instructional Designer and Subject Matter Experts (SMEs) collaborate to define the operational scope and narrative structure of the financial scenarios. At this point, the initial needs assessment has confirmed the necessity for the training, and the team moves to blueprint the instructional experience.

The primary focus in this stage is to operationalize the "suprasystem" requirements, such as district curriculum standards and state graduation mandates, into a cohesive digital learning experience. The Instructional Designer works to align these rigid standards with the flexible, scenario-based nature of the Articulate 360 platform. Simultaneously, Financial SMEs are consulted to ensure that the planned scenarios (e.g., managing a first paycheck or understanding credit card interest) reflect realistic financial constraints and outcomes.

The planning phase also establishes the technical and logistical boundaries of the project, ensuring the module fits within the 60–90-minute self-paced timeframe and functions correctly across school-issued and personal devices.

Instructional Goal	Learning Objectives	Methods and Media Required
Preparing Instructional Strategy	- Define Measurable Objectives: Create specific performance indicators for financial decision-making (e.g., "Student will correctly allocate 50% of income to needs"). - Structure Scenario Pathways: Map the initial branching logic for decision trees, ensuring choices lead to logical, feedback-rich consequences	- Front-End Analysis Data: Utilized to target specific learner gaps identified in the needs assessment. - District Curriculum Standards: Referenced to ensure compliance with the educational suprasystem. - SME Consultation: Interviews with financial experts to validate the realism of the proposed decision pathways.

	rather than simple "correct/incorrect" endpoints. -Align Content: Ensure all scenario outcomes map directly to district curriculum standards and state graduation requirements.	
Establish Scope	- Determine Specific Scenarios: Finalize the list of financial topics to be covered, specifically: employment income, budgeting, credit use, student loans, and unexpected expenses. - Set Technical Constraints: Define parameters for the Articulate 360 build, including accessibility features, mobile responsiveness for personal devices, and a total run-time of 60–90 minutes.	- Project Scope Documentation: A formal agreement outlining deliverables and timelines. - Technical Specifications: Hardware and software requirements for the Learning Management System (LMS) and school-issued devices to ensure compatibility.

Stage 2: Analyze

This stage focuses on analyzing the specific financial behaviors and decision-making processes the students must demonstrate to achieve competency. Unlike a linear process analysis used in traditional instruction, this stage involves mapping the complex decision trees required for the module's branching scenarios.

The Instructional Designer leads this phase by conducting a task analysis that breaks down broad financial concepts (like "budgeting") into discrete, actionable decision points (e.g., "choosing between paying a utility bill or a credit card minimum"). Simultaneously, the analysis must account for the diverse learner backgrounds identified in the front-end analysis, ensuring that the scenarios reflect the socioeconomic realities and emotional factors that influence financial choices. Subject Matter Experts (SMEs) are critical during this stage to validate that the consequences mapped in the decision trees are realistic and practically relevant.

Instructional Goal	Learning Objectives	Methods and Media Required
Map Decision Pathways/Consequences	- Analyze Consequence Logic: Learners will be able to identify the immediate and delayed consequences of financial decisions (e.g., the compounding effect of minimum credit card payments vs. full balance payments). - Map "Ideal" vs. "Real" Paths: Learners will navigate scenarios that distinguish between theoretically "perfect" financial choices and common emotional spending pitfalls. - Define Scenario Branches: Learners will experience distinct outcomes based on their choices, reinforcing adaptive decision-making rather than rote memorization.	- Branching Logic Flowcharts: Use of visual diagrams (e.g., Visio, Lucidchart) to map out scenario structures, decision nodes, and feedback loops prior to development. - SME Validation Protocols: Collaborative review sessions where two financial SMEs verify the authenticity of the decision pathways and ensure the financial outcomes are accurate. - Cognitive Task Analysis: Interviewing experts to uncover the mental process behind financial decisions to inform the scenario scripts.
Analyze Learner Context & Entry Skills	- Assess Prior Knowledge: Learners will engage with content tailored to varying levels of financial exposure, ensuring those with part-time work experience and those without are both challenged. - Address Socioeconomic Diversity: Learners will encounter scenarios that reflect diverse financial realities/constraints rather than	- Learner Personas: Developing profiles representing the diverse student body (e.g., "Student planning for military," "Student entering workforce") to guide scenario creation. - Entry Skills Assessment: Data review from the front-end analysis to determine the baseline numeracy and reading level required for the scenarios.

	a "one-size-fits-all" affluent context. - Digital Literacy Confirmation: Learners must demonstrate the ability to navigate the Articulate 360 interface and interpret digital financial dashboards.	
Analyze Technical & Environmental Constraints	- Verify Accessibility: Instruction must function seamlessly on both school-issued devices and personal smartphones to ensure equitable access. - Time Management: The module structure must allow learners to complete the "Plan, Decision, Feedback" loop within the 60–90-minute self-paced allocation.	- Technical Audit: Review of the school's Learning Management System (LMS) capabilities and bandwidth constraints. - Accessibility Checklist: Review of Section 508/WCAG compliance requirements for the Articulate 360 build (e.g., screen reader compatibility).

Stage 3: Design

The "Design" stage translates the data gathered during the Analysis phase into a concrete blueprint for the module. This is where the instructional design team innovates by creating authentic, relevant stories that resonate with 16–18-year-olds.

In this stage, the Instructional Designer and Subject Matter Experts (SMEs) collaborate to script the branching scenarios. The focus shifts from what to teach (defined in Analysis) to how to teach it effectively in a self-paced digital environment. This involves selecting visual assets that reflect the diverse socioeconomic backgrounds of the student body and drafting feedback loops that allow students to experience "safe failure"—learning from financial mistakes within the simulation without real-world consequences.

Instructional Goals	Learning Objectives	Methods and Media Required
Design Authentic Scenarios	- Create Relatable Characters: Design character personas and situations that mirror the specific postsecondary transitions of the audience (e.g., entering the workforce, military service, or college). - Draft Decision Scripts: Write realistic dialogue and decision prompts that force learners to weigh financial trade-offs (e.g., "Buy the new phone now" vs. "Save for a car deposit."	- Storyboards: Visualizing the sequence of screens, decision points, and branching paths before programming begins. - SME Review of Scripts: Financial experts review the dialogue and scenarios to ensure the financial context is accurate and the "consequences" are realistic.
Design Feedback & Navigation	- Structure Embedded Feedback: Draft the immediate feedback text that appears after a learner makes a choice, explaining *why* a financial decision led to a specific outcome. - Design Navigation for Autonomy: Create a navigation structure that supports self-paced exploration, allowing learners to review information or retry scenarios without instructor intervention.	- User Interface (UI) Mockups: Designing the layout of the digital "dashboard" (e.g., bank account view, budget tracker) that students will interact with in Articulate 360. - Graphic Asset Selection: Choosing images, avatars, and icons that are inclusive and representative of the diverse learner population.

Stage 4: Develop

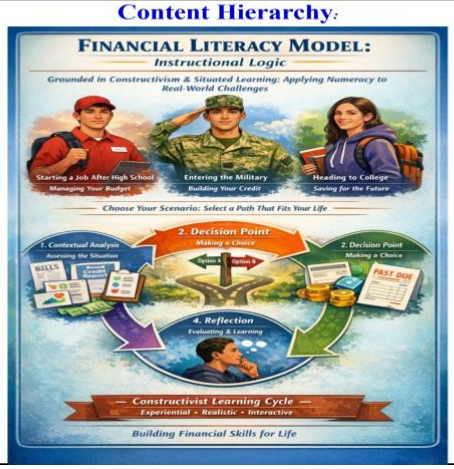
In the develop stage of this process, the project transitions from "concept design" to action, generating the actual digital assets and programming the training model. For instance, during this phase of planning, our team took the storyboards and scripts developed from Stage 3 and built them within Articulate 360.

In the following storyboards, customers are provided with a breakdown of how the team programmed complex branching logic, where the learner's decisions trigger specific financial outcomes. Additionally, the storyboard layout intentionally guides reviewers through the application of the four-step literacy model and highlights the key issues identified during the front-end analysis that informed our asset development strategy. The module includes comprehensive graphic assets such as avatars and icons that represent diverse socioeconomic backgrounds of 11th and 12th grade learners, and each student selects a character whose circumstances alight with their self-identified financial situation. Each scenario in the module then adapts to the learner's chosen character to create a personalized and contextually relevant learning experience.

Not included in the storyboards, but the development team will incorporate an interactive dashboard that updates in real time in response to student decisions, such as changes in bank balance or credit score, to reinforce the consequences of financial choices. In addition, the development team uses stationary or digital mapping tools to document every step of the redesigned branching pathways to ensure that learners never encounter dead ends in their progression. These integrated components provide a comprehensive framework that guides developers through stage 4 of the project's implementation.

UNIT Title: Financial Literacy
Designer: GGBW
Purpose: Course Orientation
Seat-time: 60-90 Minutes

Content Hierarchy:



UNIT title: Scenario 1A
EVENT Title: High School Graduate Joining the Workforce (Budgeting) **Estimated Time for EVENT:** 30 Minutes

Persona: Recent high school graduate entering the workforce to support their family.

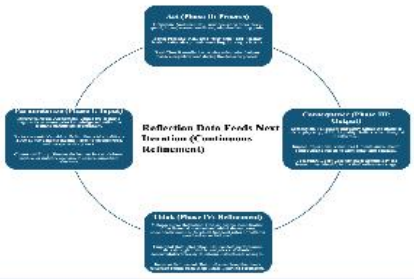
Challenge: Managing a monthly budget on a $900-$1400 income.

1. Contextual Analysis:
Thomas just graduated and started working full-time at a local auto shop. He earns $900-$1400/month and contributes $400 to household expenses. He also has transportation costs, a phone bill, and wants to save for emergencies.

2. Decision Point:
Thomas must decide how to allocate his remaining $1,000.

Should he:
- Save $300 and spend the rest?
- Pay off a small personal loan early?
- Invest in a used car to reduce Uber costs?

THE PACT INSTRUCTIONAL DESIGN MODEL: SCENARIO-BASED FINANCIAL LITERACY UNIFIED CYCLE FOR DURABLE FINANCIAL HABITS



3. Consequences and Feedback:
Automated feedback will be provided for each decision that they interact with the scenario. For instance, if Thomas chooses to save $300 and pay off his loan. He realizes he's short on transportation funds and has to borrow again. He sees how short-term decisions affect long-term stability.

4. Reflection:
Thomas reflects on the importance of balancing debt repayment with essential expenses. He adjusts his budget to include a transportation fund and sets a goal to build a $1,000 emergency savings.

UNIT title: Scenario 1B
EVENT Title: High School Graduate Joining the Workforce (Credit) **Estimated Time for EVENT:** 30 Minutes

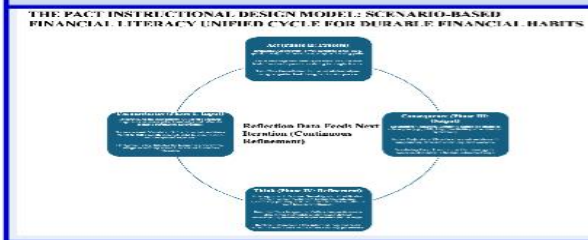
Persona: Recent high school graduate entering the workforce to support their family.

Challenge: Establishing credit without falling into debt

1. Contextual Analysis:
Thomas is offered a store credit card while buying work boots. He has no credit history and is unsure how credit works.

2. Decision Point:
Should Thomas:

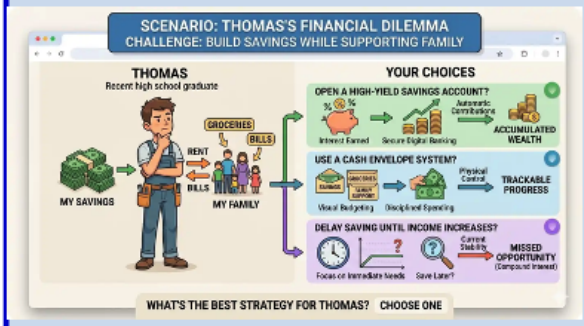
- Accept the card and use it for small purchases?
- Decline and wait until he understands credit better?
- Ask a family member to co-sign a traditional credit card?



3. Consequences and Feedback:
Automated feedback will be provided for each decision that they interact with the scenario. For instance, if he accepts the store card and uses it responsibly but misses one payment due to a banking error. His credit score drops slightly, and he learns about payment history's impact.

4. Reflection:
Thomas sets up auto-pay and tracks his credit score monthly. He realizes credit is a tool that requires discipline and planning.

UNIT title: Scenario 1C
EVENT Title: High School Graduate Joining the Workforce (Saving) **Estimated Time for EVENT:** 30 Minutes



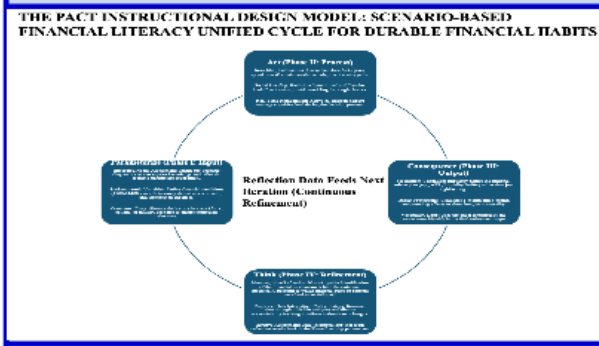
Persona: Recent high school graduate entering the workforce to support their family.

Challenge: Building savings while supporting family

1. Contextual Analysis:
Thomas wants to save for a car and eventually move out. He's contributing to household bills and has limited disposable income.

2. Decision Point:
Should he:

- Open a high-yield savings account?
- Use a cash envelope system?
- Delay saving until his income increases?



3. Consequences and Feedback:
Automated feedback will be provided for each decision that they interact with the scenario. For instance, if Thomas opens a savings account and automates $50/month. After six months, he has $300 saved and feels empowered.

4. Reflection:
He reflects on how small, consistent actions build momentum. He sets a goal to save $1,000 in a year.

UNIT title: Scenario 2A
EVENT Title: Graduate Entering Military Service (Credit) **Estimated Time for EVENT:** 30 Minutes

Persona: Recent high school graduate entering military service

Challenge: Establishing credit while managing deployment-related expenses.

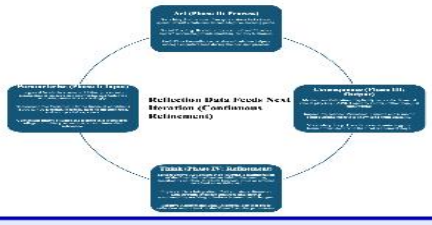
1. Contextual Analysis:

Alyssa has just enlisted in the Army. She receives a steady income and is offered a military credit card. She has no credit history and wants to build it responsibly.

2. Decision Point:

Alyssa must decide how to use her new credit card. Should she:
- Use it for small monthly purchases and pay it off?
- Buy a laptop for online courses?
- Avoid using it altogether?

THE PACT INSTRUCTIONAL DESIGN MODEL: SCENARIO-BASED FINANCIAL LITERACY UNIFIED CYCLE FOR DURABLE FINANCIAL HABITS



3. Consequences and Feedback:

Automated feedback will be provided for each decision that they interact with the scenario. For instance, if she buys the laptop and pays it off over six months. Her credit score improves, but she notices interest charges accumulating. She learns how utilization and payment history affect her score.

4. Reflection:
Alyssa reflects on the value of using credit strategically. She sets up automatic payments and keeps her utilization below 30%, aiming for long-term credit health.

UNIT title: Scenario 2B
EVENT Title: Graduate Entering Military Service (Credit) **Estimated Time for EVENT:** 30 Minutes

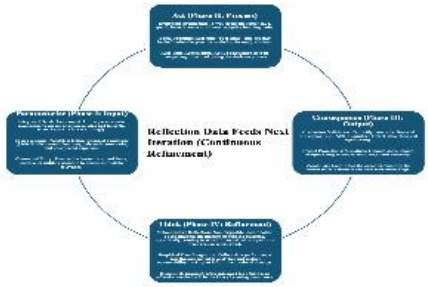
Persona: Recent high school graduate entering military service

Challenge: Avoiding high-interest traps

1. Contextual Analysis:
Alyssa notices several payday loan shops near her base offering "military-friendly" loans. She needs $300 for an unexpected uniform replacement.

2. Decision Point:
Should she:
- Take the payday loan?
- Use her credit card and pay it off next month?
- Ask her base's financial readiness office for assistance?

THE PACT INSTRUCTIONAL DESIGN MODEL: SCENARIO-BASED FINANCIAL LITERACY UNIFIED CYCLE FOR DURABLE FINANCIAL HABITS



3. Consequences and Feedback:
Automated feedback will be provided for each decision that they interact with the scenario. For instance, if she uses her credit card and pays it off quickly. She later learns payday loans near bases often target young service members with predatory terms.

4. Reflection:
Alyssa recognizes the importance of understanding credit alternatives and using safe, reputable financial tools.

UNIT title: Scenario 2C
EVENT Title: Graduate Entering Military Service (Savings) **Estimated Time for EVENT:** 30 Minutes

Persona: Recent high school graduate entering military service

Challenge: Planning for relocation expenses

1. Contextual Analysis:
Alyssa receives notice of a PCS move in six months. While the military covers some costs, she'll need money for deposits, travel, and temporary housing.

2. Decision Point:
Should she:
Start a PCS savings fund?
Rely on her credit card for moving expenses?
Sell belongings to reduce moving costs?

THE PACT INSTRUCTIONAL DESIGN MODEL: SCENARIO-BASED FINANCIAL LITERACY UNIFIED CYCLE FOR DURABLE FINANCIAL HABITS

3. Consequences and Feedback:
Automated feedback will be provided for each decision that they interact with the scenario. For instance, if She starts a PCS fund and saves $150/month. When the move happens, she avoids debt and feels prepared.

4. Reflection:
Alyssa learns that planned savings reduce stress during major life transitions.

UNIT title: Scenario 3A
EVENT Title: College Student (Saving for the Future) **Estimated Time for EVENT:** 30 Minutes

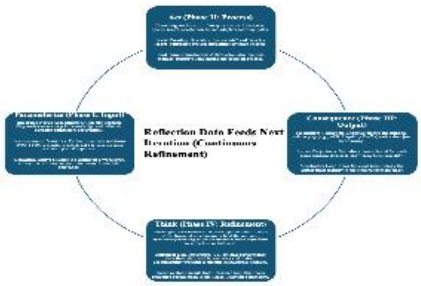
Persona: College-Bound student preparing for financial independence.

Challenge: Covering living expenses when dorms close

1. Contextual Analysis:
Carlos learns that his dorm closes during the summer. He'll need to pay for off-campus housing if he stays for summer classes.

2. Decision Point:
Should he:
Save throughout the semester?
Move home and commute?
Take out a small personal loan?

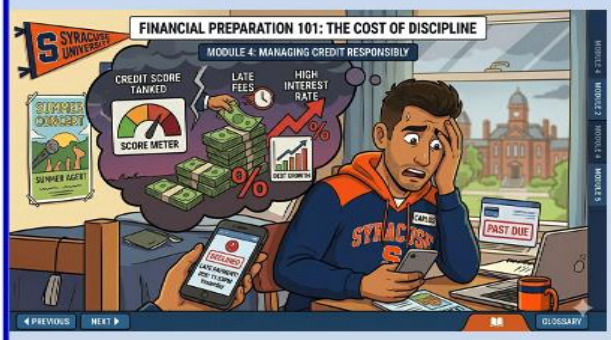
THE PACT INSTRUCTIONAL DESIGN MODEL: SCENARIO BASED FINANCIAL LITERACY UNIFIED CYCLE FOR DURABLE FINANCIAL HABITS



3. Consequences and Feedback:
Carlos saves $75/month and secures a shared summer sublease. He avoids borrowing and maintains independence.

4. Reflection:
He realizes that anticipating future needs helps him avoid last-minute financial stress.

UNIT title: Scenario 3B
EVENT Title: College Student (Credit) **Estimated Time for EVENT:** 30 Minutes



Persona: College-Bound student preparing for financial independence.

Challenge: Recovering from a financial mistake

1. Contextual Analysis:
Carlos forgets to pay his credit card bill during finals week. He receives a late fee and a notice that his credit score dropped.

2. Decision Point:
Should he:
- Pay the balance immediately and call the issuer to request a fee waiver?
- Ignore it and hope it resolves later?
- Close the card to avoid future mistakes?

THE PACT INSTRUCTIONAL DESIGN MODEL: SCENARIO-BASED FINANCIAL LITERACY UNIFIED CYCLE FOR DURABLE FINANCIAL HABITS

3. Consequences and Feedback:
Automated feedback will be provided for each decision that they interact with the scenario. For instance, if He pays immediately and calls the issuer. Because it's his first missed payment, they waive the fee and do not report it to credit bureaus.

4. Reflection:
Carlos learns the importance of auto-pay and calendar reminders to protect his financial reputation.

UNIT title: Scenario 3C
EVENT Title: College Student (Saving for the Future) **Estimated Time for EVENT:** 30 Minutes

Persona: College-Bound student preparing for financial independence.

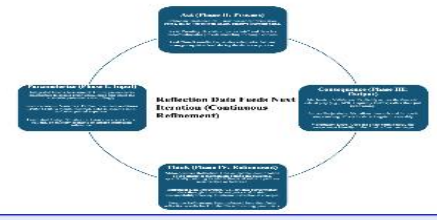
Challenge: Creating a savings plan while managing student expenses.

1. Contextual Analysis:
Carlos is starting college and has a part-time job. He receives financial aid but still needs to cover books, food, and transportation. He wants to save for study abroad next year.

2. Decision Point:

Carlos must decide how much to save monthly. Should he:
- Save $100/month and reduce eating out?
- Delay saving until next semester?
- Take on extra hours at work?

THE PACT INSTRUCTIONAL DESIGN MODEL: SCENARIO-BASED FINANCIAL LITERACY UNIFIED CYCLE FOR DURABLE FINANCIAL HABITS



3. Consequences and Feedback:
Carlos saves $100/month and cuts discretionary spending. He feels more in control but struggles with time management. He sees his savings grow and feels motivated.

4. Reflection:
Carlos reflects on the trade-offs between short-term comfort and long-term goals. He creates a savings tracker and sets milestones for his study abroad fund.

Instructional Goals	Learning Objectives	Methods and Media Required
Plan the changes to the process	-Learners will transfer agreed upon solutions from the redesign process -Learners will ensure these actions are obtainable - Learners will identify benchmarks and follow up actions as needed	-Technology/software required to redesign the business process -Stationary to document each step in the redesigned process

Stage 5: Implementation

The implementation phase puts the drafted module into practice through a structured communication and diffusion plan that ensures all key participants understand its purpose and functionality. This stage expands the module's reach by helping students, teachers, and guidance counselors recognize the value and integrate it effectively into their daily routines. The module operates within a digital learning environment in which the learning management system hosts the content, and students access it through school or personal devices.

The implementation team supports this process by developing teacher and facilitator guides that function as laminated job aids or quick digital start resources to help educators monitor student progress and provide clarification when needed. The team also uses emails and scheduled meetings to introduce the module to administrators, counselors, and other staff members who help reinforce financial literacy concepts during post-secondary planning. In addition, the team creates a brief onboarding video within the learning management system to help students navigate the self-paced environment and begin the module with confidence. Together, these coordinated efforts ensure that the module launches smoothly and reaches its intended audience with clarity and consistency.

Instructional Goals	Learning Objectives	Methods and Media Required
Implement Actions to the Process	-Learners will document the new process -Learners will ensure impacted staff understand the change -Follow up to ensure the process is implemented and sustained	-Laminated job aid that can be used as a future reference guide to assist with conducting a Financial Literacy Model event -Email and team meeting for staff impacted by the redesigned process -Follow up emails with affected staff to examine results

Stage 6: Evaluation

The evaluation stage serves as a central output of the instructional design model because it determines whether the instructional event achieved its intended goals and whether learners developed the targeted competencies. Evaluation functions as both a measurement system and a continuous improvement mechanism, ensuring that the instructional solution remains aligned with the needs identified in the initial analysis. The process incorporates 2 complementary approaches, formative evaluation and summative evaluation. Formative evaluation supports ongoing refinement during design and development, while summative evaluation measures the final effectiveness of the completed module. Together, these approaches create a comprehensive framework that uses expert judgment, learner performance data, and embedded analytics to assess the quality and impact of the instructional product.

Formative Evaluation

Formative evaluation occurs throughout the design and development process and continues as learners engage with the instructional materials. During development the primary formative method is expert review subject matter experts examine course content assessment and job aids at a predetermined benchmark to verify accuracy relevance and alignment with the instructional goals their feedback is categorized into immediate revisions future data points or suggestions that fall outside the project scope this structured feedback loop ensures that the design team can correct critical errors planned for additional data collection and maintain focus on the project's objectives.

Formative evaluation also extends to the learner experience once prototype materials become available. Early versions of branching scenarios, dashboards, and assessments allow the design team to observe how learners interact with the content. Embedded analytics track learner choices, time on task, and navigation patterns. If a large percentage of learners consistently choose a path to failure or misinterpret a financial concept, the design team can adjust scaffolding, revise feedback messages, or refine the scenario's logic. Reflection prompts placed after major decision points provide qualitative insight into learner reasoning, which is essential for evaluating attitude outcomes and identifying misconceptions. These formative data sources support flexible refinement and ensure that the module evolves in response to authentic learner behaviors.

Summative Evaluation

Summative Evaluation occurs after the module is fully implemented and focuses on determining whether the instructional problem identified in the needs assessment has been resolved. This stage evaluates payoff, learning, and attitude outcomes, implementation fidelity, and total cost. The evaluation framework draws on Kirkpatrick’s four-level model, which assesses learner reactions, knowledge gains, behavioral changes, and long-term results.

For learners, summative evaluation includes pre and post-tests that measure changes in financial knowledge and the ability to apply concepts. The performance dashboard, when supported by the

learning platform, provides a quantitative record of learner progress and highlights patterns in decision-making. The capstone case study serves as the culminating assessment, requiring learners to analyze their financial problem, identify core issues, and propose a solution. Automated feedback reinforces learning and provides a standardized measure or performance.

During summative evaluation, the data and evaluation specialists analyze completion rates, performance outcomes, and embedded analytics to determine overall effectiveness. These findings inform future revisions and ensure that the instructional product continues to meet learner needs.

Instructional Goals	**Learning Objectives**	**Methods and Media Required**
Evaluation (Overall Stage)	Ensure the instructional module effectively addresses the problems identified in the need assessment and supports continuous improvement.	Learning management system (LMS) analytics, performance dashboards, pre / post assessments, evaluation rubrics, data tracking tools.
Formative evaluation (during design and development)	Improve instructional materials while they are being created to ensure accuracy, relevance, and alignment with goals.	SME review protocols, benchmark review cycles, validation documents, design checklist, Articulate 360 prototype builds, feedback categorization tools.
Formative evaluation (for learners during early use)	Identify learner misconceptions, navigation issues, or ineffective scaffolding before full implementation.	Embedded analytics, scenario-path reviews/ tracking, reflection nodes, early released prototype modules, learner behavior heatmaps, LMS reporting tools.
Summative Evaluation (During design and development)	Determine whether the final instructional product solves the instructional problem and meets design specifications.	Kirkpatrick Level 1–4 evaluation framework, cost analysis tools, implementation fidelity checklists, SME sign-off documentation.
Summative Evaluation (for learners after course completion)	Measure learner mastery, performance outcomes, and ability to apply financial literacy skills to real-world scenarios.	Pre- and post-tests, digital performance dashboards, automated feedback systems, capstone case study assessments, LMS-based scoring tools.

Data and Analytics Integration	Use embedded data to drive improvement with each iteration and ensure the module remains effective over time.	LMS analytics suite, data visualization tools, performance metric frameworks, evaluation specialist oversight, dashboard reporting.

Assumptions

The development of the financial literacy instructional plan rests on several credible implied assumptions that shape both its design and expected outcomes.

- The plan assumes that the school's digital learning ecosystem, including the learning management system, student devices, and available bandwidth, can reliably support interactive media and real-time analytics.
- It also presumes that eleventh and twelfth grade learners possess sufficient self-regulation and motivation to remain engaged in a self-paced module without live instructor mediation.
- The model further assumes that students enter with adequate literacy and numeracy skills to interpret financial dashboards and navigate branching scenarios effectively.
- A key instructional assumption is that safe failure within a virtual simulation will transfer to real-world financial confidence and decision-making.
- The design also relies on the belief that diverse characters will resonate across socioeconomic backgrounds.
- The plan assumes strong institutional buy-in and trusts automated analytics to provide valid measures of learner reasoning and attitudes.

Communication & Diffusion Plan

Effective communication is essential for ensuring that the Financial Literacy ISD Model is understood, supported, and successfully adopted across the school system. Because the module operates within a suprasystem of district standards, technology policies, and graduation requirements, communication must be intentional, structured, and aligned with stakeholder needs. This plan outlines how information will be shared, how buy-in will be cultivated, and how the model will be diffused to ensure equitable access and long-term sustainability.

Communication Channels

1. Administrator & Leadership Communication
Audience: Principals, curriculum leads, district specialists
Purpose: Ensure alignment with standards, secure approval, coordinate scheduling, and allocate resources
Channels:

- Briefing packets summarizing module goals, standards alignment, and analytics capabilities
- Email updates and scheduled leadership meetings
- Implementation timeline shared through district communication platforms

2. Teacher & Facilitator Communication
Audience: Classroom teachers, instructional coaches
Purpose: Prepare facilitators to introduce, monitor, and support the module
Channels:

- Teacher implementation guide (PDF or LMS-embedded)
- Quick-start job aids for classroom rollout
- Optional 20-minute virtual or in-person orientation session
- LMS announcements and support documentation

3. Student Communication
Audience: 11th–12th grade learners
Purpose: Build confidence, reduce cognitive load, and support self-paced navigation
Channels:

- Short onboarding video embedded in the LMS
- In-module instructions and navigation cues
- Teacher introduction during class
- Optional reminder messages through the LMS

4. Counselor & Support Staff Communication
Audience: Guidance counselors, college/career readiness staff
Purpose: Reinforce real-world application and integrate financial literacy into advising
Channels:

- Counselor briefing sheet
- Access to module analytics to support student conversations
- Integration into advisory or postsecondary planning sessions

5. Technical Support Communication
Audience: IT staff, LMS administrators
Purpose: Ensure smooth technical deployment and troubleshooting
Channels:

- Technical specification sheet
- LMS testing window prior to launch
- Ticketing system for student/teacher issues

Together, these communication channels ensure that all stakeholders understand their roles, responsibilities, and the value of the Financial Literacy ISD Model, supporting equitable access and consistent implementation across the school system.

Diffusion Plan

The diffusion plan ensures that the Financial Literacy ISD Model is not only implemented but also adopted, normalized, and sustained across the school system. Drawing on Ely's Conditions of Change and Rogers' Diffusion of Innovations, the plan supports long-term integration and equitable access for all learners.

1. Establish the Need for Innovation
The needs assessment identified inconsistent financial literacy instruction, inequitable access, and limited opportunities for authentic practice. Communicating these findings builds urgency and shared purpose among stakeholders.

2. Secure Leadership Support
Leadership endorsement is essential for scheduling, resource allocation, and district-wide adoption. Administrators receive clear evidence of alignment with standards, graduation requirements, and student readiness goals.

3. Build a Core Implementation Team
A cross-functional team—including instructional designers, teachers, counselors, and IT staff—supports rollout, troubleshooting, and iterative improvement.

4. Pilot the Module
A small-scale pilot with two or three classrooms allows the team to:

- Test technical performance
- Collect learner analytics
- Identify navigation or comprehension issues
- Refine feedback loops and scaffolding

5. Share Early Successes
Pilot data (completion rates, learner reflections, performance improvements) are shared with teachers and administrators to build momentum and trust.

6. Provide Training & Support
Training focuses on:

- Facilitator responsibilities
- Interpreting analytics
- Supporting self-paced learners
- Troubleshooting common issues

7. Scale Implementation
After refinement, the module is deployed across all 11th–12th grade classrooms, with ongoing support from IT and curriculum specialists.

8. Sustain Through Continuous Improvement

Using embedded analytics, the evaluation specialist monitors:

- Scenario performance patterns
- Time-on-task
- Common misconceptions
- Learner reflections

Annual updates ensure the module remains relevant, accurate, and aligned with evolving financial realities. Sustained diffusion ensures that all students—regardless of background—receive equitable access to high-quality financial literacy instruction.

Conclusion

The Financial Literacy Instructional Systems Design Model provides a structured, data-driven framework for addressing long-standing gaps in secondary financial education. By integrating authentic decision-making scenarios, adaptive feedback, and learner-centered design principles, the model prepares students to navigate real-world financial responsibilities with confidence and competence. The suprasystem and subsystem analyses ensure that the module aligns with district standards, technological infrastructure, and the diverse needs of 11th- and 12th-grade learners. The model's emphasis on self-paced digital learning, contextual sensitivity, and iterative refinement positions it as a scalable and sustainable solution for modern financial literacy instruction. Through a comprehensive communication and diffusion plan, the module is introduced, supported, and normalized across the school environment, ensuring that teachers, counselors, and administrators are equipped to reinforce learning and interpret performance data. Ultimately, this ISD model advances equitable access to financial knowledge by providing all students, regardless of background, with meaningful opportunities to practice financial decision-making in a safe, supportive environment. As the module evolves through ongoing evaluation and analytics-driven improvement, it will continue to strengthen students' readiness for postsecondary transitions and long-term financial well-being.

Peer Review

The peer feedback served as a roadmap for the final iteration of the PACT Model and its supporting materials. The following revisions were implemented based on the critique:

- **Development of a Central Visual Model:** In response to Jose and Theo's feedback, we created a high-resolution, single-page visual diagram of the PACT cycle. This diagram clearly illustrates the inputs, processes, and feedback loops, ensuring that stakeholders can grasp the full system immediately.
- **Integration of Prerequisite Mapping:** Per Brian's suggestion, the PACT simulation was refined to better accommodate learners from all backgrounds. We integrated a Front-End Prerequisite Check inspired by the Gustafson and Branch (2002) framework; this diagnostic layer assesses foundational numeracy at the point of entry. By identifying and addressing these prerequisite gaps early, we eliminate barriers to participation and ensure

that every student is cognitively prepared for the scenario-based challenges in the Act phase.

- **Theoretical Anchoring:** To address Spyros's critique regarding transferability, the explanation must pivot from the specific content (financial literacy) to the underlying logic (the PACT architecture). By framing PACT as a "plug-and-play" structural framework anchored in the ADDIE process, we demonstrate that the model is a universal design pattern for high-stakes decision-making.

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