

Empowering Newcomers through Project-Based Financial Literacy Education

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Summary: This article outlines how a high school math teacher uses project-based financial literacy instruction to improve math engagement and language development for multilingual learners. It highlights implementation strategies, student outcomes, and critical reflections on scalability and instructional challenges.

Keywords: multilingual learners, financial literacy, project-based learning, math mindset, language development, equitable instruction

Reframing Math Classrooms for Multilingual Learners

In today's linguistically diverse secondary classrooms, teachers face mounting pressure to design instruction that is equitable, rigorous, and culturally responsive. For newcomer students—those recently arrived in the United States with little or no English proficiency—traditional high school math pathways often fail to address both content and language development needs.

In my small rural high school in Washington State where 82% of students identify as Latino, I encountered these challenges firsthand. Many of my students were classified as Level 1 or 2 on the WIDA. Drawing on research-supported practices in project-based learning (PBL) and translanguaging, I redesigned a year-long financial literacy class to allow these students to simultaneously build content knowledge, develop mathematical mindset, and support English language acquisition. This article shares outcomes, reflections, and practical insights for other educators seeking to better serve multilingual learners (MLLs) in mathematics.

Context and Instructional Design

Why Financial Literacy?

Geometry is the first math course in our traditional sequence. However, Latin American mathematics curricula often under-emphasize geometry, favoring arithmetic and algebra ([ICSU] & [IMU], 2014). As a result, MLL students faced both a language barrier and a content-area mismatch. In response, we pursued alternative placements.

We identified financial literacy as a more accessible and meaningful entry point. Topics such as budgeting, credit, investing, and job skills provided real-world relevance, cultural connection, and space for language-rich dialogue. These topics

transcended traditional math content, offering students agency in connecting mathematics to their future.

How PBL Works: Methodology and Rationale

To address the academic and linguistic needs of newcomer MLLs, our school has explored various placement models. The most promising emerged from a year-long financial literacy course designed around PBL. Traditionally offered as a third-year elective, this course meets daily and follows a consistent two-week instructional cycle. During the first week, students receive direct instruction using resources from Next Generation Personal Finance (NGPF.org), which includes high-quality Spanish translations. In the second week, students engage in collaborative projects aligned to that unit's theme. These cycles yield approximately 15 projects across the year, culminating in a comprehensive final presentation.

Each unit is built using a “low floor, high ceiling” philosophy—open-ended to allow multiple access points while structured to promote academic rigor and critical thinking. The themes of the course were:

- **Students as Consumers:** Banking, online safety, investing, behavioral economics, and consumer skills
- **Understanding Interest:** Types of credit, credit management, buying a car or house, and insurance
- **College and Career Ready:** Career exploration, post-secondary planning, income, taxes, and paying for college
- **Finances in the Community:** Entrepreneurship, job readiness, mock interviews, philanthropy, and final financial presentations

This PBL model creates culturally responsive entry points that

help students see the relevance in math concepts. This was demonstrated when Raul was working on his Entrepreneurship project, where he purchased and ran a simulated local farm. When He realized the business would take nearly five years to break even, he suddenly cared about expenses, revenue, and profit margin. He quickly figured out that, based on his farm projections, there was no way he could afford the brand-new Ford Lariat 250 truck he had planned to buy during his car project. Boss and Krauss (2018) emphasize that real-world contexts foster authentic communication and accelerate both content and language development.

In the Entrepreneurship project students design and pitch a small business, developing profit projections, startup costs, and marketing plans. The flexibility in presentation format (e.g., PowerPoint, trifold, video, paper, roleplay, assessment creation, podcast, blog, or poster) supported language development while increasing autonomy and engagement, two key drivers of growth in my MLL students. Choice increased student confidence by allowing students to demonstrate knowledge in their preferred format. This year, students will take the project a step further by partnering with a local bakery owned by a school alumnus. They will run marketing campaigns for the business, competing to generate the highest real-world profit. This authentic connection bridges classroom learning with tangible outcomes, reinforcing the cornerstone philosophy of PBL: creating real-world products and fostering meaningful community engagement. A recent meta-analysis confirmed that PBL, with its emphasis on autonomy and real-world connections, yields significantly higher student interest (SMD = .713) and motivation (.401) compared to traditional instruction (Zhang & Ma, 2023).

Language Supports and Theoretical Framework

Scaffolding practices were grounded in the key findings in WIDA's Essential Actions. Instructional supports are critical for helping MLLs engage with grade-level content and succeed academically. Research shows that when a variety of scaffolds are embedded into instruction and assessment—such as visual aids, strategic grouping, and sentence frames—MLLs are more empowered to access curriculum and demonstrate understanding (Gottlieb, 2013).

I remembered reading about translanguaging and thought, *why not let them think in Spanish first?* This translanguaging pedagogy from Garcia and Li (2023) informed our classroom structure: students were encouraged to process and plan in their heritage language, then present in English. This cognitive flexibility allowed students to focus on meaning and mathematical higher level financial thinking before translating into academic English.

Supports included:

- Spanish/English vocabulary charts and sentence starters
- Peer language partners or bilingual instructional aides
- Visual rubrics and bilingual exemplars of prior projects

- Teacher feedback loops with scaffolded conferencing

These strategies were intentionally implemented to reduce cognitive load and help students access both the content and academic language simultaneously. It worked—suddenly, they were explaining compound interest to each other in both languages. I learned that when students were given the space to hash out their ideas in Spanish first, it was like watching lightbulbs turn on. They were engaged, actively processing the content, and having meaningful discourse.

Implementation Challenges and Lessons Learned

Although project-based financial literacy led to strong engagement and academic growth, the process was not without its challenges. My experience revealed several key factors educators must consider before adopting a similar model. This class structure was unfamiliar to my students, so it took time, patience, and explicit instruction on PBL structures and expectations before they could succeed. It's essential that both teachers and students are given the time and space to learn how to engage in higher-level thinking, manage their time, and pursue personal interests—especially in projects where there isn't one "right" answer. Success often depends on the individual's preferences and their ability to research and justify their financial decisions.

Time and Pacing

Many students struggled to complete projects within the allocated time, particularly those with Individualized Education Programs (IEPs) and Multilingual Learner (MLL). Scaffolding and shortening projects for these students was essential for their success, but not always straightforward. Some tasks, such as researching how to buy a car, don't easily lend themselves to being simplified. While project-based learning encouraged deeper thinking, it also required more flexible timelines. This meant I had to identify which parts of a project represented the essential learning for each student. In my classroom, I found that many students had difficulty structuring their time, which often led to wasted class time. Additionally, tasks took significantly longer than I anticipated. For example, a credit card poster project I expected to take two days ended up taking a full week, even though students remained fully engaged throughout.

To address this, I broke this credit card poster into four quadrants, assigning one section due each day, followed by a final presentation. This structure helped keep students on task and moving forward. In future iterations, I plan to include more structured deadlines and project checkpoints to support consistency and productivity.

Public Speaking Anxiety

While presenting business plans, several heritage Spanish-speaking students shared that public speaking was one of their greatest academic stressors. I became aware of this during a lesson on the amygdala, where students explored the body's

response to stress and fear. As part of the activity, I asked them to place sticky notes identifying aspects of the classroom that triggered these responses. To my surprise, my heritage Spanish speakers identified public speaking as their greatest source of anxiety even more than tests they felt unprepared for. During those same classes, several students were willing to forgo credit for their projects if it meant they didn't have to present in front of the class. When I met with them individually, multiple students confided, "I can't do this in English, Mister—I'll sound stupid."

To address this, I introduced alternative presentation options, such as small group delivery or recorded presentations. These adaptations significantly reduced anxiety and increased participation—but they also required intentional planning and individualized support.

Scalability

This model was effective in two classrooms of 25–30 students, where strong teacher-student rapport had already been established. I've been at my school for nearly a decade and have taught many of these students in previous classes—I also know their parents and siblings. Scaling this approach to larger or urban settings would require additional support, such as co-teachers or instructional aides, professional development in PBL design, and time for teacher collaboration.

Measurable Outcomes and Student Mindsets

To gauge the impact on students' mathematical mindset, I administered a simplified Mathematics Attitudes and Perceptions Survey (MAPS) at the beginning and end of the first semester. This tool included quantitative (True/False) and qualitative (open-ended) items related to confidence, persistence, growth mindset, real-world relevance, and sense-making.



Figure 1. MAPS Growth by Category (Fall to Winter)

Key Findings

- 18 out of 22 students tested showed overall growth in mathematical mindset
- Average improvement exceeded 5% across survey dimensions, MLL 5.4%
- Positive Student Mindsets: Growth Mindset, Real-World Connections, and Sense-Making
- Struggling Student Mindsets: Confidence, Interest, and Persistence

Five of my students had been stuck in special education math for years. By December, four of them had an A in my class—and they were teaching their parents and siblings at home about credit cards and how to build a credit score. In total, fourteen students from our MLL program participated in one of my two project-based financial literacy classes. All but two successfully passed the course: one did not meet the attendance requirements, and the other did not complete the necessary assignments. Two students earned college credit for Personal Finance 174 through Central Washington University.

Every student who was tested in the class showed a positive shift in mathematical mindset, as measured by the MAPS survey. One newcomer student made a particularly significant gain, with a 28% increase in her mindset score—highlighting the transformative potential of this instructional approach.

Qualitative reflections revealed that students felt better equipped to manage real-world tasks, even if they still lacked confidence in traditional math settings. One student wrote, "This class made me realize I could understand money and how to use it even if I don't get every math thing."

These results support Zhang's (2023) meta-analysis showing that PBL improves motivation and understanding more effectively than traditional instruction, especially when students engage with content that is personally relevant and socially meaningful.

Practice-Based Recommendations

For Classroom Teachers:

- Start small: Implement one project connected to a real-world decision (e.g., car buying or budgeting)
- Honor student voice: Allow for choice in topics and presentation formats to boost engagement and expression
- Use translanguaging intentionally: Permit initial idea generation in heritage languages before scaffolding academic English output
- Plan for revision: Build checkpoints for feedback and opportunities to revise, even if products are not perfect the first time

For Schools and Districts:

- Provide dedicated time for interdisciplinary planning among ELD, math, and CTE teachers

- Offer PD on culturally responsive PBL design
- Invest in multilingual curricular resources and bilingual aides

cultural identity and supporting language acquisition. Though challenges in time, pacing, and scaffolding emerged, the model proved adaptable and meaningful for students historically underserved in traditional math tracks.

More than just a curriculum solution, this approach invites educators to rethink what it means to be “good at math” and who gets to participate in that definition. By connecting instruction to real-world relevance and language equity, we empower

Conclusion

Project-based financial literacy provided MLL students with access to rigorous mathematics content while affirming their

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