Department of Educational Technology, New Jersey City University

Doctorate in Educational Technology Leadership

EDTC 807 Implementation and Evaluation of Curriculum

Curriculum Implementation Plan Assignment

Proposal to implement Gamification in Teaching and Learning of Financial Education at New Jersey City University School of Business

Sedar Fred Pougaza

Keywords: Curriculum Implementation, Technology-related Curriculum, Gamification, Financial Education, Interactive Learning, Project-Based Learning, Online Platforms.

Overview and Rationale for the Importance of the implementation of Gamification in Teaching and Learning of Financial Education at New Jersey City University School of Business

This proposal addresses the pressing issue of financial education for most nations and the use of technology to improve learning and teaching of financial literacy in the age of higher technology, 'digital literacy' and 'twenty-first-century literacies.' By definition, financial literacy is the ability to understand and interpret knowledge relating to the financial decisions we make (Kapoor et al., 2022, p. xii). It is an ongoing process. It should be accessible to all students regardless of their socioeconomic backgrounds. Financial expert and professor Emeritus with a research specialization in financial literacy, Dr. Mandell argues that a lack of understanding about personal finances or financial illiteracy can lead to poor financial decisions that disrupt the stability of financial markets (Mandell, 2006, p.0). This lack of knowledge can further contribute to widespread financial hardship, poverty, and social unrest observed in many countries today.

Research shows that many young people today struggle with managing their finances. They often lack essential knowledge about saving, budgeting, credit usage, and overall money management. This lack of financial education can lead to poor financial decisions, hindering their ability to save for the future, invest, and ultimately achieve financial stability. Also, this contributes to the widespread financial hardship, poverty, and social tensions observed in many countries nowadays. The United States of America ranks poorly among other nations in saving rate. Based on data from the World Bank, Jahn et. Al. show that the United States is not among the ten countries with the highest saving rates in the world (Jahn et al., 2024).

The new generation often faces significant challenges that discourage them from engaging in traditional financial practices like budgeting, saving, investing and long-term planning. The growing recognition of the importance of financial education is leading to its increased presence in educational systems across the globe. This is a positive step towards creating a more financially informed and empowered future generation. More schools, colleges, and universities in the United States and other nations require financial literacy in their curriculum. This could help them to get grants and continue to provide quality education and prepare future leaders.

Technology-related Curriculum is one of the best ways to ensure all students learn significant financial literacy content in this age of higher technology. Implementing gamification in teaching and learning of financial education at New Jersey City University School of Business is important because there is a correlation between gamification (use of game to improve learning and teaching) and financial literacy (Platz et al., 2022, p. 191). Following Haleem et al. (2022), "the world is sweeping by the digital revolution and digital technologies play an important role in education because digital tools help to improve the classroom atmosphere and make the teaching-learning process more compelling" (p. 276).

The primary purpose of this proposal is to have standardized curriculum by implementing a national or state-mandate financial literacy curriculum across all schools to ensure a baseline level of knowledge for all students. This includes core topics such as budgeting, saving, credit scores, debt management, investing, and responsible spending. Additionally, this proposal aims to engage and motivate students through engaging teaching methods such as interactive learning by using gamification, computer game or application for gamification, simulations, and real-life case studies to make financial concepts more engaging and relatable for students. Interactive learning complements project-based learning. Project-Based Learning consists in assigning

projects such as creating a budget, tracking expenses, or researching investment options to allow students to apply their knowledge practically. Gamification adds more that because the game part is attractive to the new generation. It also helps students to build resilience, overcome barriers to goal achievement and acquire some skills like team work and managing conflict, which are crucial at workplace and for future leaders in this world increasingly volatilized.

With many years of experience teaching and evaluating knowledge and skills in financial literacy and economics, I also want to show that a developing educational technology can aid students in understanding core financial literacy, entrepreneurship and some sophisticated economic concepts (budgeting, scarcity, costs, incentives, benefits and supply and demand for instance) that explain many decisions that humans make and consumers need to know. Researchers have found that these economics concepts mentioned above, are misunderstood by students in K-12 and higher education in the United States and some nations.

A System-Based proposal for Implementation of Gamification in Teaching and Learning of Financial Education at New Jersey City University School of Business

The technology used in teaching and learning of financial education consists usually of online platforms such as educational websites, apps, and online simulations to provide students with additional learning resources and interactive experiences. The financial literacy resources used in teaching and learning of financial education are age-appropriate books, articles, and educational materials to encourage students to explore financial topics independently. For instance, the required textbook for this financial education (Financial Literacy) class is Kapoor, Jack, Dlabay, Les, Huges, Robert & Hart, Melissa. (2022). Personal Finance, 14th Edition, McGraw Hill. It has an e-book version that is on the Connect online learning platform. While Excel modeling holds a valuable place in teaching time value of money (TVM) to business

students (Arellano et al., 2012, p. 663), there is a significant gap in leveraging gamification and other engaging technologies for financial literacy education across K-12 and higher education.

A System-Based proposal for Implementation of Gamification in Teaching and Learning of Financial Education at New Jersey City University School of Business is the Connect Application-Based Activity (ABA). It is incorporated in the computer-based assignment tool called McGraw-Hill Connect linked to the course the student registers for and does include financial literacy and economics recently. Gamification is incorporated in Connect for the Application-Based Activity assignment types which are mini simulations that put the student in the role of making decisions. Students learn by applying concepts and making decisions. Application-Based Activities provide students valuable practice using problem solving skills to apply their knowledge to realistic scenarios. Students' progress from understanding basic concepts to using their knowledge to analyze complex scenarios and solve problems.

My discovery of a correlation between the results of tests, knowledge, and skills in my financial literacy class at New Jersey City University School of Business after incorporating the Connect Application-Based Activity (ABA) suggests that this gamified learning tool is having a positive impact on student learning. The data obtained show that there is a positive correlation between the use of the computer game and test scores, knowledge and skills in financial education course.

An Evaluation Plan (including possible scenarios and vignettes of a successful implementation)

My observation provides real-world evidence that gamified learning, like the Connect Application-Based Activity (ABA), can be an effective tool for enhancing financial literacy

education. This aligns with the growing recognition of gamification's potential in making financial concepts more engaging and relatable for students. The correlation I found suggests that using The Connect Application-Based Activity (ABA) may be leading to better understanding and application of financial knowledge among our students. This can translate to improved test scores, increased confidence in managing personal finances, and a stronger foundation for financial well-being in the future.

Overall, my observation of a correlation between the Connect ABA and improved learning outcomes in my financial literacy class is a valuable contribution to the field of financial literacy education. It highlights the potential of gamification as a powerful tool for equipping students with the knowledge and skills they need to navigate the financial world effectively.

For curriculum implementation plan, I suggest that educators may require training and support to effectively integrate gamified learning into their curriculum and utilize its full potential. This can be done through teacher training. Schools, trustees, stakeholders, should support programs that are being developed to equip educators with the skills and resources to integrate gamified learning into their financial literacy curriculum. The government should subsidize the supply of education by increasing the wages of teachers in k-12 and higher education working public schools, giving more scholarships to students, and decreasing taxes on private schools.

The effectiveness of gamification in financial education is gaining recognition, leading to increased investment and development in this area. As a result, educational institutions and developers are increasingly creating financial literacy games, utilizing mobile apps, virtual reality, and online platforms. A system into a computer application was recently developed by an

undergraduate software engineering student at The Milwaukee School of Engineering (MSOE University) (Warder et al., 2018, p.1). This computer application is a cutting-edge technology for improving teaching and learning financial literacy, financial management, macroeconomics, microeconomics and business education in k-12 and higher education. It illustrates the importance of household savings which is crucial to economic growth because Households save at the financial institutions (commercial banks, for instance), then the banks lend the household savings with interest rate to investors (the borrowers) who will in turn invest into the economy (Warder et al., 2018, p. 27). When households save, they also receive interest payment for the rental of their funds by the financial institutions. Households (depositors and savers) can also get credit from the banks to undertake their projects. All these rational behaviors will lead to national savings that will lead to investment then economic growth.

This computer aided instruction can also be used to teach financial literacy abroad by taking into account the realities of the country. It will be definitely a major contribution to business education. This system into a computer application can help schools and teachers provide quick and useful interactive lessons and scenarios from which students can learn previously misunderstood math concepts. This product will be of significant value nationwide and internationally in this era of emerging technologies. I plan on contacting the administrators and faculty at The Milwaukee School of Engineering (MSOE University) to explore the option of getting this computer application for large use, learning more about it and its implementation to improve teaching and learning of financial literacy, entrepreneurship and economics in the United States and abroad in this era of higher technology. While Excel modeling remains a valuable tool for business students, the future of financial literacy education lies in embracing innovative and engaging technologies such as gamification. This will allow for a more effective

and accessible way to equip all students with the financial knowledge and skills they need to navigate the complexities of the financial world.

A Reflection on How this Work Relates to Selected Readings in the Class

This work relates to selected readings in the class in the way that it is about the implementation and evaluation of curriculum. Ward and the social meliorists argue that schools have the power to create a new social vision that will change things for the better (Kliebard, 2004, p.25). Despite the current limitations, the potential of gamification in financial literacy education is undeniable. In today's digital generation, gamification has become a popular tactic to encourage specific behaviors, and increase motivation and engagement (Hsin-Yuan Huang et al., 2013, p.5).

Educational systems often rely on traditional lectures, textbooks, and rote memorization, neglecting the potential of gamification to make learning financial concepts more engaging and interactive. According to Dewey, our optimal learning occurs through active involvement with the material, as opposed to merely listening to lectures or rote memorization of facts (Main, 2023). Dewey argues that knowledge must be firmly rooted in practical, real-life experiences, and true exploration and learning can only occur when students actively engage with their material through firsthand experiences or experimentation (Main, 2023). Dewey takes a holistic view of education, seeing it as an ongoing process that merges academic knowledge with life experiences. He encourages students to blend critical thinking skills with real-world applications, fostering a seamless integration of theory and practice (Main, 2023). Hirsch's philosophy about schooling is that core content can and will be retained. Hirsch puts emphasis on "Content-based learning" in schools in *The Schools We Need and Why We Don't Have Them*. Hirsch's mantra is "content knowledge." Hirsch describes content curriculum as the most effective method available

for imparting fundamental, foundational knowledge (Tully, 2005, p. 398). “Schools should encourage students to think outside the box and embrace their individuality.” (Amerman, 2009).

My findings highlight the potential for further research on the effectiveness of the Connect Application-Based Activity (ABA) and other gamified learning tools in financial literacy education. This could involve conducting larger-scale studies or comparing the impact of gamified learning with traditional teaching methods.

References

Amerman, T. (2009, February 26). *Education is more than Academics*. Home News Tribune – East Brunswick, N.J. U.S.A.

Arellano, F., Mulig, L., & Rhame, S. (2012). *Teaching time value of money using an Excel retirement model*. *American Journal of Business Education (AJBE)*, *5*(6), 663-676. https://doi.org/10.19030/ajbe.v5i6.7389

Hsin-Yuan Huang, W., & Soman, D. (2013). *A practitioner’s guide to gamification of education*. Rotman School of Management, University of Toronto.

Jahn, M., Boyle, M., Logan, M. (2024). “*10 Countries with the Highest Savings Rates*” Investopedia. February 27, 2024. https://www.investopedia.com/articles/personal-finance/022415/top-10-countries-save-most.asp#toc-the-top-ten-savers

Kapoor, J., Dlabay, L., Huges, R., & Hart, M. (2022). *Personal Finance*, 14th Edition, McGraw Hill.

Kliebard, H. (2004). *The struggle for the American curriculum, 1893-1958*. New York, NY: Routledge.

Main, P (2023, February 14). John Dewey's Theory. Retrieved from https://www.structural-learning.com/post/john-deweys-theory

Mandell, L. (2006). *Financial literacy: If it's so important, why isn't it improving?* SSRN Electronic Journal, 11. https://doi.org/10.2139/ssrn.923557

Platz, L., Juttler, M. (2022). Game-based learning as a gateway for promoting financial literacy – how games in economics influence students' financial interest**.** Citizenship, Social and Economic Education 2022, Vol. 21(3) 185–208. file:///D:/NJCU/NJCUDO~1/DOCTOR~1/SPRING~2/EDTC80~1/DISCUS~1/WEEK2D~1/PLATZ- ~1.PDF

Tully, D. (2005). The Schools We Need and Why We Don't Have Them, by E.D. Hirsch, Jr.. Journal of Catholic Education, 8 (3). http://dx.doi.org/10.15365/joce.0803092013

Warder, M. F., Gottlieb, T. J., Jung, P. J., Miezio, K. R., Carlson-Oehlers, V., & Cohen, B. A. (2018). *A computer application to teach financial literacy*. 2018 IEEE Global Humanitarian Technology Conference (GHTC), San Jose, CA, *1-2.* https://doi.org/10.1109/ghtc.2018.8601708