Encouraging Teenage Financial Literacy through Modifications to *RuneScape*

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Abstract

With gameplay modifications modeled after a financial literacy curriculum, *RuneScape* (2001, Jagex) can be used to teach basic financial literacy to teenagers through leveraging the use of a third space (Halverson & Shapiro 2012), increasing computational literacy (Berland, 2010) and applying Gee’s principles of good games and learning (2005). *RuneScape* is a Massive Multiplayer Online Role Playing Game that allows its players to complete quests, fight monsters, make friends and enjoy endless experiences. With over 1.3 million players, it has been able to engage players for over fifteen years. With so many players enjoying *RuneScape*, a couple modifications to its system could increase the game’s educational potential. Currently, studies have shown that teenagers lack sufficient financial literacy to make good financial decisions (JumpStart, 2008). In order to better prepare teenagers for life in college and after school, the Money Talks (Faux & Daly, 2002) curriculum has made strides in increasing teenage financial literacy. Using the units of the successful curriculum, modifications made to *RuneScape*’s overall gameplay and especially its Grand Exchange feature will allow for a more educational and engaging experience in game. In conjunction with the added features in game, a course can be used around the game and curriculum to encourage reflection, discussion and aspects of computational literacy that focus around the topics of that class. Using *RuneScape* in this way will create a more interactive and engaging learning experience than a traditional financial literacy course.

With gameplay modifications modeled after a financial literacy curriculum, *RuneScape* (2001, Jagex) can be used to teach basic financial literacy to teenagers through leveraging the use of a third space (Halverson & Shapiro, 2012), increasing computational literacy (Berland, 2010) and applying Gee’s (2005) principles of good games and learning. A study by the Jump$tart Coalition (Mandell, 2008) concluded that most finance curriculums are not effective with teenagers as they are non-interactive and non-engaging. Games and learning has been widely studied and studies suggest that in-game player goals and opportunities to learn from failure create an engaging learning environment (Halverson, 2005). Two major modifications to *RuneScape* in conjunction with a strong curriculum modeled around game learning theories will both engage and educate students, increasing their financial literacy.

*Runescape* (2001, Jagex)is a Massively Multiplayer Online Role Playing Game (MMORPG) where players are constantly interacting with each other in various ways. They can interact more seriously through team completion of goals or trading items or more leisurely through just skill building and "hanging out". In many ways, the gameplay is similar to interactions between people in real life. The game takes place in a medieval fantasy world called Gielinor. Players have access to 27 different skills split into four different types: combat, gathering, artisan and construction and support skills. Players can make income in a variety of ways such as killing monsters and other players for loot drops, selling and trading items to other players, selling items on the Grand Exchange, doing quests and playing mini games. This income can then be used by players to buy items to train their skills, and buy weapons and armor for their characters to equip. As of now, the in-game opportunities can teach basic money and resource management skills, but it still lacks a clear learning goal of increasing financial literacy.

In order to teach financial literacy in and outside the gameplay of *RuneScape* (2001, Jagex), the game will need major changes that allow for the integration of a financial literacy curriculum. Money Talks (Faux & Daly, 2002), is a financial literacy curriculum aimed at teaching teens about the various money management skills they will need during adulthood. The curriculum is broken down into six units: Goals and Budget, Basic Banking Services and Checking Accounts, Savings Accounts, Credit, Loans and Growing Your Money. Karen P. Varcoe, Allen Martin, Zana Devitto and Charles Go (2002) found that teens who participated in courses designed around the Money Talks curriculum increased their financial literacy knowledge and decision making. They argue that “financial management needs to be integrated into high school curriculum as an important step to ensure future financial success of today's teens” (p. 5). To facilitate the incorporation of these units in the game, the main change will be limiting the potential ways to make money to only the Grand Exchange. Currently, the Grand Exchange is very simple, the player can deposit items in the communal market and personally set the price for those items. While players can learn basic economic principles such as buying low and selling high, that is the extent of the Grand Exchange's current potential. In the reworked version, the Grand Exchange becomes the main monetary hub of the game. Instead of having various ways to earn money in game, the Grand Exchange is now the only way to generate income and players will need to sell and buy all of their items through the exchange market. Other avenues of income would ultimately be disabled; players would no longer profit from trading and selling with other players and killing monsters or completing minigames would no longer earn you coins. This would ensure that the Grand Exchange would be the sole source of income, thus effectively making it an integral part of the gameplay experience. In addition, the second change is that all in-game activities that are considered “fun” will cost in-game currency. This includes completing quests, fighting monsters, playing mini games and travelling to different towns. Since there is currently only one Grand Exchange in the game, there will now need to be an exchange market accessible in nearly every town. With these changes ~~to the game i~~n place, the exchange markets will be able to model the units of the Money Talks curriculum and leverage the learning theories.

The first learning theory that I leveraged is the use of a third space, a participatory culture that revolves around game play. Kurt Squire (2011), a researcher who studied the effects of teaching history to students using the popular game, *Civilization III* (2002, Firaxis Games), found that his use of mini lectures aided in the understanding of the material. In his example, his lectures were about formulas or strategies that could be used in game to limit frustrations and keep the students’ minds focused on the relevant educational material, rather than the challenges of learning the game. Using the Money Talks curriculum, mini lectures can be incorporated into the gameplay using real life information and illustrating how the game models these real world situations. During or after gameplay, reflection on real world depictions and limitations of the game can be explored and improved upon. This will contribute to the formation of a third space. Richard Halverson (2012), a researcher in video games and learning, discusses how games can promote third spaces in the form of discussion boards and other social interactions that relate to gameplay. Formulating mini lectures and discussion so that students gravitate towards third space interactions will deepen their understanding of the material in a way that the game, alone, could not. In order to promote a third space, students will be given a budget and savings display built into the exchange interface, mirroring the first unit of the Money Talks Curriculum. This display will show real time information on what expenditures they have made, average expenditures and their own personal budgeting and savings goals. Since the benefits of saving and budgeting may not be initially foreseeable by the students, they may be unlikely to do them. This is where, at the start of the class, the teacher uses a mini lecture to discuss the broad benefits of creating a personalized budget and savings plan. After this short discussion, the students have an activity of creating their budget plan and submitting a savings goal to the teacher. The savings goal could potentially be an item they want to purchase in the future or just a set monetary goal. This will engage the students in a goal that also directly ties to the curriculum. The teacher, over the duration of the course, could intermittently meet with students during the semester and reflect on the progress of their savings and budget plan. Throughout the semester, in-class discussions between students about their savings and budgets will be facilitated by the teacher. The exchange markets will also introduce the role of credit to model the credit unit of the curriculum. This will be a banking service made available to the students. In the game, students will have a credit card associated with the exchange bank. In class, the teacher will talk about the concept of the credit card, its benefits, its limitations, and different strategies for building a good credit score. Over the period of the course, students will go through multiple financial years and see an in game credit score that models a real credit score. Not overdrafting and making timely credit card bill payments are examples of good credit decisions that would increase a student's credit score. Third space interactions in the form of friendly competition around higher credit scores may develop between students. These additions to the exchange market will leverage a third space learning theory and allow for students to reflect and discuss on their experiences in game.

Using *RuneScape* (2001, Jagex) to teach the concepts will also increase students’ cognitive and social computational literacy. Berland (2010) describes cognitive computational literacy as “enactment of explicit sets of instructions in a specified order” (p. 2). The students will enact the rules that the units proposed and use simplified versions of real world finance management to develop computational methods for traversing the game. Since the students will be playing under the guidance of a teacher, they will learn good methods for handling finances in their future. While the real world will be more complicated, the strategies that the students develop will stick with them beyond the course. In regards to social computational literacy, Berland describes games as “excellent collaborative learning environments” (p.2). Social computational literacy involves learners sharing knowledge, information and strategy in the form of computational methods. In order to build skills in computational literacy, the savings account will be introduced. This will be essential to the savings goals that the students created earlier. Students will be able to choose whether to deposit income in their savings or checking based on their budget and savings goals. In addition, there will be three different types of basic savings accounts offered: a traditional savings account, a Money Market savings account and a certificate-of-deposit savings account. Before opening a savings account the teacher will introduce the different types of savings accounts and the benefits of each. This will allow the students to make a more informed decision on which account to open in regards to their savings goal. Because there are multiple types of savings accounts offered, students will have to develop and maintain a specific set of instructions or methods to successfully reach their savings goal. Near the end of the class period, students could group up with other students who chose different savings accounts and discuss the reasoning behind their choices. In order to discuss their reasoning, the students will have to communicate the computational methods that they’ve developed throughout their play, increasing their cognitive computational literacy. While this will strengthen the student's knowledge in the curriculum units, it will also increase their collaborative and problem solving skills through stronger computational literacy.

With the goal of engaging the students in the units of the curriculum, particular attention will be given to Gee’s (2005) principles of good games and learning, the third learning theory that I leveraged. He describes three areas that good games excel in: Empowered Learners, Problem Solving, and Understanding. Using *RuneScape* (2001, Jagex) will allow the students to become empowered learners because they will be able to use many of the concepts they are learning about in class and test them for themselves in game. The gameplay environment provides students with opportunities to demonstrate their newly learned skills and concepts, it also reinforces their understanding of the course material. When prompted to solve problems or make significant decisions, students will need to rely on the concepts they've learned in class. Empowering the students and increasing their understanding and problem solving in-game will be facilitated through access to a checking account, an in game debit card, the ability to withdraw coins for purchases and the availability of loans. Whenever income is made, students will be able to direct that money to their checking or savings accounts. The money in their bank accounts can then be withdrawn as cash or accessed through checking or debit cards. The students will also have the ability to submit an application for a loan. This application would include the requested amount, the payment plan, their current sources of income and the item or items they plan on purchasing. Utilizing these added features will empower the students because they will be able to use and experiment with the concepts that they are learning about in class. As the students will continually face problems throughout play, they will need to use their understanding of the course material to solve each one. The students will become empowered learners because they will need to understand the concepts taught in class in order to succeed in game.

Leveraging these learning theories and incorporating the the Money Talks curriculum into the exchange market will facilitate the understanding of financial literacy. With the aid of a teacher who is able to utilize the students’ interest and engagement in the game to drive home the concepts from the units, the changes made will lead to a deeper understanding of financial literacy and more developed financial problem solving skills. In addition, the formation of a third space will allow the students to think beyond their own gameplay and reflect, alongside their peers, about the most efficient ways to manage their finances. Through in class discussion around the gameplay, students will also increase their social and cognitive computational literacy, skills that can ultimately be utilized in their real world financial future. With the major changes to the monetary system and through use of discussion, reflection and mini lectures, *RuneScape* (2001, Jagex) will successfully teach teens basic financial literacy.

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