

F-043

USING MMOG TO PROMOTE EFFECTIVE INSTRUCTIONAL DESIGN IN MOBILE LEARNING

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1. Introduction

In many related research today, the prospective of Massive Multiplayer Online Gaming (MMOG) to be utilized as an instructional gaming platform for Mobile Learning (M-learning) had been known to be quite appealing. However, in spite of the numerous research that MMOG are both engaging and instructive to be used in learning, little consent had been made on the vital gaming features of that particular online gaming genre that is able to support such learning on a limited capabilities of a mobile device, the process of which MMOG can engage M-learning students, or the types of M-learning outcomes that can be accomplished through its usage. Eventually, there is a huge possibility that the developer might be designing a portable instructional learning system that neither instructs nor engages the students.

The principle of this paper is to delineate a model as shown in Figure 1 that observes the distinctive features of MMOG that can improve M-learning usage. The paper speaks of three crucial pointers: (1) to identify the primary attributes of MMOG that is significance from an instructional standpoint, (2) the motivational process's dispositions that these attributes set off in students and (3) the effects on M-learning outcomes from these instructional MMOG. Our paper discusses this approach to our current development for an efficient M-learning system.

2. Identifying Significant MMOG Attributes for Instructional M-learning

There can be many factors of what makes MMOG interesting to their players that would later lead to addiction even if the game practices on repetition game design and gameplay. However, choosing those gaming attribute requires a look into how they are compatible with M-learning to create the links to produce these instructions.

Researches done on amalgamating MMOG elements into learning are not entirely new in the world of E-learning. Preston, Booth and Chastine [1] had emphasize 6 key points of MMOG that are necessary to simulate the game genre's graphical interface within learning, by including immersive environments, VOIP synchronous communication, bubble-style text messaging, customizable worlds, and building peer learning and impromptu learning opportunities. Besides graphics, Yee [2] had proven that in-game preferences also play a huge role on promoting the motivations for continuous play of the MMOG genre, identified in specific of character creation, combat system, crafting system, landscape and on-going quest. Agreeing with the motivational factors upon referencing, Johnsson [3] came to similar conclusion, with the addition of web forums, emails, and replays of chatting session, in order to improve the social interaction made between students. As we can see from the compilations of MMOG in-game attributes made by these known gaming/learning researches, each one of these serves as part of

what makes MMOG and gaming elements captivating that kept making the students motivated to continue learning on long periods and kept coming back again for more.

On a general broader term aside from the in-game elements, there are still a lot the MMOG has to offer on a broader scale of gameplay itself. This is what leads to make their players to become extremely attracted, or addicted to be playing the genre much longer and much more motivated than common home game consoles. Chen [5] listed 7 propositions of why MMOG is so addictive, namely based on social interaction seeking, flow of games difficulty levels against their character's skill fitting together, gaining optimal experience based on specific goals, the availability of many player's options for operations, more in-game feedback announcement being made, a more centralized and reliable communication environment, and because of a more convenient communication tools available to be utilized.

Chen's findings are also interrelated to the research conclusion of Thomas, Schott and Kambouri [6] concerning usability principles of an effective mobile learning game whereby they share many similar elements in terms of adaptation methodologies into the mobile learning environment, different difficulty levels of challenge and mystery, promoting the user towards achieving the goals of the learning, supporting of social interaction and collaboration in the learning community, as well as paying attention to the context of the learning requirements. Therefore, by careful selections of significant MMOG in-game attributes and coupled with its addictive attributes, we can trigger the effective learning instructions to be promoted in the M-learning environment if we unite it with efficient usability principles. This is where Garris [7] research had proven, whereby the researcher had identified 6 games attributes related to instructional designs, which are fantasy, rules/goals, sensory stimuli, challenge, mystery and controls. Quoting from Garris, "*there are elements of games that can be activated within an instructional context that may enhance the learning process*". Hence, we can see that on general terms, games attributes had been known to be effective to promote not just motivations, but also instructions in learning situations, and talking-genre specifically due to its many successful attempts at research in E-learning, MMOG would be the best in the field to be utilize for a M-learning environment.

3. Motivational Process's Dispositions that these Attributes set off in Students

Numerous past researches [8] [9] had specified that the main objective to be attain in motivational outcomes should consist of strong encouragement, focus, pleasure, engagement, passion of participation, and task persistency. We can delineate that the motivational process in this context had resulted to have the continuous gameplay triggering 3 recurring series of Learner's Decisions, Sense of Attitudes, and Responses.

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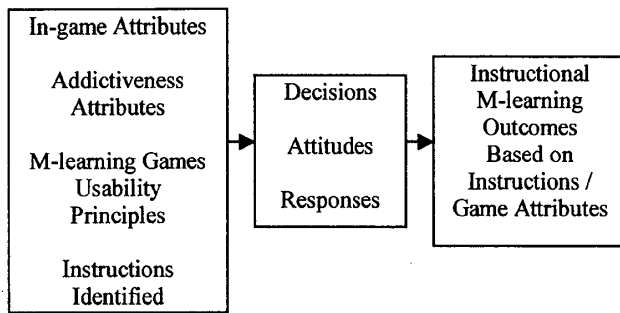


Figure 1 – The proposed model of using MMOG attributes to promote effective instructional design in M-learning

As the student begins the gameplay, they make a lot of decisions of whether the learning is fun and/or engaging (Learner's Decisions). This can range from interactive actions like waving to a friend or interacting with the environment such as opening a door, to learning actions such as using an interactive blackboard or viewing a replay video of the lesson. As the student continues with the learning, their decisions will then decide their own course of actions, passion, and future performance (Sense of Attitudes). The motivated students that are more enthusiastically opt to participate in assigned activities will continue to be active in those tasks more dynamically, and they persevere even longer at them. This can be of their passion at collaborating with their classmates in solving given group homework, to decisions on actively participating in class discussions. In short, when students are more interested, will be more dedicated in them, and they will evolve to be more committed for prolong learning. This can be described as *persistent engagement* [7] that taken effect in students that had developed positive decisions under continuous gameplay activities. Finally, the system response is practically the most critical component to be concern as it is use to maintain the performance and enthusiasm of the student. Research suggested that the effect of system responses may improve the student's performance, though under certain conditions, it may have the reverse effect. This is why in order to maintain good response system; firstly the goals of learning should be made clear towards reaching a high objective commitment thus increasing their effort to meet the set standard. From here, the response system will then provides an appraisal of progress towards those objectives that will then motivate the students to disburse more effort and to be more focus to the task at hand.

4. The effects on M-learning outcomes from these instructional MMOG

Learning outcomes are statements of the knowledge, skills and abilities the students possess and can demonstrate upon completion of repetition of learning experiences. Many known researchers had attempted to categories learning outcomes, and in an effort to give a broader definition, Kraiger, Ford and Salas [10] had enlisted learning outcomes to be of (1) skill-based, (2) cognitive, and (3) affective outcomes. Based on our identifications of activities derived from the motivational process's nature, we can based the M-learning outcomes from each definitions described by Kraiger.

Skill-based learning outcomes that address development of one's technical skills obviously related to our proposed model by many ways, like for a simple example, being able to program codes after a live blackboard sessions on their mobile devices. Cognitive learning outcomes are also related, which includes declarative knowledge (e.g. able to code a good inventory system

learnt from a programming class), procedural knowledge (e.g. able to draw a good painting after sessions of whiteboard classes), and strategic knowledge (e.g. such as being able to use game design knowledge to identify the physic engine coding problem).

Affective learning outcomes refer to attitudes, which is relates a lot to how students will perform in real-life after sessions of M-learning experience. For example, after several sessions of discussing with their classmates to solve an assignment, these repeated actions will be able to affect their real-life behavior in collaborating face-to-face with someone to solve a real-life problem. To say the least, the learning outcomes that will be resulted from using our proposed M-learning system integrated with MMOG will not just be effective in the system, but it will also subtly instruct the students offline to be efficient in their daily activities, particularly related to what they have learnt.

5. Conclusion

With these propositions, we believe that our model of using MMOG to promote effective instructional design in M-learning would be a giant leap into the on-going research on issues surrounding motivational factors of mobile learning. Our next step is to further use these propositions in our prototype development for mobile devices and reevaluate again for possible campus/university incorporation.

6. References

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