

**NORTHCENTRAL UNIVERSITY  
ASSIGNMENT COVER SHEET**

Learner: **Steven Diaz**

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**LTM5003**

**Dr. Amy Peterson**

**Educational Applications of Educational  
Media**

**Assignment 4: Position Paper –  
Instructional Games**

**Dr. Peterson,**

**Interesting and fun assignment! Do you have knowledge of research where games have been used in the instructional method for college developmental math courses? Do you believe this could be a good topic for the dissertation?**

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Position Paper – Instructional Games

Steven Diaz

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### Instructional Games

In 1999 or 2000, I used a simulation computer game (i.e. The Hot Dog Stand: The Works by Sunburst) with a 7<sup>th</sup> grade math class as an interdisciplinary activity connecting mathematics and computers during math and computer class periods. The game consisted of managing a hot dog stand where students were responsible for making important decisions to have a successful business. In the game, students were required to read and analyze several business reports that the previous owner of the stand (as part of the story line of the game) left for the new owners (i.e. the students). The goal of the game was to reach a targeted profit by selling hot dogs in different sports events. Using the reports and their experience attending sports events, students applied their critical thinking skills and math concepts to set up prices, manage the inventory, do marketing, forecast sales, and handle unexpected events (e.g. broken refrigerator, stove, stolen property, etc.). The game was played in groups of 2 or 3 students and after 4 weeks playing the game, they were required to submit a report using software tools (i.e. Microsoft Word and Excel) about their experience and performance playing the game.

Since then there have been few instances in my teaching experience where teaching-learning math was as exciting, engaging, challenging, meaningful, and fun than what my students and I experienced when playing this computer game. I do not recollect other instances when students wanted to stay longer in math class to learn more about math, so they could successfully play the game. Teaching and learning during that time seemed effortless, which is what Csikszentmihalyi described as the *flow*:

“As a state of optimal experience, whereby a person is so engaged in activity that self-consciousness disappears, time becomes distorted, and people engage in complex, goal-

directed activity not for external rewards, but for simply the exhilaration of doing” (as cited in Squire, 2003, p.3).

This type of experience is what I want to replicate constantly during the learning process in my classroom. I want my students taking control and ownership of the learning process and become active learners. I want to change my role from instructor to facilitator, where I become a resource of knowledge not the source of knowledge. For such reason, I believe that using computer, video or online games is a possible effective strategy to maximize every minute of instructional time.

For reasons that I do not fully remember, I never used again games in my classroom. Probably, I felt the pressure of covering the scope and sequence of the course curriculum, which diffused my initiative and innovative ideas of using games in my classroom. At that time, I probably decided that using the traditional model of math instruction (i.e. class lectures and recitations) was the most effective way to cover the course content, so no students, parents, teachers, or administrators could state that my students were never introduced to the required grade level or course topics. However, since making such decision, I have been constantly troubled and concerned with my students’ lack of motivation, engagement, interest, and poor performance learning mathematics. I am spending considerable time and efforts helping my students enjoy and do math but I have not seen significant improvement in my courses.

Recently, I attended a conference of educational technology in Florida, which sparked my interest again of using games in my classroom. I witnessed how other instructors and a few school districts are using immersive educational video games from Tabula Digita’s DimensionM to excite students learn and enjoy doing mathematics. I saw how students and teachers became partners of the learning process while playing games, which is the type of relationship I want to

accomplish with my students in the classroom. Since the conference, I have constantly been reflecting on several questions about the possibility of using games in my instructional method. Why not try again using games in my classroom to replicate the Csikszentmihalyi's *flow* that I had experienced before?; What factors in my classroom could hinder my initiative to use games as part of my method of instruction?; Are my students and I ready for learning and teaching with a different instructional approach?

Due to the ubiquity nature of technology, now information can be easily accessed at any time and place creating innovative ways of teaching and learning, and teachers should take advantage of this for engaging students by any means necessary (Annetta, 2007). According to Bergoña (2003), the most direct and often contact that students have with technology is through video games. Stansbury (2008) from eSchool News reported the results of Project Tomorrow's 5<sup>th</sup> Annual Speak Up survey, which indicated that 64% of K-12 students play regularly about 8-10 hours online or electronic-based games. Ferdig (2007) reported from A Pew Internet Study that 70% of college students play games of some sort (i.e. video, computer or online) and gaming is naturally becoming part of students' college life. Squire (2003) stated video games as a powerful force that exert a pervasive influence on the American culture, which Oblinger (2004) recognized this influence when she stated "Raised in the presence of video, console and computer games, students in their twenties may have more years experience with games than with reading" (p. 2).

In my opinion, all the above is suggesting that teachers should take advantage of students' natural interest, ability and experience with games and use it as the initial point to build new knowledge and to canalize their enthusiasm, attention, motivation, and engagement for playing games to achieve course's objectives. Roblyer (2006) inferred the same about games when she

stated “Games provide teachers with opportunities for taking advantage of this innate desire to get students to focus on curriculum topics” (p. 94). According to Begoña (2003), our digital generation students are experiencing learning in non-traditional ways. They prefer to process information rapidly, to multitask, to learn from images than text, to learn in a nonlinear fashion, to solve problems by trial and error, to access information and socialize in varied ways, to expect immediate applicability or contextualization of what they learn, and to view technology as positive influence in their lives.

All this means that if teachers want to improve students’ critical thinking skills and maximize every minute of instructional time, so their students become productive, informed and empowering citizens of our society, then teachers should consider start using in their instruction those things that students experience the most: games! Once teachers gain their students’ undivided attention then they have cleared the path to focus effectively on the course’s goals and objectives by planning and using additional activities to facilitate new learning and meaningful experiences. Nonis (2006) emphasized that the opportunity for teachers using games in the classroom should not be missed since instruction will be aligned based on students’ interests, and the chances for students being engaged and motivated experiencing meaningful and independent learning experiences are higher. Otherwise, schools will continue to be considered irrelevant by most students after elementary level (Shaffer, Squire, Halverson, & Gee, 2005).

Learning how games engage and motivate students for working harder to succeed in the game experience, it should be one of the main reasons for teachers using games in the classroom since this kind of behavior is what they want to replicate during instructional time. Observing, experiencing and researching what students experience when playing games, teachers will notice the several benefits of using games in their classroom. Games have rich story lines making the

game cross-curricular (Annetta, 2007) and according to Shaffer, an education science professor at the University of Wisconsin-Madison, learning is more real and meaningful than what students often experience in school (as cited in Long, 2007). The cross-curricular nature of games is possibly an effective strategy to overcome the problem of inert knowledge (Squire & Jenkins, 2004) that teachers often encounter with their students, which consist of students not being capable of transferring what they have learned into new situations. Games by default are experiential (Oblinger, 2004) and force students to make choices and accept the consequences of their choices, consequently, promoting in them to hypothesize and test their thinking during the game (Squire & Jenkins, 2004).

The outcomes of playing games can be considered types of performance based assessment (Oblinger, 2004) since students are learning by doing on how to succeed in the game. To play successfully the game, students are often motivated to seek information from many sources (Nonis, 2004) to understand concepts and skills behind the game situation. Many turn to the traditional textbooks to seek additional information or collaborate with other players by sharing and discussing knowledge about the games (Squire & Jenkins, 2004). Games bring players together making gaming a social phenomena where they meet at work, school, family, or through the Internet (Squire, 2003). Herz stated that students take ownership of the learning process through their active participation playing games, but the value of this ownership is even greater than a course grade or teacher approval since it is an incentive to gain status among other players (as cited in Oblinger, 2004). Begoña (2007) recognized that games could ease the use and understanding of technology, which foster the learning that is typical and required in today's information society.

In summary, playing games is a natural part for today's generation of students and there are an overwhelming number of benefits for using games in the classroom. Based on this, the decision to use games in the classroom should be evident. However, only 11% of those teachers who participated in Project's Tomorrow 5<sup>th</sup> Annual Speak Up Survey are currently incorporating games in their instruction (Stansbury, 2008). In other words, there is a disconnection between how students are learning and what teachers believe what is best for teaching and learning. I have no doubt that most teachers want to somehow integrate technology in the classroom to engage and motivate students in the learning process but we are missing or ignoring the most obvious technological tool that could possibly and quickly achieve such engagement and motivation: games!

Begoña (2003) noticed a difference in design between multimedia and video games, which consisted that multimedia focus around the subject matter but video games focus around the players. From my experience, most teachers' efforts for integrating technology in the classroom consist in finding ways for using interesting multimedia tools that they consider it could enhance the course content, and therefore, it will increase students' interest for learning the content. The problem with this approach is that the integration is based on the teachers' experiences and not on the students' experiences. In other words, the most significant factor that hinders the use of games in the classroom is us, the teachers. If teachers want their students to become active learners and take ownership of the learning process then we must change the current traditional teaching approach and find new ways of teaching our students that are learning in non-traditional ways in today's information society. Roblyer (2006) stated that teachers should use technology to communicate better with students. Then games should be a priority when integrating technology in the classroom.

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