Introduction

Chapter - 1 : Introduction

1.1 Introduction

The institutions are focused on preparing future professionals and addressing that, innovative teaching methods are adapted. As the field of digital games and simulation is constantly changing and evolving, this paper seeks to address the issue and inculcate the concept of gaming in a non-game environment i.e., education. The main purpose is to learn the effect of games on achieving specific learning objectives. As rapidly evolving technological applications, games and simulations are already widely integrated into the traditional educational process. They are deployed extensively in the field of education, with an existing body of work examining the relation between games and education (Yang, Chen, & Jeng, 2010; Chiang, Lin Cheng, & Liu 2011) using gaming can foster social and emotional learning and motivate students to take risks. With the growing expansion of technology, instructors and those who create educational policies are interested in introducing innovative technological tools, such as video games, virtual worlds, and Massive Multi-Player Online Games (Buckless, 2014; Gomez, 2014).

The term 'Gamification' was coined back in 2002 by Nick Pelling, a British-born computer programmer, and inventor, and hit the mainstream thanks to Foursquare in 2009. Gamification is hotter than ever.

Games and role-plays show mixed results in a variety of fields, such as student performance, engagement, and motivation to learn. However, as these courses focus on specific areas, there is still a gap in the literature on a clear framework for use in all educational programs and use in different contexts. Advances in science and technology have a major impact on our lifestyle. They imposed many changes in every aspect of their lives. In the field of education, a new generation of technical tools is being developed to transform traditional teaching methods and improve student learning. Most modern classrooms have computers, providing teachers and professors using ICT with the opportunity to enhance their education and learning. Several factors have made instructional games attractive learning tools. The advancement of technology has made it possible to play games on simple platforms such as mobile devices. This makes instructional games accessible to many people including those who do not have personal computers (Mitchell & Savill-Smith, 2004). Instructional games may create a new learning culture that better corresponds with students' habits and interests (Prensky, 2001). More importantly, instructional games are thought to be effective tools for teaching difficult and complex procedures because they (a) use action instead of explanation, (b) create personal motivation and satisfaction, (c) accommodate multiple learning styles and skills, (d) reinforce mastery skills, and (e) provide interactively and decision making context (Charles & McAlister, 2004; Holland, Jenkins, & Squire, 2002; Sheffield, 2005).

The findings of empirical studies revealed that instructional games promoted learners' attention (Yip & Kwan, 2006), state of flow (Kiili, 2005b), motivation (Rosas et al., 2003), delayed retention (Cameron & Dwyer, 2005), mathematics performance (Ke & Grabowski, 2007; Lopez-Moreto & Lopez, 2007; Shaffer, 1997), knowledge transfer (Shaffer, 2006), decision making (Corsi et al., 2006), expert behavior development (VanDeventer & White, 2002), and spatial skills and brain oscillation (Natale, 2002). In addition, using games created dynamically (Rosas et al., 2003) and collaborative (Squire, Giovanetto, Devane, & Durga, 2005) learning environments which positively affected learning. This study was conducted to see the effects of online gaming on students' cognitive skills and check whether it has any impact on academics.

1.2 Need and Significance of the Study

The gamification of learning is an educational approach that seeks to motivate students. Gamification in Education means that Educators apply game design elements to an educational setting. In this study the investigator puts game-like elements into the classroom environment so that learning can become more engaging and fun. Although being a popular concept in Western Nations, India is still far away and especially educators too are unaware of this concept. So, the investigator felt a prime need to research on the topic, to find out the real significance of gamification on children in India also.

1.3 The objective of the Study

1. To study the effectiveness of playing online games on cognitive skills.
2. To study the effectiveness of playing online games on the achievement of the students.

1.4 Statement of the Problem

Effectiveness of computer games on student's cognitive skills and achievement in mathematics in class VII

1.5 Hypothesis

1. There is no significant difference between learners' cognitive skills of the experimental group and the control group.
2. There is no significant difference between learners' mathematical achievement in the experimental group and the control group.

1.6 Operational Definitions

Educational Games- Educational games are games that are explicitly designed for educational purposes or have an accidental or secondary educational value. All kinds of games can be used in the educational arena, however educational games are games designed to help people learn about specific topics, expand ideas, reinforce progress, understand a historical event or culture, or help them learn a skill as they do. play. Types of games include board, card, and video games.

As educators, governments, and parents see the psychological need and benefits of gaming learning, this educational tool has become quite common. Games is a collaborative game that teaches principles, rules, adaptability, problem-solving, and interaction, all presented as a story. They satisfy the vital need for learning by providing enjoyment, loving involvement, structure, motivation, ego satisfaction, adrenaline, art, social interaction, and emotion in the game itself while learning.

Effectiveness- Effectiveness in this study can be defined as the resulting state or condition as a consequence of using an online computer game-based teaching-learning strategy.

Modern instructional games- Modern Instructional Games are software designed to increase learning motivation by adding game rules and/or competing in learning activities. Nor is it a learning tool used during

teaching and learning. It is one of the constructions in place of the traditional teaching method and the gaming event is proposed as the official standard for interactive multimedia learning environments. The game provides ways to understand inspiration and learn holistically. Technology offers many ways to play seriously.

Academic achievement- Academic achievement is the level at which a student, teacher, or institution achieves their short- or long-term educational goals. Completion of academic benchmarks such as high school diplomas and bachelor's degrees represents academic success.

Academic achievement is often measured by ongoing tests or tests but there is no standard agreement on how best to assess any of the most important factors — knowledge of processes such as skills or knowledge of self-declaration as fact. In addition, there are incomplete consequences which are the only factors that successfully predict academic performance, factors such as test anxiety, environment, motivation, and emotions need to be considered when designing school success models. Now, schools are earning money based on their students' academic achievement. The most successful academic school will earn more money than the least successful school.

Cognitive Skills- Cognitive skills, also called cognitive functions, cognitive skills, or perceptual skills, are brain-based skills required for the acquisition of knowledge, the use of knowledge, and thinking. They are more closely related to learning, remembering, and solving problems annoyingly attention, rather than using real knowledge. Comprehension skills or activities include the areas of perception, attention, memory, reading, decision making, and language skills. Essential skills that your brain uses to think, read, read, remember, think, and concentrate. Working together, they capture incoming information and put it into a bank account for daily use at school, work, and health.

Each of your mental faculties plays a vital role in processing new information. That means that even if one of these skills is weak, no matter what kind of information comes to you, holding, storing, or using that information is affected. Many learning struggles are triggered by one or more weakened thinking abilities.

Computer Skills- Computer skills are the knowledge of the applicant and the ability to use computers and related technologies effectively. Today, employers are looking for people who know how to use the latest technology to increase productivity and direct work processes. For example, employers expect an applicant from a marketing background to have experience in using different presentation software.

Generally, there are two categories of computer skills: software and hardware:

Software skills: help you use computer-related applications, tools, and programs. Often, employers do not refer to computer skills in the job description because these are general skills and requirements for multiple jobs. For example, employers want applicants to know word processing software like Microsoft Word.

Hardware Skills: Demonstrates your ability to use and operate a computer. It can be turning on and off the computer or connecting the USB to the CPU space. Improved computer skills include repairing broken devices, connecting various virtual machines, network configuration, and cloud management.

Here is a list of key computer skills:

1. Microsoft Office
2. Social media

3. Graphic design
4. Presentation software
5. Computer program
6. Communication and collaboration tools

Lesson Plan- A lesson plan is a teacher's description of the details of a teaching course or "learning curve" of a subject. A daily lesson plan is developed by the teacher to facilitate classroom learning. Details will vary depending on the teacher's preferences, subject matter, and student's needs. There may be school-approved requirements for the program. A lesson plan is a teacher's guide to conducting a particular lesson, and it includes a goal (what students should learn), how the goal will be achieved (method, process), and how to measure how well the goal has been achieved.

Traditional method- Traditional teaching methods are a thing of the past where teachers are the administrators of the classroom where they teach and take full care of the learning environment. All the duties and powers are the responsibility of the teacher and they, as the teacher in the classroom, play the role of the student-teacher and decision-maker in deciding what to teach and how to teach. For teachers, students come to the school to get the information and knowledge they get from the teachers. Teachers are a major source of information for teaching students and passing on knowledge. However, over time the teaching methods have changed but the main purpose remains the same, that is, to teach.

1.7 Delimitations

1. The population is restricted to two classes only.
2. Location is restricted to the urban area of Bhopal.
3. The study is limited to the topic 'INTEGERS'.
4. The study is limited to one school only.