**The use of Electronic Gaming in Education**

**Introduction**

The area of simulated worlds focused on games and play as a new field in education and science technologies is speedily increasing (Dede et al, 2005; Shaffer, 2006). If we consider this technology to be successful in helping students learn new, complicated skills and knowledge, Its design should concentrate on learning and the role of our cognitive architecture in solving problems and learning (Kalyuga and Plass, 2009). Play is a major factor for the growth of healthy children, especially the advancement of literacy (Ginsburg, 2007). Kids learn by playing imaginatively (Zigler et al, 2004). Since computer games can offer an ability to play in virtual environments, these games are not inherently a diversion from learning, but can be an important part of learning and academic growth (McClarty et al, 2012). According to (Salen and Zimmerman’s, 2004) "Digital game is a "environment in which players participate, specified by rules, in artificial confrontation, resulting in a quantifiable outcome. A health-oriented immersive electronic game has the power to stimulate conversation about a health disorder with peers, families and doctors, make kids speak to people about their own illness while they may otherwise want to hide it, and inspire them to seek assistance and guidance. The persuasive parts of electronic games are significant for health education since youngsters are not generally keen on finding out about self care (Brown, 2001). Electronic games are much more versatile than conventional on-site training events, since they can be included in the services, place and time schedule of learners, making them more scalable (Diehl et al, 2017). Electronic games offer many possible educational advantages, and these games will enhance the awareness, abilities, attitudes and behaviors of young people with respect to health and physical activity (Papastergiou, 2009).

Computer and Video gaming (herein after collectively referred to as 'electronic games') are a very popular free-time hobby among children and adolescents (Mumtaz, 2001; Nippold et al, 2005), And these games seem to have a popular role in young people's culture. In addition, interactive games are rapidly attracting the attention of educationalists. In particular, it is assumed that the intrinsic encouragement exhibited by young people towards video games could be combined into what is called 'digital game-based learning' with educational content and objectives (Prensky, 2001)

**Research Questions**

The research questions on which the review paper has been based are:

• Why electronic gaming is used in education?

• What are the advantages of using e-gaming in education?

• What are the dis-advantages of using e-gaming in education?

**Discussion**

**Different reasons to use electronic gaming in education**

Play, especially the advancement of literacy, is an important factor for the development of healthy children (Ginsburg, 2007). Children learn through innovative play (Bodrova & Leong, 2003; Zigler, Singer, & Bishop-Josef, 2004). Games are often designed with simple objectives that offer instant feedback (Dickey, 2005). This encourages players to adjust their game to maximize their success and accomplish their goals. Games teach by fostering competition, experimentation, exploration, creativity and transgression. Most of the learning takes place by participation in game teams, when what they have learned is passed on to the other players by the most gifted players (Squire and Jenkins, 2003).

The usage of thevideo game resulted in a transition from a traditional teacher-centered learning atmosphere to a student-centered environment in which students became much more active and dedicated. Also, the teacher has developed delivery techniques based on his prior experiences, using the game to increase the emphasis on learning (Watson et al, 2011). Videogames have the ability to engage children in learning experiences, leading to the rise of "edutainment" media. It is only by researching children that it becomes very clear that they prefer this mode of learning strategy (Griffiths, 2002). And though, for social purposes, there is a restricted application of this kind of game today. Since most parents try to discourage their child from playing games to pass their time. However, for serious games, they would not have the same reaction if they are confident of its usefulness (Darwesh, 2015).

Digital game-based learning is a modern approach in the field of universities and lifelong learning, and gaming is becoming a new type of immersive content worth exploring in the changing educational climate (Pivec, 2007). Its effectiveness in attracting large numbers of remotely located participants has led to the use of multiplayer online role-play game techniques by early study initiatives and military training organisations as a way of engaging and maintaining large remotely located learner groups and promoting shared learning targets and 'practice communities' (De Freitas et al, 2009).

Digital gaming programming is targeted at those with an interest in games and education, including lecturers, creators of education, practitioners of e-learning and scholars. It provides theories to support the guidance and examples given, the key objective is to encourage people to apply the concepts of game-based technology learning to enhance student experience (Whitton, 2009). When playing video games, the way people track their mental, affective, and behavioral processes contributes to their ability to cope with the onslaught of information required by computer games for their mastery. In the gaming environment, the game responds when a player speaks, causing the player to adapt and reply. Video games' versatility, adaptability and interactivity are exceptional because they enable self-regulatory mechanisms by their inherent existence (Zap and Code, 2009). When bored, depressed, or anxious, there is a connection between the level of play and the self-reported frequency of play. Electronic gaming is one of the easiest places for students to relax and socialize (Wack et al, 2009). In nursing education, video games are related to improving decision-making. Demand for the nursing profession to make clinical choices regarding patients under strict time-restricted circumstances contributes to confusion and risk (Ebright et al, 2003). Videogames encourage nursing students to practice decision-making in a healthy, practical, virtual environment, promoting decision-making experimentation and the opportunity to take chances without the fear of real-life outcomes that cannot be replicated for safety, cost and time reasons within the real world (Kato, 2010)

**Advantages**

By not only assessing general knowledge and abilities, but also preparing individuals for potential learning, games help us to enhance the analytical skills needed in the 21st century (McClarty et al, 2012) Gaming introduces imaginative ways to promote the formative process, which is the mechanism by which learning about students' abilities and skills is used to direct future instruction (Heritage, 2010). Games are successful in integrating students and making them an involved participant in their journey of schooling (Winn, 2009).

Centered on the needs of the students, games can also be modified. Reasonable scaffolding by the use of levels can be given in games. Scaffolding, for example, is integrated into the science mystery game Crystal Island by encouraging students to maintain track of the data they have obtained and the theories they have drawn (Ash, 2011). By incorporating graphics, such as navigation maps, other scaffolding can be achieved, which can reduce a player's cognitive burden while playing the game (O’Neil et al, 2005). When new ideas are implemented as a natural learning progression, games often address students' particular training and learning needs. Progress in learning is often defined as the direction taken by learners to acquire a range of information or skills. However, well-designed games enable learners to develop and build the most effective modes of playing and teaching for them, which in turn leads to a more involved involvement in learning (Klopfer et al., 2009).

An significant differentiation when determining the educational use of computer games is the various titles used. The first, most evident type, is school video games for users, often referred to as edutainment. Edutainment relies on teaching the player these core skills: especially arithmetic, spelling, problem-solving, and other basic skills (Facer et al., 2003). The second category is made up of commercial entertainment titles used fairly haphazardly for school. This rarely focuses exclusively on one subject, with the exception of essential ability. In this category, advertising video games are SimCity and Civilization, the titles used by several universities (Kirriemuir & McFarlane, 2002). Students Learning through computer games find the experience motivating and desire to play the video game again (Noble et al, 2000).

The visual patterns, speed and storyline that support the creation of basic skills for children were provided by videogames. Any of the medicinal effects highlighted by Demarest were**: Language skills** This included playing videogames that could enable to (i)speak and communicate, (ii) following directions (understanding prepositions etc.), (iii) giving guidance, (iv) answering questions, and (v) exchanging visual aids with others about a discussion topic. **Simple math skills** These included videogames that promoted simple math skills as kids learn to communicate with score counters for videogames. **Simple readindg skills** This included the character dialog in video games that are written on the computer ('play', 'quit', 'go', 'stop', load 'etc.). **Social Skill** Videogames offered an attraction that was popular with other youngsters, making it so much easier to chat and play together(Griffiths, 2002).

Perhaps, unlike any other learning advancement, what is most special in interactive gaming is the mixture of inspiration, interaction, adaptation, gameplay, teamwork, and data collection that can not be done on any other scale (Shaffer et al, 2005). Based on the actions of students during the game, student skills and deficiencies may be inferred. (Kickmeier et al, 2008) describe ELEKTRA, a European Commission-sponsored initiative. Knowledge from the actions of the players (e.g., turning on or not turning on a light switch) is constantly aggregated over the course of game play to create an updated representation of the abilities of the players based on the cumulative game actions. The promotion of mathematical skills has also been associated with video gaming (Ormsby et al. 2011; Steinkuehler and Williams, 2009), in order to encourage mathematical ability and foster positive attitudes towards mathematics by reducing mathematical anxiety (Van Eck, 2015). Mathematical learning is enriched with the use of video games, and essential abilities such as problem solving and reasoning are further developed (Calvert and Wilson, 2009). In two categories, the advantages of playing video games for mathematics are outlined: the first includes skills (counting, space exploration, problem solving, calculations, etc.), and the second focuses primarily on logical thought and learning processes that are equally important for the growth of mathematics (Fregola, 2015).

The other advantage of e-gaming is that it encourages kids to improve their ability to learn (Gee, 2005). Researchers in the field of electronic games agree that "new literacy practices" focused on "co-construction, collaboration and active participation" should be facilitated by immersive games (Steinkuehler, 2010; Wohlwend, 2009).

**Disadvantages**

The efforts to develop educational games have not yet reached colleges. There are many theories for this. First one, not all teachers and parents are assured that educational games will be helpful to students. Second, the consistency of the existing academic games is questioned (Virvou, 2005).

But one of the foremost motives we do now no longer see more instructional video games that appearance and sense like business video games is that many designers do now no longer apprehend how video games combine studying and content material seamlessly at some stage in the game. From the outside, it appears as though video games don't have any content material due to the fact all we see is play (Van, 2009). The summary of the wider world of video game learning is somehow warped. Some of the issues reflected in these overviews within the field are: The lack of distinction between various methods of learning through the use of video games ( de Freitas, 2005), Underdeveloped concept for promoting video game learning (Kirriemuir & McFarlane, 2003) Poor theoretical understanding of video games (Mitchell & Savill-Smith, 2004) Insufficient use of previous literature owing to the difference in terminology, Place of publication, and research contexts (Squire, 2002).

Throughout the year, scholars and educators have acknowledged that there are a variety of very simple issues in the use of games in general, and video games in specific. Those commonly mentioned first relate to the limitations inside an academic setting, for e.g. differences in student game skills, implementation, costs, and time for teacher training. Moreover, the interpretation of computer games also impacts the learning process. The instructional use of computer games is viewed with skepticism by both students and teachers. A new research reveals that students may be unable to engage in computer games based upon the skepticism. This is in stark contrast to the traditional concept of all students enjoying video games (Egenfeldt-Nielsen, 2004; Gros, 2003; Hostetter, 2002; Squire, 2004).

**Conclusion**

The use of electronic games in education has grown significantly in recent years (Mayer 2014; McClarty et al. 2012; Tekinbas 2008; Young et al. 2012). Students now a days much more comfortable with technologies. They pay more attention during playing attention, this attention can be used in positive manner. Using e-gaming educators can reach to a large number of students who staying different places at a single point of time. E-gaming can help to build one person’s cognitive, affective, and behavioral approach. E-gaming is changing the traditional way of teaching to collaborative way of learning. Although there are resistance against the implementation of e-gaming in education but once people understand the benefits of it, they will gladly accept it. It improves communication skill, social skill, mathematical skill, managerial skill and many more. However e-gaming still yet to reach many educational institutions. Many people still not clear about how to use e-gamming in education, as a coordinator of this what kind of training or skill one faculty should have. To implement this not only students, teachers must have latest knowledge of required technologies. But one thing is sure to make a student good team player, to enhance their competency level educational institute have adapt this 21st centuries new technologies in their curriculum module. Forms, methods, and techniques of electronic gaming in education require further justification.

**Future scope of the Study**

The future study should be focused on the impact of electronic gaming in education, further research might be focused on different types of electronic gaming that has impact on students. In-depth analysis is required on the proper application and reliability of electronic gaming in education.

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