**INTRODUCTION -Computer Game Assisted Learning**

In higher education numbers of opportunities are being provided by serious computer games for complex skills learning. The developers of such games contribute their large efforts in order to make them interesting and full of knowledge. In current scenario, computer games developer companies are launching different type of games in action, sport, strategy, puzzle, etc. The increasing use of the internet is also connecting users to these games easy. If is asked to students to choose between studies and games then a big part of them will go with games. The reason is very simple people like to do interesting things and playing game is obviously more interesting rather than reading a book for a student. A game can help in developing different complex skills but on the other hand it can also waste a big amount of time and energy. So the impact of a game either can be positive or negative depends on the game itself.

This present report is going to disclose the positive side of gaming in the use of computer assisted learning. This research paper will discuss about the use of computer games for learning point of view, what kind of games can be used for learning and how effectively computer assisted learning systems can be used. The purpose of this report is to analyze the effect of computer games in use of computer assisted learning in higher education.

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**Game based learning (GBL)**

The paradigm of utilizing the game as a medium for assigning the learning contents is known as Game Based Learning (Tan, Ling and Ting, 2007). GBL is all about fulfilling a specific purpose such as developing new skills and knowledge by leveraging the power of computer games to engage and captivate users. It can also be defined as the application for engaging users in a computer game and provide learning experiences in order to develop specific outcomes in the form of experiences and learning goals. GBL is adopted by various sectors such as manufacturing, computer technology, retail, higher [education](https://www.dissertationfirst.co.uk/education-dissertation-topics), telecommunication, financial, hospitality, pharmaceutical, healthcare and public departments.

The four major independent factors are defined by Garzotto that contribute to the educational effectiveness of a multiplayer e-gaming experience: First is content that includes goal/target appropriateness, scaffolding, media matching, extensibility and integration. Second is usability including interface and ease of use, next is enjoyment which is defined by clear goals, challenges, concentration, immersion and feedback, and the last is the social interaction that is derived through cooperation, connection and competition (Garzotto, 2007).

**Game Based Learning in Higher Education**

Introduction of games into the classroom has become one of the hottest trends in education evaluation. In current scenario, numbers of colleges are using this paradigm of learning through computer games. Computer games are interactive multimedia with dynamic elements that under the control of the user (Ma, Williams, Prejean and Richard, 2007). Computer games can help in developing different skills easily; such skills cannot be developed so easily by any other method.

**WHAT TYPE OF COMPUTER GAMES CAN CONSTITUTE AS A COMPUTER ASSISTED LEARNING SYSTEM?**

As stated above, in the current scenario different types of games are being developed, facilities like internet is making it so easy to get any new game and enjoy it. A number of educational purposes are fulfilled by computer games. Some games are specially designed for some specific purpose and other has their own secondary educational values (Barab, Thomas and Tuzun, 2005). In educational environment all types of games can be used for giving a practical touch to bookish knowledge. Some educational games are specially developed to provide specific learning outcomes such as solve critical puzzles, develop strategy to complete a particular level, to take utilization of available resources. Games also provide learning about leadership qualities such as how to lead a team, how to take utilization of a strong player with specific skills and how to achieve a goal within a fixed time frame (De Freitas and Oliver, 2006).

Every game provides some specific learning outcomes, it depends on players that how would they adopted them. The major types of computer games are given below with their possible learning outcomes for a student:

* Board games: Such games involve counters that move on pre-marked surface according to predetermined rules. These games are completely based on strategy development, better the strategy higher the chances to win. Such games help in developing strategic thinking and prediction skills (Iskander, 2008). A player tries to predict the next move of other player and make the strategy accordingly. Alphabet dice game, spelling framing, chess and tic-tac-toe, backgammon and scrabble are some of the well known board games.
* Card games: Various card games can also be played on the computer as in multiplayer mode with the help of internet or as a single player. Card games are also based on strategy and luck. Holding the right card till the end can take you to the victory same like holding a right employee or resource can take a leader to heights of success (Millyard, 2013). Skills like making the best combination with available resource are developed by the help of card games. Games like Bridge, Blackjack, Solitaire and Casino are the examples of card games.
* Puzzles: In such games the player tries to figure out of a solution for the victory. It involves learning how to use different tools, navigation, solving enigmas reconfiguring of objects. Some of the puzzle games are Tetris and Mastermind and Tetris.
* Maze: The successful navigation of a maze is required in such games which can be viewed in different ways. Mazes can be viewed in different ways like they may appear in a first-person perspective such as in Doom or an overhead view such as in Pac-Man. This leads the player to a quick decision making (Rettberg and Bobda, 2005). The player has to choose the right side by analyzing the track of rivals.
* Fighting: Fighting games teach about finding the weak position of opponent and attacking there. Same like in the corporate world, finding the drawbacks of competitors and taking the advantage of them. It also includes collecting the power and attacking on the right time that leads to victory. Like holding your resources and take the use of right resource on right time. Fighting games include Avengers, Street Fighter, and Body Slam.

**ARE COMPUTER GAMES USED FOR EDUCATIONAL PURPOSES?**

A number of researches have been conducted to know the role of computer games in education. Most of them found that computer games play an essential role in the development of basic learning skills that directly and indirectly help the students in their learning (Lewis, McGuire and Fox, 2007). As stated above, every type of game has something to learn from that but again it depends on player to adopt those skills in their practical life. A big part of these computer games are developed after an in-depth research and learning is also an essential element that has to be taken cared by developers. Most of the people found that computer games can vastly help in developing skills and learning and the result can be seen in the form of increasing digital study. In digital studies teachers use different puzzles and calculation games to make the learning easy and interesting (Mayer, 2012).

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**Drawbacks of computer games**

Computer games have so many positive points to be used for educational purpose but at the same time it also has a dark-side (Richardson and Thies, 2012). The biggest drawback of computer games is addiction. Another one is negative effect of health and time consumption.

* **Violent computer games**: Many computer games including action and fighting games have the integral features of violence. Not all games are created for educational purpose and such games include various features, which makes the player more aggressive. The effects of such computer games appear to be cognitive in nature. Playing such games for a short duration provides the skills like problem solving and strategic thinking but continually playing such violent games make long lasting negative effects. As the player learns and practices the scripts related to aggression it becomes more accessible them to use when situations like game arise in real life.
* **Psycho-social issues**: Many computer games are associated with psychological as well as social issues. The study by Bosworth found that when it comes to risk-taking behavior such as alcohol and drug abuse, game users are no more likely than non-game users (World Resource report, 2011). People likely to report more depression who felt games were important. Excess use of something starts to give negative results so as in computer games. Playing the game for a limited time with having a learning attitude can help in developing the skills but on the other hand playing a game for hours start to give harmful results.

**HOW EFFECTIVELY ARE COMPUTER ASSISTED LEARNING SYSTEMS USED?**

The advancement of technology provided a higher platform for computer games. Computer games are now easily available with better graphics and sound quality which gives the player a real life experience. While playing a game on latest system with high RAM and graphic card provides an amazing experience to player (Dickey, 2005). As discussed above that real life practice gives better learning rather than a bookish knowledge on the other hand changing technological world providing this experience like real life on computer systems. So, the overall learning from computer games becomes equal to real life experience.

If an individual doesn’t carry a learning attitude then computer games are just a medium of entertainment but in the presence of learning attitude these computer games can help in developing all those skills that can help in real life practices (Garris, Ahlers and Driskell, 2002). Skills like:

* **Motivation**: Computer games can help in motivating the individual. Knowing the right solution of a problem always motivates the individual. In order to get higher points or rewards player make their full efforts that actually help him in examining their interpersonal skills. The player tries various strategies and solve different puzzles to complete a game within fix time frame helps him in knowing own skills of problem solving. The individual can easily identify their positive points with the help of game that also motivate him in real life practices (Prensky, 2006).
* **Strategic thinking**: Strategic games like, age of empire and call of duty help the player in developing their strategic thinking. In order to get the victory the player need to beat their opponent by making greater strategy. Games like chess and poker help in developing prediction skills. On the basis of last unsuccessful attempts the player can predict the possible moves of the opponent make a strategy and take the actions accordingly. In real world too after an unsuccessful attempt individual need to frame a stronger strategy on the basis of possible situations. Forming a strategy is never a solution if it is not implemented to real life practices (Kiili, 2007).
* **Problem solving**: It is essential for a student to develop their problem solving skills as in the corporate world a number of problems will need to be solved on a daily basis. Various puzzle games help in developing such skills. While, not finding a way out in the game the player needs to hold for a while and think about possible reasons. It is common in many strategy games that a user cannot get victory just because a small loophole this indicates to give importance to every element either it makes a small effect or large.

**Increasing the effectiveness of Computer Assisted Learning:**

In current higher education system, the use of computer assisted learning has become very common. Easy access the information and different tools to make learning easy are the key forces behind this new trend. The outcome of a system depends on its performance. While using a system for learning purpose user should make sure that their system has enough capability to perform a task. For example, while going to install a game or software, user should make sure that there are enough free space in their hard drive, the RAM is capable enough to run the game properly and the graphic card is going to support it.

There are four major points that can increase the effectiveness of a computer based learning course:

* **Simplicity**: The computer based learning can be used for so many educational purposes so it is very important to keep the system as easy to use as possible. None of the student or teacher will be able to concentrate on their goals if the system is awkward to use. While trying to learn something from the computer it is very important that the system works properly. The icons and introductions should be simple so that the use does not distract from their major subject.
* **Clarity**: As stated above while using a computer for learning purpose teachers should make sure that all the required material such as software’s and additional hardware are available. The applications should be clearly visible to the user and should also contain clear round of training (McFarlane, 2003). While dealing with multimedia there are huge possibilities to be carried away from the main subject so the learner should have their clear purpose. While using a system, careful considerations must be taken so that the main content that teacher wants to deliver does not get lost behind the technology. Teacher should use the technology just as a tool, which helps in learning and nothing more than that.
* **Robustness**: It may be possible that in different situations, different people use the same system so it should be taken care that the system should have capacity to run in different situations without crashing. This can be done by updating the system and their hardware on regular bases and extensive testing. Maintaining the system updated will facilitate smooth running of applications and fast access to data (Ahmed, 2000).

**CONCLUSION**

A number of games are being launched on a daily basis and a huge part of youth plays these games for a long time period. In such circumstances if the games are converted into source of learning then it will be a comprehensive change in the educational world. There are a number of games that actually develop different skills in player but it depends on player that how he adopted all these skills into their real life practices.

On the basis of above discussions it can be concluded that using games for computer assisted learning have their own positive as well as negative effects but these negative effects can be reduced by maintaining certain limits. Computer games can provide the easiest path to develop the various skills in an individual. If the player is able to focus on their major purpose of the game and have the learning attitude than computer games can be the best teacher.

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