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Game Based Learning: Preparing Students for a Digital Future

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Abstract

Games have been used as a learning tool for centuries. The core concept behind game-based learning is teaching through repetition, failure and the accomplishment of goals. Games that are planned and designed well will offer enough difficulty to keep it challenging while still being easy enough for the player to win. Game-based learning takes this same concept and applies it to teaching a curriculum. Students work toward a goal, choosing actions and experiencing the implications of these actions. They actively learn and practice the right way to do things. The result is active learning rather than passive learning. This article discusses the concept, types, and characteristics of game based learning. Also it explores the various digital games platforms so that the teachers could use for their teaching learning process which in turn the make the active participation of the learners. More over it explains the advantages of game based learning so that teachers can use to monitor their students and provide skill based learning.

Introduction

Games engage the students actively and lead to expertise by gaining professional skills and acquire innovative thinking. On average, young students need to spend 7 hours a week on playing games (Forbes, 2019). Therefore, it is very crucial to motivate and

engage young learners into learning activities by transforming the traditional teaching methods such as lectures and written materials in games that seem to attract their interest. These games use both physical and virtual words and symbols through which students can experience the concrete facilities that these words describe. In that way, students can understand the complex concepts in a easy way.

Game Based Learning (GBL) is a learning methodology which is designed using games in order to achieve a specific learning outcome ((Shaffer, Halverson, Squire, & Gee, 2005).In game based learning the characteristics and principles of the games are embedded within learning activities which provide new learning opportunities to the students. These activities involve team collaboration and competition, communication, creation, systems thinking, critical thinking and problem solving and enhance 21st-century skills (Denning, Flores, & Flores, 2011).Game based learning activities promote student engagement and motivation to learn. It is a vigorous learning technique where games are used to enhance student learning by completing series of activities (Fu et al., 2006; 2009).Game-based learning is the use of game elements, game thinking, and game mechanics in non-game contexts to engage users in an activity (Tu et al., 2014)

Role of Game Based Learning in the Teaching Learning Process

Game based learning (GBL) is the one of the learning techniques in which learning activities are designed using physical games as well as digital games like simulations or role playing to create learning experiences that can engage students actively to learn classroom content. This process includes elements of

competition, engagement, and immediate reward. Fu et al., (2009) stated that GBL is a teaching method, which gives the opportunity to the teacher to attract the interest of students beneath different parts of games, in order to make them learn and assimilate specific skills in real situations. Learners can compete with each other and collaborate in order to be motivated to achieve a specific goal and succeed high scores. Then they receive immediately feedback and rewards. The psychology behind the game based learning allows students to enjoy the learning process especially with the use of these materials. It's main concern is not just the use of games for students to play, but introduce information gradually and guide the learners to reach the desired goal. The traditional games contain the rewards, contests, challenges that becomes of great importance even in higher education.(as cited in Pho, A., & Dinscore, A. 2015)

Game-based learning is an innovative approach that uses both physical and virtual (computer) games which offers educational value to succeed teaching enhancement, assessment and evaluation of learners. It can be accomplished with digital or non-digital games and may include simulations which will enable students to expertise the learning first hand. Physical games can be our usual game it comprises of physical play activities. Integration of computer based games into a learning environment is called digital games. The digital advancement made paradigm shift in learning methodologies in which learning activities are designed with interactive digital games with defined learning outcomes. Digital game based learning is designed to balance contents to learn with digital game play, as well as with the ability of the learner/player to understand, retain and apply that content matter to the real world. Digital games refer to a pedagogical method or

approach that integrates digital games as educational tools (Prensky, 2003; Van Eck, 2006, 2015). Digital Games is a learning and teaching approach that utilizes digital games/game-based environments to create intriguing, engaging, entertaining, and challenging activities with the goal of achieving learning objectives and producing learning outcomes that can be objectively measured (Coller& Scott, 2009).

Prenski stated that games are a combination of fun and play, a significant force that enables engagement between games and their player. And furthermore, Prensky proposed six fundamental structural elements of games comprising:

i. Rules
ii. Goals and Objectives,
iii. Outcomes and Feedback
iv. Conflict or Competition
v. Challenges or Opposition
vi. Interaction
vii. Representation or Story.

Game-based learning can take multiple forms depending on the needs of the classroom. These may include such formats as:

- board games
- card games
- word games
- video games
- simulations
- role-playing games
- puzzles
- digital games

Principles of Game Based Learning

The following are the principles of game based learning. (Oblinger 2004) such as:

- individualization
- immediate feedback
- active learning
- motivation
- social
- scaffolding
- transfer of learning
- assessment

The Characteristics of Games-Based Learning

- Games should motivate and engage the learners
- It requires participation from learners
- has clear learning objectives
- It is reflective and transferable to the real-world experience
- provides freedom to interact in the game
- provides feedback
- both assessment and lesson can take place
- It should be matched with learner's pace and intellectual ability.

Digital Game Based Learning Platforms

Game based learning platforms are designed to increase learner engagement and productivity by incorporating gaming elements into the training strategy. The following are the Digital Game Based Learning Platforms

i. **EdApp**: It is a game based learning platform that integrates different engagement elements to help you increase course completion rates while ensuring an effective learning experience.

ii. **Kahoot**: It is a game based learning platform, which uses visually appealing gamification elements like interactive games and quizzes to maximize engagement and ensure higher completion rates among learners.

iii. **Gametiz**: It is a game based learning platform that enables learning and development, talent acquisition, and other skills using flashcards, quizzes, and interactive challenges.

iv. **Centrical**: is a powerful gamification training software that allows designing gamified micro-learning content? In this platform learners or teachers can design learning challenges, set prize-winning competitions, or design quest-based games to help the learners to adopt the right behaviors, practice skills in a risk-free virtual environment, and improve the overall knowledge and skills they need to succeed.

v. **Archy Learning**: It is an eLearning platform where teachers can upload classroom notes, PDFs, and other digital resources for their learners and can design course quizzes, mixed media exams, homework, interactive video modules, and personalized games. Course certificates are also available to motivate learners to complete their lessons.

vi. **Raptivity**: Raptivity is an interactive eLearning platforms used to design engaging and visually stimulating online

learning materials. The tool features a growing library of pre-made responsive interactions,interactive quizzes, games, simulations, flashcards, and brainteasers through the tool's user-friendly interface.

vii. **ProProfs**: This is a Learning Management System which provides blended learning solution. This LMS enables to create new educational content made from scratch or, existing courses from its online training course library. It featuresgamification elements which include brain games, learning paths, and quizzes. Moreover learners are given the opportunity to learn at their own pace and also foster collaborative learning through virtual classrooms

viii. **GoSkills**: GoSkills is another online on-demand training tool which contains daily streak and time-tracking goals.

ix. **Hurix Digital**: Hurix Digital is an end-to-end digital content solution provider integrating different content creation and delivery platforms designed for modern-day learning. Among these platforms is a custom LMS that enables organizations to deliver training content through

x. **Quizlet:** Quizlet is an online quiz maker that is well known for its flashcard format. Its game-show style content can be used in educational settings

xi. **Gimkit:** Gimkit is a game based learning platform in which learners are exposed to questions multiple times to ensure mastery of the content. Students can make use of game mode lessons and assignments more interactive and engaging way.

Significance of Games

James Paul Gee has long been the standard bearer for identifying the usefulness of games for producing effective learning experiences. He has identified numerous principles of video games that make them ideal for education. Some of these include (Gee, 2005)

i.   reinforce concepts learned in class,

ii. create greater engagement with course material

iii. provide multiple methods of approaching course material

iv. provide interaction among the learners

v.   develop risk taking behaviour by allowing the learners to try different approaches to problem solving

vi. Learners have an ownership in the outcomes and course of the game.

vii. games present problems in a way such that the difficulty level of what the player must solve starts at an easy level and becomes progressively more challenging

viii. Provide situated meanings as all knowledge and experience is connected to the context.

ix. All the learning is connected to the entirety of the system as there are no parts that exist in isolation

x.   Learners taught skills that they use at a low level and practice over and over again until they achieve mastery at these skills.

xi. Build empathy. By communicating and working together, learners build empathy through their avatars by raising awareness of local or global goals.

Advantages of Game-based Learning

i. In game based learning students participate actively so the learned materials can retain forever.

ii. Game-based learning help students solve problems by fostering skills like understanding causation, logic and decision making they can use in life outside of school.

iii. It encourages critical thinking and provide opportunities for guided reflection.

iv. Increases student engagement and motivation

v. Addresses special education needs of the learners

vi. Game-based learning creates a positive environment, and generate academic success.

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