# BRAINEER'S ACUITY: A Game Based Learning using interactive activity frameworks

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**Abstract -**A platform for real learning from online knowledge sources is called an e-learning. It teaches pupils how to acquire knowledge more quickly and effectively. It makes it possible for teachers to look up numerous topics quickly. Additionally, it aids in the long term preservation of their web materials. They have access to a facility where they can keep the items they searched for in folders. A game based learning will give a better environment for the students to learn things in a better way. It includes all the activities of pedagogy, quiz, score, awards etc which will make the students enthusiastic. Learning shouldn't be boring, and it shouldn't only be rote memory exercises where pupils memorize information or study for tests. In order to raise student achievement, teachers can benefit from the vitality and creative thinking that technology-enhanced learning offers.This game based learning website aims at providing better environment for the students to learn algorithms in the better and faster way. In the past, most firms could not afford game-based learning environments. The traditional design, development, and deployment processes for game- and simulation-based learning systems often involved mainframes, specialized interface technology, and years of works.The website contains the various algorithm based games and provides unique identity for each student which they can make use to learn things. Taking into consideration that students consider video games as non-essential part of learning, they provide better environment to learn the difficult algorithms in the easiest and efficient way. Level of interest, motivation and innovation are positively valued. Future developments include more user-friendly game production, with more realistic approach of concepts.

*Key Words***:** game based learning ,e-learning

## 1.INTRODUCTION

Teachers struggle to prepare pupils for learning a new culture that our virtual world forces upon us, forcing us to reevaluate the goals of education. According to our perspective, which is that of We must adjust to this transition by developing training activities that incorporate the greatest possibilities and strategies for a successful acquisition of both teaching skills and those necessary to deal with issues and situations in the digital world.

Existing websites which are supporting game based learning have majorly targeted on primary students. They provide them certain games useful for calculations and science through which primary students can learn the concepts easily. We are aiming to provide games for undergraduate students which they can use it to learn the concepts and algorithms in a simple and effective manner .Teachers can also login to the same to check the progress of the particular student by checking the score cards.

Throughout the process, students gain the necessary information and skills. In terms of game-based learning definitions, the narrow sense relates to the application of games, particularly video games, to learning, whereas the wide sense refers to the application of games or game components, concepts, or designs to learning. Teachers and students will confront challenges and hurdles as they implement project-based learning. Inadequate activity time, inexperienced teachers, too many students in class, and students lack of team experience and interest in subjects, for example, all contribute to the challenges of adopting project-based learning. Many academics have demonstrated that game-based learning can boost students learning motivation, involvement, engagement, and so improve the learning effect.

## 2. RELATED WORK

This section contains the several characteristics of game based learning and explains the recent development in the same field.

### 2.1  Assessment For Game Based Learning

The paper[1] written and published by Dirk Ifenthaler , Deniz Eseryel, and Xun Ge mainly aims on providing the assessment for game based learning. While evaluation of learning in a game-based setting frequently concentrates on the results, it may overlook significant changes made during the learning process. As a result, instructors and teachers can only compare a student's outcome to past results or to those of other students or experts.However, this assessment method does not provide inferences about the reason for a potential wrong outcome.
This work majorly lags the scorecard which we have implemented in our website, as our website is student friendly students can get there score progress and score instantly.
Through which teachers can also monitor the progress of individual student .

### 2.2 GBL – A Review On The Effectiveness Of Educational Games

implemSylke Vandercruysse, Geraldine Clarebout , Mieke Vandewaetere proposed " A Review On The Effectiveness Of Educational Games"[2].Regarding this research area, a few general statements are necessary. Firstly, in future studies,

more focus should be placed on providing clear and thorough descriptions of the ented games and the various game aspects. Furthermore, over generalization is a mistake that is made in many studies.Conclusions may be overly ambitious since improvements on a post test are frequently mistaken for actual learning gains.

The limitations of their own research are highlighted by certain researchers who are aware of this generalization problem.These conclusions should be remembered since they are far more modest and cautious. It is challenging to pinpoint the precise elements that contributed to the latter case's findings. Additionally, we need to take into account that not all writers have the same level of understanding of this conventional setting given that game-based learning research is undertaken in many nations.Finding the precise factors that contributed to the findings in the latter scenario is difficult. Additionally, considering that game-based learning research is being conducted in different countries, we need to consider the fact that not all authors have the same level of awareness of this typical environment.

### 2.3 GBL And Gamification in Initial Teacher Training in The Social Services

Ramón Cózar-Gutiérrez1* and José Manuel Sáez-López2 proposed "GBL And Gamification in Initial Teacher Training in The Social Services: An Expert Experiment with MinecraftEdu"[3].The paper mainly tells about how Teachers face a difficulty in preparing pupils for the new culture that our virtual era has imposed on learning, and it challenges us to reconsider what the purpose of education should be. It focuses on providing the training to teachers about the importance game based learning in the future. Game-based learning is defined as the use of games to improve learning while balancing the relationship between material and gameplay and their application in the real world. Numerous research concur that playing learning Playing video games is linked to significant gains in increased motivation, and enjoyment. A rewarding performance component, the use of edutainment, the learning or use of problem-solving techniques, socialization and cooperation, improved focus, personal autonomy, and intimate teacher-student interactions are all beneficial. are just a few of the educational learning processes list as favoring the inclusion of the game in classrooms.

### 2.4 What's the Difference Between Gamification, Serious Games , Educational Games and GBL

Katrin Becker gave the difference between gamification, educational games and serious games[4]. Gamification is the use of game-like elements to encourage participation in contexts and activities that are not games.The application of game aspects in non-game activities is known as gamification.Gamification can increase teacher and students engagement, increase concentration , and reduce time.Depending on how it is used, gamification may have significant drawbacks.A serious game or applied game is one that was created with goals other than only amusement in mind.

In general, the word "serious" is used to describe video games that are utilized in fields such as engineering, politics, emergency management, science, education, and the arts as well as the military, healthcare, and emergency management. Educational games are those that are specifically created with education in mind, as well as those that offer ancillary or secondary educational value. All kinds of games can be used in a learning environment, but educational games are those that are made to aid in the understanding of particular concepts, the expansion of previous knowledge, the reinforcement of learning, the comprehension of a historical event or culture, or the learning of a skill while having fun. Games come in board, card, and video game varieties.

### 2.5 Narrative Categorization in Digital game-based Learning: Engagement and Learning

Fredrik S. Breien and Barbara Wasson proposed "Narrative Categorization in Digital game-based Learning". Engagement and Learning[5].The DGBL improves the effectiveness, involvement, and learning are not confirmed by this study.
This is because the 15 DGBL systems, as reported in the publications and online system information, don't provide enough specific information. In addition, the descriptions of the evaluations use a variety of foci, methodologies, depths, and variations.While earlier literature reviews used in this study doesn't provide any assessment to the students for their practice,the website developed by us contains all the aspects of learning the concepts in the most effective way.

### 2.6 Research on The Mode and Application of the Combination of GBL and PBL

Wen-Dan HUANG, Jun-Jie SHANG, Rong MIAO proposed "Research on The Mode and Application of the Combination of GBL and PBL". In current well functioning learning apps or website,the main focus is on primary children[6]. Many mental and mathematical games are provided for the same. In the same ideology many learning apps are providing animated videos to educate children through which they can understand the topics in the efficient way and faster ways. The project mainly aims at providing games, based on some difficult algorithms Where a teacher may find it difficult to explain the same to their students as they are bit confusing. But by playing games by following the rules based on algorithms, followed by taking part in some pedagogy activities will help in faster understanding of the concept and improving the knowledge.

### 3. PROPOSED SYSTEM

The methodology (Fig 3.1) given shows the flow of how our project actually works. The basic idea behind the project is that we are creating a website which is extremely helpful for students. In this website students and teachers both can register themselves. After registering they can login to the website anytime to access many innovative and informational games and many features like ,
1. Students can register themselves by providing some information like the username, email, USN and finally the secured password. After this process they can login to this portal can search their requirements. Students can select particular subject of their interest and what they are willing to learn. This action will redirect to the page which contains any interesting and enthusiastic and knowledge-based games which mainly focuses on the learning of algorithm. The scorecards are maintained for each and every registered

students. They can also take part in many pedagogical activities.

2. Teachers can also login to the portal either for the purpose of learning or strengthening their knowledge or even to see the progress of their students .They can inspect the particular students progress through their score cards.
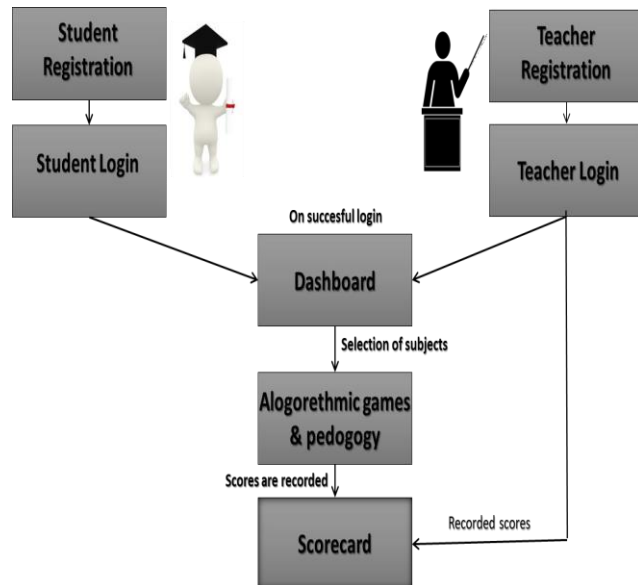


**Fig -3.1**:Proposed Methodology

### The Purpose
To provide effective and new way of learning to help students improve what they already known a little, to enrich their intelligence. Since the website extremely student friendly ,students can learn the concepts and understand the algorithms in a better and effective manner.

### Align to Standards or Learning Goals
To identify the potential benefits and challenges of Game-based learning for a student Game based learning is not something that distracts students but they need to benefited by just playing games.Testing out the game as a player. New contents can be added according to the application.

### Inform Stakeholders
To ensure that the game can be supported by the technology in the classroom and to ensure that the college administration and IT staff have approved game-based learning. Moreover, to clarify the game's purpose to parents and guardians so they understand how it supports learning goals.

### Planned Consistent Playtime
Students gain new information through the use of game-based learning. It shouldn't be tacked on as an afterthought; it should be the main focus of the lesson. To provide enough time for students to play the game each day so they can learn by just playing the games.

### Assess Student Progress
As the scorecards are provided in the website teachers can monitor their progress by loging into the site. Students can also use the same progress card to improve themselves.

## 4. CONCLUSIONS

Overall the project aims to provide user friendly games based on algorithms for students through which students can easily learn the concepts and algorithms in the efficient way.Game-based learning is a teaching method that utilizes video games or other interactive digital game elements to educate and engage learners. This method has been shown to be effective in a variety of educational settings, from primary schools to higher education institutions and corporate training programs. One of the main benefits of game-based learning is that it can make learning more enjoyable and interactive, which can help to increase student motivation and engagement. In addition, game-based learning can also help to develop problem-solving and critical thinking skills, as well as improve collaboration and communication among learners. While there are some limitations to the use of game-based learning, such as the potential for distractions or the need for specialized hardware or software, overall it has the potential to be a valuable tool in the educational process.

## ACKNOWLEDGEMENT

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