

A Study on Game-Based Learning in Economics

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ABSTRACT

This study essentially creates a game-based learning platform to raise students' self-efficacy in understanding various economics concepts. Education and games centred on economic principles are blended with game-based learning. Game-based learning is receiving increased attention as a result of ongoing e-learning. Through repeated self-study, continuous interaction, and feedback, game-based learning leveraged the course material to create an immersive and stimulating learning environment. Thus, the objective of learning economics successfully could be achieved through game-based learning. The purpose of this study is to comprehend the academic performance of students who used game-based learning to acquire economics principles. The selected Economics students in the Vellore District of Tamil Nadu were participated in this study. This study's primary obstacles include time constraints, a lack of funding, a lack of engagement from students and institutions, and difficulty translating economic concepts into game-based learning.

Keywords: Game-based learning (GBL), economics concepts, GBLE

INTRODUCTION

Game-based learning activities incorporate game rules and features. Students become engaged and enthusiastic about learning through learning activities. A 2018 systematic review on game-based learning also emphasized studies showing that "student participation in the process and a better understanding of the course content are both positively impacted by educational games." Subsequently, the quantity of studies on game-based learning has kept rising. A approach for improving student learning through active learning, game-based learning makes use of games. Here, the game's promotion of critical thinking and problem-solving abilities serves as the source of learning. Digital or analog games and simulations that give students hands-on experience with the material can be used to accomplish game-based learning.

Objectives and Methodology of the study:

The purpose of this study is to comprehend the academic performance of students who used game-based learning to acquire economics principles. The selected Economics students in the Vellore District of Tamil Nadu were participated in this study. Four groups of selected students from the study area were formed. We used several game-based learning approaches to teach students the principles of economics. This study's primary obstacles include time constraints, a lack of funding, a lack of engagement from students and institutions, and difficulty translating economic concepts into game-based learning.

Game-Based Learning and Economics

The term "game-based learning" refers to a method of teaching whereby learning activities that cover a wide range of subjects incorporate elements from games. They use fun as a teaching tool and are competitive, encouraging students to engage with one another.

The article "**7 Things you Should Know About Game Based Learning**" from Educause claims that when students concentrate on the game's activities, gaming can foster a dynamic that encourages the development of skills and competences. They have the capacity to serve as both stand alone learning exercises and an effective means of distributing material over the course of multiple sessions. In fact, there are situations in which the game's mechanics force students to compete with one another in order to set a personal record, and there are other situations in which the game may need them to work together to solve difficulties.

The FAQ, objectives, rules, challenge, and engagement can be used to engage students and improve learning outcomes, according to the UMass-Amherst Center for Teaching and Faculty Development's "The Pedagogy of Games." It offers the chance for practice and feedback, can be tailored to individualized instruction, and can foster an emotional connection between the learner and the subject matter.

Kim defines gamification as the application of game mechanics and game thinking to engage users and solve problems in her article, "Harnessing the Power of Game Dynamics." According to the author, people are more driven, engaged, and successful in games than they are in the real world, which is why games can aid in learning. Furthermore, the author claims that game dynamics have the potential to increase user engagement with library materials and facilitate faster and more efficient problem-solving by users.

Toccura Porter states in their essay "Games and Activities: Aletnative Foundation for Library Instructional Learning" that anytime a game is introduced into the classroom, the educational objectives that must be met should be taken into account.

Additionally, he says that games are an emerging medium that are crucial to the growth of the present generation and that the educational emphasis in 21st century C fosters inclusive teaching and learning practices that are student centred. Additionally, he stressed that faculty members and librarians may already get help designing games from a wealth of online resources and examples, and that games can be a helpful tool for bridging the comprehension gap for subjects related to library research. Students studying economics in secondary and post secondary education are increasingly being taught using digital game-based learning (GBL) methodologies (Duzhak et al., 2021; Wilson et al., 2020). In distant learning, their use is also necessary (Masset et al., 2021). Moreover, preliminary evidence that experiential learning—which encompasses GBL—can foster economic abilities supports the inclusion of GBL approaches (Amagir et al., 2017). (Arnab et al., 2015). It appears that using a board game can facilitate discussions that result in a more sustainable allocation of limited resources (Parrondo et al., 2021). It is theoretically believed that games are appropriate because they might help students get ready for future socioeconomic decisions (Remmele & Seeber, 2008), which is consistent with Piaget's (1999) claim that plays an essential component of enculturation. Furthermore, the majority of teenagers and young adults spend their free time playing video games on their phones (Tenzer, 2021).

The goal of game-based learning is to encourage or reward students for participating in educational activities more than they otherwise might. Giving students' incentives like extra credit points or a special privilege—such being able to pick the theme of an end-of-year event or leave class early—is a common practice in game-based learning activities. These kinds of educational exercises are frequently selected in place of more conventional classroom assignments and activities.

Challenges of Game Based Learning

There are several obstacles to overcome when implementing games in the classroom and for library instruction, just like with any new educational strategy. Potential obstacles to game-based learning are covered by **Spiegelman and Glass** in their paper, "Gaming and Learning: Winning Information Literacy Collaboration". Among them are the following:

- Games take time to learn and design properly
- Wasted efforts will be the greatest administrative fear
- Involve materials that range from the inexpensive to the costly
- Design efforts are often funded via grants which have to be managed
- Pedagogical and technical supports might be necessary (additional resources)
- Issues of access and the digital divide
- An examination is needed as to whether students actually prefer this approach to teaching

It should be highlighted, nevertheless, that **Spiegelman and Glass** claim that many game-based learning projects may be completed with very little overhead and with a modest financial commitment. Furthermore, it would be irresponsible to overlook the advantages of game-based learning, which include higher learning and enhanced motivation and engagement. According to Boyhun Kim's article "Harnessing the Power of Game Dynamics," not every game is enjoyable or worthwhile to play. If the game is poorly designed, it won't be enjoyable, and pupils won't play it. One of the author's suggestions is to avoid over gamification. She suggests making the game user-centered and starting small. Furthermore, if the game places an excessive amount of emphasis on its educational components, players will respond unenthusiastically. According to Educause's "7 Things You Should Know About Gaming," implementing a game-based learning strategy in the classroom may give rise to the following issues:

- Games may have pedagogical appeal, but their general appeal might not be universal
- They are frequently associated with leisure rather than academic drive
- Can make some feel self conscious
- Game dynamics can be difficult to align with learning objectives as to meet the educational model, it must meet objectives and be fun
- They must achieve proper alignment with curriculum

DATA ANALYSIS AND INTERPRETATIONS

Data for the study were gathered, and statistical methods were used for analysis. The academic performance of the respondents who learned economics concepts through game-based learning was examined and interpreted. Respondents in this study were the chosen Economics students from the Vellore District in Tamil Nadu. The four categories were formed from the selected respondents. Every group has ten pupils in it. For every group, various topics related to economics were allocated. Traditional teaching approaches were employed to instruct the first two groups. Two other groups received instruction through basic physical games, and the academic achievement of the responders was assessed. Through the use of statistical techniques and observation, the study produced insightful results that might be taken into consideration to improve students' academic performance, but they also had certain drawbacks that should be minimized or avoided.

Assigned Economic Concepts (EC)	Respondents' High Rating for Traditional Teaching Approach (TTA)		Respondents' High Rating for Game-Based Teaching Approach (GTA)	
	Group 1 (10)	Group 2 (10)	Group 3 (10)	Group 4 (10)
EC1	2	2	7	8
EC2	3	4	6	5
EC3	2	2	5	7
EC4	1	2	5	6
EC5	2	2	8	6
EC5	2	3	9	8
EC6	2	2	7	8
EC7	4	3	8	7
EC8	2	2	8	6
EC9	2	2	7	8
EC10	2	1	8	7

Source: Primary Data

Findings of the Study:

The following are the research's main findings.

- A majority of the respondents express interest in acquiring knowledge about economic principles through tangible games.
- The typical teaching approach was deemed annoying by most respondents.
- According to the respondents, in order for game-based economics concepts and their underlying assumptions to be articulated correctly, economic principles need to be constructed.

Other findings as follows

- ✓ Games involve materials that range in price from cheap to expensive.
- ✓ Proper design and learning need time.
- ✓ Managing grants is a common way to fund design activities.
- ✓ Additional resources may be required for pedagogical and technological supports.
- ✓ The Digital Divide and Accessibility Problems.
- ✓ Examining whether students genuinely favor this method of instruction is necessary.

Suggestions and Recommendations of the Study:

The following are the study's suggestions and recommendations:

- ✓ Simple resources should be used for game-based learning.
- ✓ It is important to carefully identify and plan the transformation of economics concepts into game-based learning.
- ✓ It's important to find out if students actually prefer this kind of teaching.
- ✓ Rules for game-based learning should be understood by both teachers and students.
- ✓ Systematic development is necessary to enhance students' academic performance through game-based learning.

Need for further study:

The study contains several drawbacks that ought to be minimized or avoided. More research is required on the creation of game-based learning principles, game-based learning guidelines, and game-based learning technology advancements.

CONCLUSION

In essence, this study develops a game-based learning environment to increase students' confidence in their ability to comprehend a range of economic ideas. Game-based learning is combined with education and games that focus on economic fundamentals. Because of continuous e-learning, game-based learning is getting more attention. Game-based learning makes use of the course material to create an engaging and dynamic learning environment through recurrent self-study, ongoing engagement, and feedback. Therefore, game-based learning could help students successfully accomplish the goal of learning economics.

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