UNIVERSITI TEKNOLOGI MARA

**piCE**
Public Interest Centre
of Excellence

International Teaching Aid
**Competition 2023**
Reconnoitering Innovative Ideas in Postnormal Times

**iTAC**
2023

**iTAC 2023**
INTERNATIONAL TEACHING AID COMPETITION
**E-PROCEEDINGS**

**PREFACE**

iTAC or International Teaching Aid Competition 2023 was a venue for academicians, researchers, industries, junior and young inventors to showcase their innovative ideas not only in the teaching and learning sphere but also in other numerous disciplines of study. This competition was organised by the Special Interest Group, Public Interest Centre of Excellence (SIG PICE) UiTM Kedah Branch, Malaysia. Its main aim was to promote the production of innovative ideas among academicians, students and also the public at large.

In accordance with the theme "Reconnoitering Innovative Ideas in Post-normal Times", the development of novel ideas from the perspectives of interdisciplinary innovations is more compelling today, especially in the post-covid 19 times. Post-pandemic initiatives are the most relevant in the current world to adapt to new ways of doing things and all these surely require networking and collaboration. Rising to the occasion, iTAC 2023 has managed to attract more than 267 participations for all categories. The staggering number of submissions has proven the relevance of this competition to the academic world and beyond in urging the culture of innovating ideas.

iTAC 2023 committee would like to thank all creative participants for showcasing their innovative ideas with us. As expected in any competition, there will be those who win and those who lose. Congratulations to all the award recipients (Diamond, Gold, Silver and Bronze) for their winning entries. Those who did not make the cut this year can always improve and join us again later.

It is hoped that iTAC 2023 has been a worthy platform for all participating innovators who have shown ingenious efforts in their products and ideas. This compilation of extended abstracts published as iTAC 2023 E-Proceedings contains insights into what current researchers, both experienced and novice, find important and relevant in the post-normal times.


Best regards,

**iTAC 2023 Committee**
**Special Interest Group, Public Interest Centre of Excellence (SIG PICE)**
**UiTM Kedah Branch**
**Malaysia**

# PAT-BLOCK 2.0

Amirudin Mohd Nor
Faculty of Business and Management, Universiti Teknologi MARA, Melaka, Malaysia
amirudinmn@uitm.edu.my

Prof. Ts Dr. Shafinar Ismail
Faculty of Business and Management, Universiti Teknologi MARA, Melaka, Malaysia
shafinar@uitm.edu.my

Nur Farisha Affin Razali
Faculty of Business and Management, Universiti Teknologi MARA, Melaka, Malaysia
2021125649@student.uitm.edu.my

Sofea Balqis Rusli
Faculty of Business and Management, Universiti Teknologi MARA, Melaka, Malaysia
sofearusli2018@gmail.com

Fatin Salma Abu Seman
Faculty of Business and Management, Universiti Teknologi MARA, Melaka, Malaysia
fatin01062000@gmail.com

**ABSTRACT**
Pat-Block (PB) 2.0 is a full of prospects teaching and learning innovation that integrates game-based learning (GBL) methodology into an existing financial statement analysis (FSA) course. The FSA course has been well-reviewed, yet it lacks excitement and motivation in learning. Apart from that, the literature on GBL is quite rare in the financial statement analysis field. As a result, we develop an educational game that combines elements of fun, excitement, competition, and incentives. The purpose is to encourage students to study, apply, and retain what they have learned in class. Pat-Block's game consists of 46 precision-crafted, specially finished hardwood blocks integrated with a pinch of technology via the Spin the Wheel app by scanning the QR Code in the devices. Instructors can design an organized learning path across the course contents using a storyboard and a list of dependencies. A series of questions adapted from the FSA syllabus was also prepared and included in the game. Students will be able to comprehend the concept of FSA by playing this hands-on learning game. Such an approach is indeed one of the new teaching aids applied in the FSA course at the university. A pilot test study on an existing FSA class discovered a good degree of agreement in terms of learning, applying knowledge, and enjoying the game. Such feedback reinforces the drive to pursue innovation in this area for the benefit of students and teachers. Future planning includes transforming this physical game into an online game to cater to tech-savvy students.

## INTRODUCTION

Pat-Block 2.0 (PB) is simple yet full of possibilities, teaching, and learning innovation. This innovation investigates the use of game-based learning (GBL) in an ongoing academic course at UiTM. It was created to complement the existing Financial Statement Analysis (FSA) course offered at UiTM Melaka.

Game-based learning is an active learning technique that uses games to assist students learn more successfully (Tamosevicius, 2022). Indeed, it is one of the new learning approaches that can assist educators in meeting the requirements, preferences, and demands of digital natives (Fernández-Raga, Aleksi, kiz, Markiewicz, & Streit, 2023). According to several studies, an increasing number of scholars are committed to developing educational games to aid in the teaching of essential 21st-century skills (Boyle, MacArthur, Connolly, Hainey, Manea, Kärki, & Van Rosmalen, 2014), and we intend to do the same. A related study using a game board conducted by Nor, Daud, Yazid, Taib, and Osman (2020) discovered that playing a board game improved students' aesthetics, learnability, accessibility, confidence, and fun factor.

This innovation attempts to show one example of how game-based learning might be integrated into a finance subject, specifically the Financial Statement Analysis course. GBL is a new methodology used by university lecturers, and to the best of our knowledge, Pat-Block is the first documented GBL in UiTM Melaka's Financial Statement Analysis course.

Pat-Block game consists of 46 precision-crafted, carefully finished hardwood blocks integrated with a pinch of technology via the Pat-Block Spin the Wheel app by scanning the QR Code in the gadgets. A set of questions in the form of Pat-Block question cards, derived from the Financial Statement Analysis FSA course syllabus, was also produced and incorporated into the game. Instructors can create an organized learning route across the course content using a storyboard and a list of dependencies.

Apart from the Jengga-like accessories, we produced a game manual and further documented it on the Pat-Block website as shown in Figure 1 below.
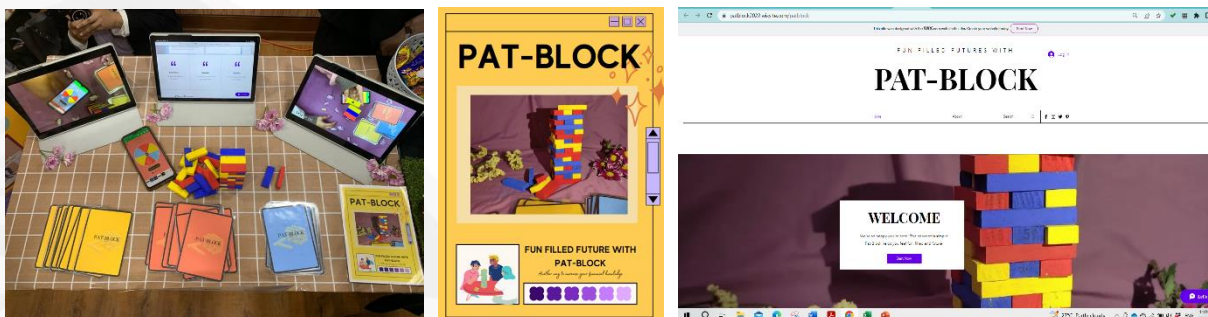
**Figure 1.** Pat-Block accessories, user's manual, and website.

## OBJECTIVE

The project's goals are threefold: (1) to create a program that incorporates aspects of fun, excitement, healthy competition, incentives, and motivation into the course, (2) to aid in learning, applying, and retaining the knowledge obtained, and (3) to boost students' motivation and performance. This project's key contribution is using a game-based method to supplement the existing project-based learning, making the course full of fun, excitement, healthy competition, rewards, and motivation while learning, implementing, and retaining the knowledge obtained.
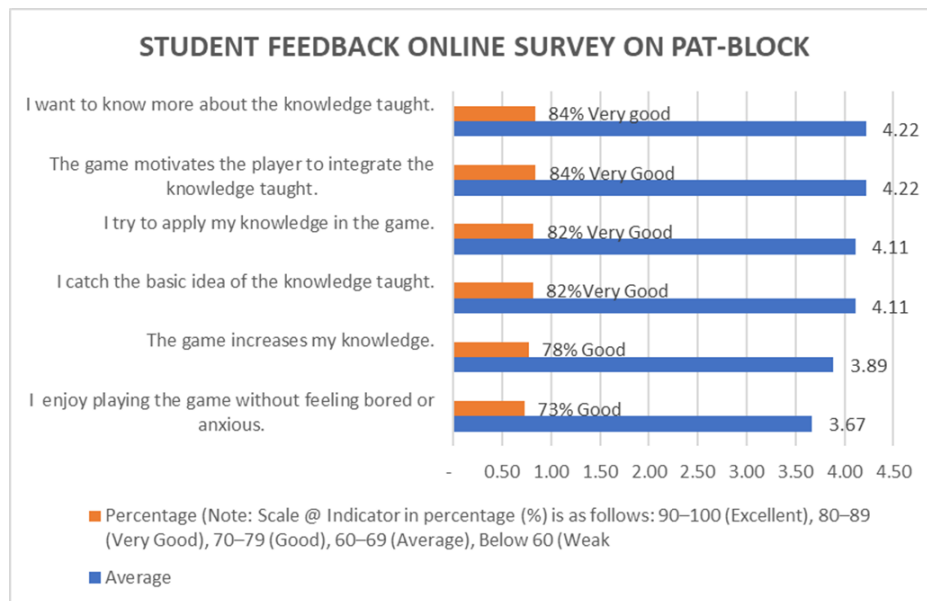
## NOVELTY & INVENTIVENESS

This innovation tries to illustrate one example of how game-based learning can be incorporated into a finance subject, particularly the Financial Statement Analysis course. GBL is a new methodology applied by teachers in the university, and to the best of our knowledge, Pat-Block is the first documented GBL in the Financial Statement Analysis course in UiTM Melaka.

Numerous benefits were noted, including practicality, ease of play, mobile interactivity, collaborative work within the group, active engagement, challenge versus duties, and encouragement for pupils to research their own themes. PB is a new learning tool that aims to improve learning by raising learning outcomes and increasing students' motivation and performance. PB is, in reality, a unique and exciting learning method appropriate for the next generation of students.

## RESULTS AND DISCUSSION

A pilot test study of eighteen Bachelor of Finance students enrolled in the FSA course in UiTM Melaka was conducted. During an off-class hour, the players were given the option to play the Pat-Block game. They were initially briefed on how to play the game and then finished it in 40 minutes. Each player was invited to complete the Pat-Block survey using Google Forms near the end. Data was transmitted to MsExcell, and we then proceeded to analyze the data with MsExcell to produce descriptive results.

**Table 1.** Student Feedback Online Survey on Pat-Block

STUDENT FEEDBACK ONLINE SURVEY ON PAT-BLOCK

| Statement | Percentage | Average |
| --- | --- | --- |
| I want to know more about the knowledge taught. | 84% Very good | 4.22 |
| The game motivates the player to integrate the knowledge taught. | 84% Very Good | 4.22 |
| I try to apply my knowledge in the game. | 82% Very Good | 4.11 |
| I catch the basic idea of the knowledge taught. | 82%Very Good | 4.11 |
| The game increases my knowledge. | 78% Good | 3.89 |
| I enjoy playing the game without feeling bored or anxious. | 73% Good | 3.67 |

■ Percentage (Note: Scale @ Indicator in percentage (%) is as follows: 90–100 (Excellent), 80–89 (Very Good), 70–79 (Good), 60–69 (Average), Below 60 (Weak

■ Average

Most players responded positively that the game motivates them to integrate the knowledge taught (mean- 4.22) and stimulates them to know more about the knowledge taught (mean- 4.22). Accordingly, this game helped them to apply their knowledge in the game (mean- 4.11) and catch the basic idea of the knowledge taught (mean- 4.11). Also, the game has increased the players' knowledge (mean- 3.89) and they enjoy playing the game without feeling bored (mean- 3.67).

**CONCLUSION**

The Pat-Block game was designed to provide an alternative teaching methodology while maintaining traditional teaching methods. Theoretically, we observed that the game might drive players to integrate the knowledge given and stimulate players to study more about the subject taught based on the pilot test analysis. Furthermore, the game motivates participants to study more and to put what they have learned into practice. Pat-Block is a one-of-a-kind game-based learning tool that aids in the development of teaching materials for student growth, particularly in the Financial Statement Analysis course and other courses for future commercialization and product invention.

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