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GAMIFIED FLIPPED CLASSROOM:
KESAN TERHADAP KEMAHIRAN BERFIKIR ARAS TINGGI
DAN PENGLIBATAN PELAJAR MATRIKULASI
JURUSAN PERAKAUNAN



IJAZAH DOKTOR FALSAFAH
UNIVERSITI UTARA MALAYSIA
2025



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Pemeriksa Luar:
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Professor Dr. Wan Ahmad Jaafar Wan Yahaya

Tandatangan
(Signature)

Pemeriksa Dalam:
(Internal Examiner)

Assoc. Prof. Dr. Surendran a/l Sankaran

Tandatangan
(Signature)

Nama Penyelia/Penyelia-penyelia: **Assoc. Prof. Dr Farah Mohamad Zain**
(Name of Supervisor/Supervisors)

Tandatangan
(Signature)

Nama Penyelia/Penyelia-penyelia: **Assoc. Prof. Dr. Siti Noor Ismail**
(Name of Supervisor/Supervisors)

Tandatangan
(Signature)

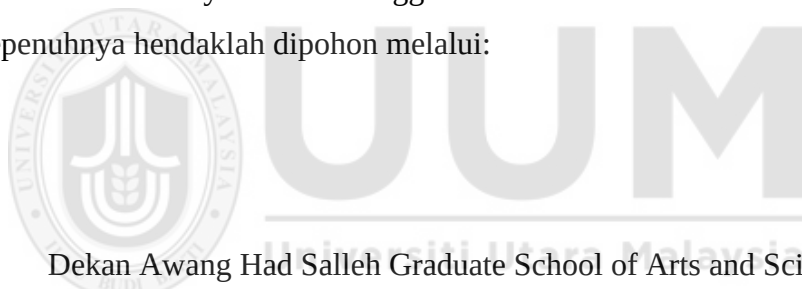
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Dekan Awang Had Salleh Graduate School of Arts and Sciences
UUM College of Art and Sciences
Universiti Utara Malaysia
06010 UUM Sintok

Abstrak

Gamified Flipped Classroom (GFC) ialah strategi pengajaran dan pembelajaran yang dapat meningkatkan motivasi, kemahiran berfikir, penglibatan serta pencapaian pelajar. Namun penyelidikan dan pelaksanaan GFC dalam bidang Perakaunan terutamanya di kolej matrikulasi masih kurang diterokai. Kekurangan tarikan serta penglibatan pelajar dalam strategi konvensional menyukarkan pelajar memahami konsep asas dan proses perakaunan keseluruhannya. Pelajar didapati sukar memahami kehendak soalan terutamanya soalan berbentuk penyelesaian masalah kerana pelajar perlu menggunakan kemahiran berfikir aras tinggi (KBAT) dalam mendapatkan jawapan. Oleh itu, kajian ini dilaksanakan untuk mengenal pasti kesan GFC terhadap KBAT dan penglibatan pelajar matrikulasi jurusan Perakaunan. Seramai 32 orang pelajar Kolej Matrikulasi Perlis terlibat dalam kajian ini yang menggunakan kaedah reka bentuk kuantitatif. Kumpulan eksperimen terdiri daripada 16 orang pelajar didedahkan dengan GFC manakala 16 orang dalam kumpulan kawalan didedahkan dengan strategi *Flipped Classroom* (FC). Data kuantitatif diperoleh dari pelaksanaan kuasi-eksperimen bagi mengukur tahap KBAT pelajar dan instrumen soal selidik digunakan bagi mengukur penglibatan pelajar. Analisis data kajian yang terlibat ialah analisis statistik deskriptif dan analisis inferensi. Hasil kajian menunjukkan bahawa intervensi yang dijalankan bagi kedua-dua kumpulan memberikan kesan terhadap skor KBAT dalam ujian pra dan ujian pasca pelajar. Lantaran itu, terdapat perbezaan yang signifikan skor min KBAT dalam ujian pra dan ujian pasca antara pelajar GFC dan FC. Selain itu juga, wujud perbezaan yang signifikan dalam tahap penglibatan pelajar Perakaunan yang didedahkan dengan strategi GFC dan FC. Kajian ini menyumbang kepada idea baharu, inovasi serta kepelbagaian strategi pengajaran dan pembelajaran dalam meningkatkan KBAT dan penglibatan pelajar di samping mencapai matlamat PPPM 2013-2025 terutamanya dalam anjakan ke 7 dan 8. Selain itu, Rancangan Instruksional GFC yang dibangunkan dapat digunakan oleh semua pensyarah Perakaunan kolej matrikulasi seluruh Malaysia. Justeru itu, Rancangan Instruksional dan strategi GFC ini juga dapat diaplikasikan dalam subjek-subjek lain.

Kata Kunci: *Gamified flipped classroom, Flipped classroom, KBAT, Penglibatan*

Abstract

Gamified Flipped Classroom (GFC) is a teaching and learning strategy that can enhance students' motivation, thinking skills, engagement, and achievements. However, GFC research and implementation in Accounting, especially in matriculation colleges, has not been widely explored. The lack of attraction and student engagement in conventional strategies makes it difficult for students to understand basic concepts and the overall accounting process. Students find it difficult to understand the requirements of questions, especially questions in the form of problem solving because students have to use Higher Order Thinking Skills (HOTS) in getting answer. This study aimed to examine the impact of GFC on HOTS and student engagement among matriculation students majoring in Accounting. A total of 32 students from Perlis Matriculation College participated, using a quantitative research design. The experimental group consisted of 16 students exposed to GFC, while 16 students in the control group were taught using the Flipped Classroom (FC) strategy. Quantitative data were gathered through a quasi-experiment to measure students' HOTS and a questionnaire to assess student engagement. The data analysis involved descriptive and inferential statistics. Results showed that the interventions in both groups affected HOTS scores in students' pre- and post-tests. Consequently, there is a significant difference in the mean HOTS score in the pre and post-test between GFC and FC students. Additionally, significant differences in engagement levels were observed among Accounting students exposed to GFC and FC strategies. This study contributes to new ideas, innovations, and diversity of teaching strategies to improve HOTS and student engagement, in line with the goals of PPPM 2013-2025, particularly shifts 7 and 8. Moreover, the GFC Instructional Plan developed can be used by all Accounting lecturers in matriculation colleges throughout Malaysia. Therefore, the Instructional Draft and the GFC strategy can also be applied in other subjects.

Keywords: Gamified flipped classroom, Flipped classroom, HOTS, Engagement

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Senarai Singkatan

GBL *Games Based Learning*

GFC *Gamified Flipped Classroom*

FC *Flipped Classroom*

ICT *Information and Communication Technology*

PPPM Pelan Pembangunan Pendidikan Malaysia

IR *Revolution Industry*

KBAT Kemahiran Berfikir Aras Tinggi

KBAR Kemahiran Berfikir Aras Rendah

UA Universiti Awam

KPM Kementerian Pendidikan Malaysia

BMKPM Bahagian Matrikulasi Kementerian Pendidikan Malaysia

PEO *Programme Educational Objectives*

PLO *Programme Learning Outcomes*

LOC *Learning Outcomes Cluster*

MQF *Malaysian Qualification Framework*

SPM Sijil Pelajaran Malaysia

PSPM Peperiksaan Semester Program Matrikulasi

CLO *Course Learning Outcomes*

SDT *Self-determination theory*

ELT *English Language Teaching*

BAB SATU

PENGENALAN

1.1 Pengenalan

Dunia pendidikan sentiasa berubah mengikut perkembangan ekonomi dan kepesatan pembangunan sesebuah negara yang bergerak seiring pembangunan teknologi. Kurikulum pendidikan yang berkualiti distrukturkan bagi melahirkan masyarakat yang berpengetahuan tinggi agar dapat mendepani cabaran hidup dalam abad ke-21. Menurut Assi, Norazlinda Saad dan Surendran (2022), proses pengajaran dan pembelajaran yang sistematik perlu mempunyai tiga komponen asas yang saling berkait iaitu guru, pelajar dan isi kandungan pelajaran. Justeru itu, pendidikan bukan sekadar berubah oleh persekitaran teknologi malah ianya disebabkan oleh kemunculan metodologi baru (Charlo, Belova, Gutiérrez, Llinares, Arboleya-García, Swacha, López-Serentill & Carmona-Medeiro, 2022). Metodologi baru berfokuskan pembelajaran berpusatkan pelajar yang bertujuan meningkatkan interaksi serta menggalakkan imaginasi dan pemikiran mencapah pelajar. Strategi pengajaran yang membantu meningkatkan penglibatan pelajar ialah pembelajaran berasaskan permainan (GBL) dan penyelidikan mengenainya telah berkembang sedekad yang lalu. Menurut Yanduri (2025), gamifikasi memainkan peranan yang sangat penting dalam mempromosikan pembelajaran, membantu meneroka proses sedar dan bawah sedar pelajar, serta pelajar berkeupayaan mengaplikasikan kemahiran diperoleh dalam kehidupan nyata.

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LAMPIRAN A

Rancangan Instruksional GFC

WEEK 1 (GFC)

Topic :	Basic Accounting Concept
Subtopic :	2.2 Accounting Concepts
Learning Outcomes :	At the end of the class students should be able to: 2.2 a) Describe the accounting concepts: historical cost, monetary measurement , economic entity , going concern, consistency, accounting-period, materiality, revenue recognition, expense recognition (matching concept), prudence concept, full disclosure, objectivity and fair value measurement.
Activity/Phase: PRE-CLASS (1 hour)	1. Student will watch the video given by lecturer in Google Classroom. 2. Student take note and record any question they have and not clearly understood. 3. Video GAAP and Accounting Concept : https://www.youtube.com/watch?v=Okw87x_DSCA&t=4s
IN-CLASS (1 hour)	1. Q&A session on pre-class video. Lecturer clarify about pre-class video to help students misconceptions. 2. Student answer the online quizzes thru Quizizz (team mode). https://quizizz.com/admin/quiz/62c3fae0748ead001d185da3/chapter-2-basic-accounting-concepts 3. Lecturer discuss the answer and summarize learning with students after online quizzes ended.
OUT-CLASS	1. Students are required answer reinforcement exercise in Google Classroom. 2. Reinforcement exercise using Kahoot!: https://create.kahoot.it/share/accounting-concept/a531c1a7-595f-475b-a3ca-e5ed3520564d
Remarks/ Reflections	

WEEK 2 (GFC)

Topic :	Basic Accounting Concept
Subtopic :	2.3 Accounting Equation 2.4 Double- entry system
Learning Outcomes :	At the end of the class students should be able to: 2.3 Accounting equation. a) Describe the accounting equation for service businesses. b) Define assets, liabilities and owner's equity. c) Analyze the effect of business transaction on accounting equation. *Reference: <i>Malaysian Financial Reporting Standards (MFRSs) 101</i> 2.4 Double-Entry System a) Explain the double-entry system. b) Describe the rules of debit and credit on asset, liabilities, owner's equity, revenues, expenses and drawings.
Activity/Phase: PRE-CLASS (1 hour)	1. Student will watch the video given by lecturer in Google Classroom. 2. Student take note and record any question they have and not clearly understood. 3. Video Accounting Equation and Double- entry system: https://www.youtube.com/watch?v=S3ODM5lhA8A
IN-CLASS (2 hour)	1. Q&A session on pre-class video. Lecturer clarify about pre-class video to help students misconceptions. 2. Student answer the Accounting Equation & Double-entry system online quizzes thru Nearpod (Individual mode). https://np1.nearpod.com/sharePresentation.php?code=b2eb35187c8525442c37dc90a2e4ea02-1 3. Lecturer discuss the answer and summarize learning with students after online quizzes ended.
OUT-CLASS	Students are required answer reinforcement exercise in Google Classroom. Reinforcement exercise using <i>Kahoot!</i> Chapter 2 https://create.kahoot.it/details/ecc8a3e6-7259-43fe-8960-6a88c3212082
Remarks/ Reflections	

WEEK 3 (GFC)

Topic :	Introduction to Accounting
Learning Outcomes :	At the end of the class students should be able to: 1.1 a) Explain the term of accounting. 1.2 a) Explain about the users of accounting information: internal users and external users. 1.3 a) Explain the differences between bookkeeping and accounting. 1.4 a) Identify branches of accounting; Financial Accounting, Managerial Accounting, Cost Accounting, Auditing, Public Sector Accounting, taxation and forensic accounting. 1.5 a) Identify the characteristics of three types of business ownerships: sole proprietorship, partnership and company. 1.6 a) Describe types of business activities: services, manufacturing and merchandising. 1.7 a) Identify the element and b) Explain and four types of financial statement: Statement of Comprehensive Statement / Profit or Loss, Statement of Changes in Equity, Statement of Financial Position and Statement of Cash Flows. 1.8a) Explain the functions of three professional accounting bodies in Malaysia: Malaysian Accounting Standards Board (MASB), Malaysian Institute of Accountants (MIA) and Malaysian Institute of Certified Public Accountants (MICPA). 1.9 a) Describe the principle of ethics in accounting profession such as integrity, objectivity, professional competency and due care, confidentiality and professional behavior. 1.10 a) Identify potential career in accounting.
Activity/Phase: PRE-CLASS (1 hour)	1. Student will watch the video given by lecturer in Google Classroom. 2. Student take note and record any question they have and not clearly understood. 3. Video Chapter 1: - Part 1: https://www.youtube.com/watch?v=4_Alpy2gobs - Part 2: https://www.youtube.com/watch?v=zDwHsYOTQAA - Part 3: https://www.youtube.com/watch?v=NMSlpVhwupQ

IN-CLASS (2 hour)	1. Q&A session on pre-class video. Lecturer clarify about pre-class video to help students misconceptions. 2. Student answer the online quizzes thru Quizizz (team mode). Quizizz 1 - Chapter 1 AA015 Other - Quizizz 3. Lecturer discuss the answer and summarize learning with students after online quizzes ended.
OUT-CLASS	1. Students are required answer reinforcement exercise in Google Classroom. 2. Reinforcement exercise: <i>Kahoot!</i> Chapter 1 https://create.kahoot.it/details/f608ce2d-181e-4fc3-ad4f-cc05cc47574b
Remarks/ Reflections	



LAMPIRAN B
Rancangan Instruksional FC
WEEK 1 (FC)

Topic :	Basic Accounting Concept
Subtopic :	2.2 Accounting Concepts
Learning Outcomes :	At the end of the class students should be able to: 2.2 a) Describe the accounting concepts: historical cost, monetary measurement , economic entity , going concern, consistency, accounting-period, materiality, revenue recognition, expense recognition (matching concept), prudence concept, full disclosure, objectivity and fair value measurement.
Activity/Phase: PRE-CLASS (1 hour)	1. Student will watch the video given by lecturer in Google Classroom. 2. Student take note and record any question they have and not clearly understood. 3. Video GAAP and Accounting Concept : https://www.youtube.com/watch?v=Okw87x_DSCA&t=4s
IN-CLASS (1 hour)	1. Q&A session on pre-class video. Lecturer clarify about pre-class video to help students misconceptions. 2. Class divide into 3 groups. Every group should have variety of nation and gender. 3. Student answer the quizzes given by lecturer in group discussion. - Group 1 (Question 1-10) - Group 2 (Question 11-20) - Group 3 (Question 21-30) 4. Students present the answer and other class member need to pay attention. 5. Each group must engage in the discussion by ask the question to increase their mastery in the topic. 6. Lecturer listen the students discussion and summarize learning with students after presentation ended.
OUT-CLASS	1. Students are required answer Reinforcement Exercise in Google Classroom. 2. Lecturer check the answer after receive submission from students.
Remarks/ Reflections	

QUIZZES CHAPTER 2

ACCOUNTING CONCEPT

- 1 The accounting principle that states companies and owners should be accounted for separately:
 - A Economic Entity Concept
 - B Going Concern Concept
 - C Monetary Measurement Concept
 - D Accounting Period Concept

- 2 When recognizing unearned revenues, which concept is applied?
 - A Full Disclosure Concept
 - B Historical Cost Concept
 - C Revenue Recognition Concept
 - D Consistency Concept

- 3 Switching accounting principles and methods every year would violate the:
 - A Expense Recognition Concept
 - B Objectivity Concept
 - C Full Disclosure Concept
 - D Consistency Concept

- 4 The owner invests personal cash in the business. The assets will.....
 - A Increase
 - B Decrease
 - C No effect

- 5 The owner withdraws cash from the business for personal use. The owner's equity will.....
 - A Increase
 - B Decrease
 - C No effect

- 6 The company receives cash from a bank loan. The liabilities will.....
 - A Increase
 - B Decrease
 - C No effect

- 7 In May, Company X records the transaction by a debit to Accounts Receivable for RM5,000 and a credit to Service Revenues for RM5,000. What is the effect of this entry upon the accounting equation for Company X?
- A Assets Increase; Liabilities Decrease
 - B Assets Increase; Owner's Equity Increase
 - C Assets Decrease; Owner's Equity Increase
 - D Assets Decrease; Liabilities Decrease
- 8 In June, Company X receives the RM5,000 from Accounts Receivable. What is the effect on the accounting equation and which accounts are affected at Company X?
- A Assets Increase; Owner's Equity Decrease
 - B No Effect
 - C Assets Increase; Liabilities Decrease
 - D Liabilities Increase; Owner's Equity Decrease
- 9 Assets are recorded at their original purchased price according to the:
- A Materiality Concept
 - B Historical Cost Concept
 - C Fair Value Measurement Concept
 - D Consistency Concept
- 10 Which principle/concept requires the company's financial statements to have footnotes containing information that is important to users of the financial statements?
- A Historical Cost Concept
 - B Economic Entity Concept
 - C Objectivity Concept
 - D Full Disclosure Concept

- 11 Which concept is applied when a source document is prepared for each transaction
- A going concern concept
 - B materiality concept
 - C revenue recognition concept
 - D objectivity concept
- 12 When a business activity or the amount involved is large enough to impact business decisions, it should be recorded clearly in the financial statements. Which concept does this statement refer to?
- A revenue recognition concept
 - B materiality concept
 - C monetary measurement concept
 - D consistency concept
- 13 Financial statements are prepared with the expectation that business will remain in operation indefinitely. Which concept does this statement refer to?
- A going concern concept
 - B materiality concept
 - C accounting period concept
 - D expense recognition concept
- 14 Jeff's Construction, LLC Ent. bought a piece of equipment in 2001 for RM10,000. Today this piece of equipment is only worth RM2,000. Jeff would still report the equipment at its purchase price of RM10,000, less it's accumulated depreciation. Which concept did he comply to?
- A Materiality Concept
 - B Historical Cost Concept
 - C Fair Value Measurement Concept
 - D Consistency Concept
- 15 Liabilities
- A are future economic benefits.
 - B are existing debts and obligations.
 - C possess service potential.
 - D are things of value used by the business in its operation.

- 16 Owner's equity can be described as
- A creditorship claim on total assets
 - B ownership claim on total assets
 - C benefactor's claim on total assets.
 - D debtor claim on total assets
- 17 When an owner take out cash or other assets from a business for personal use, these activities are termed as
- A depletions.
 - B consumptions.
 - C drawings.
 - D a credit line.
- 18 Capital is
- A an owner's permanent investment in the business.
 - B equal to liabilities minus owner's equity.
 - C equal to assets minus owner's equity.
 - D equal to liabilities plus drawings
- 19 Revenues would not result from
- A sale of merchandise
 - B initial investment of cash by owner.
 - C performance of services.
 - D rental of property.
- 20 Sources of increases to owner's equity are
- A additional investments by owners.
 - B purchases of merchandise.
 - C withdrawals by the owner.
 - D expenses.
- 21 Owner's equity is decreased by all of the following except
- A revenues
 - B owner's withdrawals.
 - C expenses.
 - D owner's drawings

- 22 A net loss will result during a time period when
- A liabilities exceed assets.
 - B drawings exceed investments.
 - C expenses exceed revenues.
 - D revenues exceed expenses
- 23 If total liabilities decreased by RM40,000 and owner's equity increased by RM30,000 during a period of time, then total assets must change by what amount and direction during that same period?
- A RM50,000 decrease
 - B RM10,000 decrease
 - C RM10,000 increase
 - D RM50,000 increase
- 24 If total liabilities decreased by RM40,000 and owner's equity decreased by RM30,000 during a period of time, then total assets must change by what amount and direction during that same period?
- A RM70,000 decrease
 - B RM10,000 decrease
 - C RM10,000 increase
 - D RM70,000 increase
- 25 Which of the following are Assets? (you may pick more than 1 answer)
- A Bank Account
 - B Bank Loan
 - C Vehicles
 - D Accounts Payable
 - E Accounts Receivable
- 26 The following are liabilities (you may pick more than 1 answer).
- A Bank Loan
 - B Inventory
 - C Mortgage
 - D Accounts Payable
 - E Cash
- 27 When the customers owing money from our business; it is called
- A Accounts Receivable
 - B Accounts Payable
 - C Notes Payable
 - D Bad Debt
- 28 The following are expenses (you may pick more than 1 answer).
- A Prepaid insurance

- B Salaries paid to employees
- C Sales revenues
- D Fees Received
- E Supplies used

29 The following are types of Income (you may pick more than 1 answer).

- A Sales
- B Payments/Fees Received
- C Salaries
- D Staff Wages
- E Advertising

30 If I buy equipment for RM1,000 using a cheque....what will i write in the transaction analysis table?

- A -RM1,000 in bank column
- B -RM1,000 in equipment column
- C +RM1,000 in equipment column
- D +RM1,000 in bank column

ANSWER

1	A	11	D	21	A
2	C	12	B	22	C
3	D	13	A	23	B
4	A	14	B	24	A
5	B	15	B	25	A,C,E
6	A	16	A	26	A,C,D
7	B	17	C	27	A
8	B	18	A	28	B,E
9	B	19	B	29	A,B
10	D	20	A	30	A,C

REINFORCEMENT EXERCISE

BASIC ACCOUNTING CONCEPT

- 1 The historical cost concept requires that when assets are acquired, they be recorded at
 - A appraisal value.
 - B cost.
 - C market price.
 - D book value.

- 2 GAAP stands for
 - A Generally Accepted Auditing Procedures.
 - B Generally Accepted Accounting Principles.
 - C Generally Accepted Auditing Principles.
 - D Generally Accepted Accounting Procedures

- 3 The Dulce Company has five plants nationwide that cost a total of RM200 million. The current fair value of the plants is RM600 million. The plants will be recorded and reported as assets at
 - A RM200 million.
 - B RM600 million.
 - C RM400 million.
 - D RM800 million.

- 4 Sam Ryo is the proprietor (owner) of Sam's, a retailer of golf apparel. When recording the financial transactions of Sam's, Sam does **not** record an entry for a car he purchased for personal use. Sam took out a personal loan to pay for the car. What accounting concept guides Sam's behavior in this situation?
 - A Historical Cost Concept
 - B Monetary Measurement Concept
 - C Economic Entity Concept
 - D Expense Recognition Concept

- 5 The accounting principle that states companies and owners should be account for separately:
 - A Economic Entity Concept
 - B Going Concern Concept

- C Monetary Measurement Concept
- D Accounting Period Concept

6 Assets are recorded at their original purchase price according to the:

- A Materiality Concept
- B Historical Cost Concept
- C Fair Value measurement Concept
- D Consistency Concept

7 When estimating unearned revenues, which concept is followed?

- A Revenue Recognition Concept
- B Objectivity Concept
- C Full Disclosure Concept
- D Consistency Concept

8 Switching accounting principles every year would violate the:

- A Going Concern Concept
- B Historical Cost Concept
- C Full Disclosure Concept
- D Consistency Concept

9 Perniagaan Angkasa claims that the accounting information provided is based on assumptions that the business will continue to operate in the future without the intention of dissolving it.

- A Historical Cost Concept
- B Going Concern Concept
- C Accounting Period Concept
- D Materiality Concept

10 Perniagaan Mona has not reported the loss suffered by the fire in its financial statements although the amount of loss is large. Which concept is violated here?

- A Full Disclosure Concept
- B Materiality Concept
- C Objectivity Concept
- D Consistency Concept

- 11 The owner's wife of Kedai Kopi Kampung Baru used business money to buy a computer for her and her children's used but was not recorded in the business book. Which concept have been violated here?
- A Accounting Period Concept
 - B Historical Cost Concept
 - C Consistency Concept
 - D Economic Entity Concept
- 12 Utama Enterprise had bought a shop worth RM450,000 in 2007. In 2012, the store's market value was RM700,000. The business accountant has reported the value of this store in the 2012 financial statements at market value RM700,000. Which concept is violated here?
- A Economic Entity Concept
 - B Historical Cost Concept
 - C Fair value Measurement Concept
 - D Accounting Period Concept
- 13 Perniagaan Ceria management has decided to change the depreciation method from reducing balance to straight-line method during the year after a year of its use. Which concept is violated here?
- A Consistency Concept
 - B Revenue Recognition Concept
 - C Expense Recognition Concept
 - D Going Concern Concept
- 14 Which concept is complied when a business activity or the amount involved is large enough to impact the business decisions; should be recorded clearly in the financial statements
- A Revenue Recognition Concept
 - B Materiality Concept
 - C Monetary Measurement Concept
 - D Consistency Concept

- 15 A purchase of pen is treated as a revenue expense, according to the concept of
- A Revenue Recognition
 - B Materiality
 - C Fair Value Measurement
 - D Consistency

ANSWER:

- | | | | | | |
|---|---|----|---|----|---|
| 1 | B | 6 | B | 11 | D |
| 2 | B | 7 | A | 12 | B |
| 3 | A | 8 | D | 13 | A |
| 4 | C | 9 | B | 14 | B |
| 5 | A | 10 | B | 15 | B |



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Universiti Utara Malaysia

WEEK 2 (FC)

Topic :	Basic Accounting Concept
Subtopic :	2.3 Accounting Equation 2.4 Double- entry system
Learning Outcomes :	At the end of the class students should be able to: 2.3 Accounting equation. a) Describe the accounting equation for service businesses. b) Define assets, liabilities and owner's equity. c) Analyse the effect of business transaction on accounting equation. *Reference: <i>Malaysian Financial Reporting Standards (MFRSs) 101</i> 2.4 Double-Entry System a) Explain the double-entry system. b) Describe the rules of debit and credit on asset, liabilities, owner's equity, revenues, expenses and drawings.
Activity/Phase: PRE-CLASS (1 hour)	1. Student will watch the video given by lecturer in Google Classroom. 2. Student take note and record any question they have and not clearly understood. 3. Video Accounting Equation and Double- entry system: https://www.youtube.com/watch?v=S3ODM5lhA8A
IN-CLASS (2 hour)	1. Q&A session on pre-class video. Lecturer clarify about pre-class video to help students misconceptions. 2. Students answer the Accounting Equation and Double-entry system exercise individually. 3. Students change the answer paper with their friends after times up and check the answer with lecturer. 4. Lecturer explain detail the exercise answer if necessary.
OUT-CLASS	1 Students are required answer Reinforcement Exercise in Google Classroom. 2 Lecturer check the answer after students upload the answer in Google Classroom.
Remarks/ Reflections	

EXCERCISE CHAPTER 2
ACCOUNTING EQUATION & DOUBLE ENTRY SYSTEM

- 1 In May, Company X records the transaction by a debit to Accounts Receivable for RM5,000 and a credit to Service Revenues for RM5,000. What is the effect of this entry upon the accounting equation for Company X?
 - A Assets Increase; Liabilities Decrease
 - B Assets Increase; Owner's Equity Increase
 - C Assets Decrease; Owner's Equity Increase
 - D Assets Decrease; Liabilities Decrease

- 2 Owner's equity is decreased by all of the following except
 - A owner's investments.
 - B owner's withdrawals
 - C expenses.
 - D owner's drawings.

- 3 The company receives cash from a bank loan. The liabilities will.....
 - A Increase
 - B Decrease
 - C No effect

- 4 The owner withdraws cash from the business for personal use. The owner's equity will.....
 - A Increase
 - B Decrease
 - C No effect

- 5 The owner invests personal cash in the business. The assets will.....
 - A Increase
 - B Decrease
 - C No effect

- 6 Owner's equity can be described as
 - A creditorship claim on total assets
 - B ownership claim on total assets
 - C benefactor's claim on total assets.
 - D debtor claim on total assets

- 7 When an owner take out cash or other assets from a business for personal use, these activities are termed as

- A depletions.
- B consumptions.
- C drawings.
- D a credit line.

8 Owner's equity is decreased by all of the following except

- A revenues
- B owner's withdrawals.
- C expenses.
- D owner's drawings

9 The Accounting Equation must always be in balance?

- A True
- B False

10 Purchases from a supplier on credit is a liability.

- A True
- B False

11 Cost incurred in its efforts to create revenue

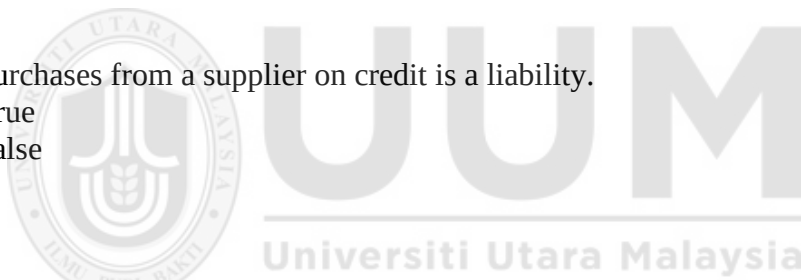
- A Expense
- B Revenue
- C Withdrawal
- D Liability

12 Expenses DECREASE owners equity.

- A True
- B False

13 Revenue DECREASES owners equity.

- A True
- B False



14 Supplies purchased on account that will be paid for at a later date is a liability.
A True
B False

15 The owner's worth after assets are used to pay all liabilities is the definition of
A Owner's Equity
B Liabilities
C Assets

16 Bought supplies on account means Supplies has increased and what other account has changed?
A Cash has decreased
B Accounts Payable has increased
C Capital has decreased
D Supplies Expense has increased

17 In what accounting element can we classify INVENTORIES?
A Assets
B Liabilities
C Equity
D Revenues

18 If the total liabilities is RM15,000 and the total assets is RM23,000, what is the total equity using the accounting equation?
A RM8,000
B RM15,000
C RM38,000

19 The company repays the bank that had lent money to the company. What is the effect on accounting equation?
A Increased in Assets : Decreased in Equity
B Decreased in Assets : Decreased in Liabilities
C Decreased. in Liabilities : Decreased in Liabilities

20 In what accounting element can we classify SALARIES EXPENSE?
A Assets
B Liabilities
C Equity

21 What does the accounting equation form the basis for?
A Single entry bookkeeping
B Cash books
C Double entry bookkeeping

22 What account type is the cash account?
A Liabilities
B Assets
C Equity
D Revenues

23 What account type is the Rental Expense account?
A Revenues
B Assets
C Expenses
D Liabilities

24 What will happen to liabilities when a business takes out a loan?
A Liabilities will increase
B No effect on Liabilities
C Liabilities will decrease

25 Received cash from a debtor named Bilawal will affect...
A Cash and Accounts Payable
B Cash and Inventories
C Cash and Capital
D Cash and Accounts Receivable

26 Which of the following statements is incorrect?
A $\text{Liabilities} + \text{Assets} = \text{Capital}$
B $\text{Assets} - \text{Liabilities} = \text{Capital}$

- C Liabilities + Capital = Assets
- D Assets - Capital = Liabilities

- 27 The accounting equation should remain in balance because every transaction affects how many accounts?
- A Only one
 - B Only two
 - C Two or more
 - D All of given options

- 28 Start business with RM100,000 cash in hand (more than one answer)
- A Cash increase RM100,000
 - B Cash decrease RM100,000
 - C Capital increase RM100,000
 - D Capital decrease RM100,000

- 29 Get a business loan from Maybank Islamic Bhd RM300,000
- A Cash at Bank increase RM300,000
 - B Cash at Bank decrease RM300,000
 - C Loan from Maybank Islamic increase RM300,000
 - D Loan from Maybank Islamic decrease RM300,000

- 30 Purchased a business premise of RM150,000 by cheque (more than one answer)
- A Cash at Bank increased RM150,000
 - B Cash at Bank decreased RM150,000
 - C Premises increased RM150,000
 - D Premises decreased RM150,000

ANSWER

- | | | |
|-----|------|---------|
| 1 B | 11 A | 21 C |
| 2 A | 12 A | 22 B |
| 3 A | 13 B | 23 C |
| 4 B | 14 A | 24 A |
| 5 A | 15 A | 25 D |
| 6 B | 16 B | 26 A |
| 7 C | 17 A | 27 C |
| 8 A | 18 A | 28 A, C |

9	A	19	B	29	A,C
10	A	20	C	30	B,C

REINFORCEMENT EXERCISE

CHAPTER 2 : BASIC ACCOUNTING CONCEPT

- 1 GAAP
 - A Generally Accepted Accounting Procedures
 - B Generally Accepted Accounting Principles

- 2 Assumption that the business will continue for foreseeable future.
 - A Consistency
 - B Going Concern
 - C Accounting Period
 - D Revenue Recognition

- 3 Transaction are recorded at original purchase price.
 - A Money Measurement
 - B Materiality
 - C Consistency
 - D Historical Cost

- 4 Transactions are recognised when they occur and reported in the period to which they relate.
 - A Expense Recognition
 - B Economic Entity
 - C Revenue Recognition
 - D Consistency

- 5 It is recognized when the ownership of goods is transferred between seller and customer.
 - A Expenses
 - B Revenue

- 6 The owners personal financial transactions kept separate from those of the business.
 - A Historical Cost
 - B Economic Entity
 - C Ownership
 - D Objectivity

- 7 The same accounting procedures must be followed in the same way in each accounting period.
 - A Revenue Recognition
 - B Going Concern
 - C Expense Recognition
 - D Consistency

- 8 Accounting data should be valid and has reliable evidence to support transactions occurred.
- A Money Measurement
 - B Fair Value Measurement
 - C Objectivity
 - D Materiality
- 9 Concepts are not taken literally so only relevant items are classed as non-current assets.
- A Materiality
 - B Historical Cost
 - C Money Measurement
 - D Full Disclosure
- 10 The assumption implies that economic activities can be divided into arbitrary time period.
- A Going Concern
 - B Accounting Period
 - C Revenue Recognition
 - D Consistency
- 11 Only data that can be expressed in term of money can be included in accounting records.
- A Historical Cost
 - B Objectivity
 - C Consistency
 - D Money Measurement
- 12 $ASSETS = LIABILITIES + OWNER'S EQUITY$
- A True
 - B False
- 13 $OWNER'S EQUITY = CAPITAL + REVENUE - EXPENSE - OWNER'S WITHDRAWAL$
- A True
 - B False
- 14 $REVENUES - EXPENSES = PROFIT$
- A True
 - B False
- 15 Accounting uses the...
- A Single-entry system
 - B No-entry system
 - C Double-entry system

ANSWER:

1 B
2 B
3 D
4 A
5 B

6 B
7 D
8 C
9 A
10 B

11 D
12 A
13 A
14 A
15 C



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WEEK 3 (FC)

Topic :	Introduction to Accounting
Learning Outcomes :	At the end of the class students should be able to: 1.1 a) Explain the term of accounting. 1.2 a) Explain about the users of accounting information: internal users and external users. 1.3 a) Explain the differences between bookkeeping and accounting. 1.4 a) Identify branches of accounting; Financial Accounting, Managerial Accounting, Cost Accounting, Auditing, Public Sector Accounting, taxation and forensic accounting. 1.5 a) Identify the characteristics of three types of business ownerships: sole proprietorship, partnership and company. 1.6 a) Describe types of business activities: services, manufacturing and merchandising. 1.7 a) Identify the element and b) Explain and four types of financial statement: Statement of Comprehensive Statement / Profit or Loss, Statement of Changes in Equity, Statement of Financial Position and Statement of Cash Flows. 1.8a) Explain the functions of three professional accounting bodies in Malaysia: Malaysian Accounting Standards Board (MASB), Malaysian Institute of Accountants (MIA) and Malaysian Institute of Certified Public Accountants (MICPA). 1.9 a) Describe the principle of ethics in accounting profession such as integrity, objectivity, professional competency and due care, confidentiality and professional behavior. 1.10 a) Identify potential career in accounting.
Activity/Phase: PRE-CLASS (1 hour)	1. Student will watch the video given by lecturer in Google Classroom. 2. Student take note and record any question they have and not clearly understood. 3. Video Chapter 1: Part 1: https://www.youtube.com/watch?v=4_Alpy2gobs Part 2: https://www.youtube.com/watch?v=zDwHsYOTQAA Part 3: https://www.youtube.com/watch?v=NMSlpVhwupQ
IN-CLASS (1 hour)	1. Q&A session on pre-class video. Lecturer clarify about pre-class video to help students misconceptions. 2. Class divide into 3 groups. Every group should have variety of nation and gender.

	3. Student answer the quizzes given by lecturer in group discussion. - Group 1 (Question 1-15) - Group 2 (Question 16-30) - Group 3 (Question 31-45) 4. Students present the answer and other class member need to pay attention. 5. Each group must engage in the discussion by ask the question to increase their mastery in the topic. 6. Lecturer listen the students discussion and summarize learning with students after presentation ended.
OUT-CLASS	1. Students are required answer Reinforcement Exercise in Google Classroom. 2. Lecturer check the answer after students upload the answer in Google Classroom.
Remarks/ Reflections	

EXERCISE CHAPTER 1

INTRODUCTION TO ACCOUNTING

- 1 The type or branch of accounting that generates reports for the use of external parties such as creditors, investors and government agencies is known as:
 - A Financial Accounting
 - B Managerial Accounting
 - C Tax Accounting
 - D Forensic Accounting

- 2 Which one of the following is not an external user of accounting information?
 - A Investors
 - B Managers
 - C Creditors
 - D Customers

- 3 Board of Directors are the_____ users of the accounting information.
 - A Internal
 - B External

- 4 Bookkeeping is part of the accounting process
 - A True
 - B False

- 5 Which one is correct about branches of accounting?
 - A Branches of accounting consist of Financial Accounting, Business Management, Economics, Mathematics Auditing and Budgeting
 - B Branches of accounting consist of Financial Accounting, Management Accounting, Cost Accounting, Public Sector Accounting, Auditing, and Taxation.
 - C Branches of accounting consist of Financial Accounting, Management Accounting, Business Management, Economics, Planning and Auditing.
 - D Branches of accounting consist of Financial Accounting, Management Accounting, Cost Accounting, Public Sector Accounting, International Accounting and Business Consultation.

- 6 Financial Accounting provides information to internal users only
 - A True
 - B False

- 7 The owner of a company is either 2 to 20 people. Which ownership complies with this statement?
- A Sole Proprietorship
 - B Corporation (Private Limited)
 - C Partnership
 - D Corporation (Public Company)
- 8 The owner of a company is either 2 to unlimited numbers. Which ownership complies with this statement?
- A Sole Proprietorship
 - B Corporation (Private Limited)
 - C Partnership
 - D Corporation (Public Company)
- 9 The company changed raw materials into finished products and sold to customers. What type of business activity were they involved in?
- A Services
 - B Merchandising
 - C Manufacturing
 - D Banking
- 10 Which one is not a service company?
- A Sunway College
 - B Celcom
 - C Tesco
 - D Maybank
- 11 Professional partnership owners consist of how many partners?
- A 2-20
 - B 2-50
 - C 1-220
 - D 1-50
- 12 How many private limited company owners are?
- A 1-50
 - B 2- infinity
 - C 2-20
 - D 2-50
- 13 Sole trader has a limited liability
- A True

B False

14 Which type of business ownership has a limited liability?

- A Sole Proprietorship and Partnership
- B Partnership and Private Limited Company
- C Sole Proprietorship and Public Company
- D Private Limited Company and Public Company

15 Which type of business ownership has an unlimited lifetime?

- A Sole Proprietorship and Partnership
- B Partnership and Private Limited Company
- C Sole Proprietorship and Public Company
- D Private Limited Company and Public Company

16 Which type of business ownership is the most easily formed?

- A Sole Proprietorship
- B Partnership
- C Public Company
- D Private Limited Company

17 Which type of business ownership does not have company tax?

- A Sole Proprietorship only
- B Partnership only
- C Sole Proprietorship and Partnership
- D Partnership and Private Limited Company

18 For partnership; the profit will be divided equally among the partners.

- A True
- B False

19 For sole proprietorship; the owner is not free to make a decision because of his limited knowledge and small capital

- A True
- B False

20 By law, a corporation may act as an individual where it may purchase, own and sell property in the name of the corporation itself.

- A True
- B False

- 21 Both Merchandising Firm and Manufacturing Firm have "Sales" account.
A True
B False
- 22 Service Revenue" is the result of a service company.
A True
B False
- 23 Pos Malaysia is a merchandising company.
A True
B False
- 24 Nestle (M) Bhd. is a merchandising firm.
A True
B False
- 25 Which statement differentiates types of business ownership?
A Statement of Profit or Loss
B Statement of Owner's Equity
C Statement of Comprehensive Income
D Statement of Financial Position
- 26 What is the name of the statement that complies with the accounting equation?
A Statement of Profit or Loss
B Statement of Owner's Equity
C Statement of Comprehensive Income
D Statement of Financial Position
- 27 Which statement is used to calculate the profit or loss of the business?
A Statement of Cash Flows
B Statement of Owner's Equity
C Statement of Comprehensive Income
D Statement of Financial Position
- 28 Statement of Financial Position
A MIA
B MAA
C MICPA
D MASB

- 29 Which functions belongs to MICPA
- A Determining the qualifications for members.
 - B Issuing new accounting standards.
 - C Recruiting, educate, train and assess a body of members skilled in accounting profession.
 - D Controlling the accounting practice in Malaysia.
- 30 Among the roles of MASB is to improve the theory and practice of accounting in various aspects.
- A True
 - B False
- 31 A partnership must have more than one owner.
- A True
 - B False
- 32 Owners of business firms are the only people who need accounting information.
- A True
 - B False
- 33 Financial statements are the major means of communicating accounting information to interested parties.
- A True
 - B False
- 34 "To assess the capability of the business in repaying debts or loans"
Which user refers to the above statement?
- A Invenstors
 - B Potential Investors
 - C Creditors
 - D Government Agencies
- 35 Shareholders are the ___ user of the accounting information.
- A Internal
 - B External

- A Accounting is a process of identifying, recording, classifying, summarizing, communicating, and interpreting the results of business or economic transactions to users in order for them to make better decisions.
- B Accounting is the process of preparing an Income Statement and Financial Position Statement.
- C Accounting is a process of identifying, recording, and classifying economic transactions to users.
- D Accounting is the process of preparing journals and ledgers.

37 The users of accounting information are...

- A Internal users
- B External users
- C Internal & External users
- D the Lembaga Hasil Dalam Negeri only

38 Types of business activities are...

- A Services and merchandising
- B Services and manufacturing
- C Services, manufacturing, and merchandising
- D Services, manufacturing, merchandising, and construction.

39 Types of Financial Statements are...

- A Statement of Comprehensive Income, and Statement of Financial Position
- B Statement of Comprehensive Income, Statement of Owner's Equity, and Statement of Financial Position
- C Statement of Comprehensive Income, Statement of Owner's Equity, Statement of Financial Position, and Statement of Cash Flows
- D Statement of Comprehensive Income, and Statement of Cash Flows

40 Types of business ownerships are...

- A Sole Proprietorship and Partnership
- B Sole Proprietorship, Partnership, and Company
- C Sole Proprietorship and Company

42 There are.....branches of accounting

- A 3
- B 4
- C 5
- D 6

43 Which one is true about Bookkeeping?

- A More extensive and involving a thorough work
- B Is an information system
- C Is a part of accounting

D Is the responsibility of the managers

44 The person in charge of Accounting is known as...

- A Accountant
- B Accounts Clerk
- C General Manager
- D Store Keeper

45 The accounting process involves all of the following except

- A identifying economic transactions that are relevant to the business.
- B communicating financial information to users by preparing financial reports.
- C recording nonquantifiable economic events.
- D analyzing and interpreting financial reports.

ANSWER

1	A	16	A	31	A
2	B	17	C	32	B
3	A	18	B	33	A
4	A	19	B	34	C
5	B	20	A	35	B
6	B	21	A	36	A
7	C	22	A	37	C
8	D	23	B	38	C
9	C	24	B	39	C
10	C	25	B	40	B
11	B	26	D	41	A
12	D	27	C	42	D
13	B	28	B	43	C
14	D	29	C	44	A
15	D	30	B	45	C

REINFORCEMENT EXERCISE CHAPTER 1
INTRODUCTION TO ACCOUNTING

- 1 Which of the following is **not** step in the accounting process?
 - A Identification
 - B Recording
 - C Verification
 - D Communication

- 2 The three types of business entities are...
 - A proprietorships, small businesses and partnerships
 - B proprietorships, partnerships and corporation
 - C proprietorships, large businesses and partnerships

- 3 Net income will result during a time period when...
 - A assets exceed liabilities
 - B assets exceed revenues
 - C expenses exceed revenues
 - D revenues exceed expenses

- 4 A Statement of Financial Position reports the assets, liabilities and owner's equity at a specific date.
 - A True
 - B False

- 5 A Statement of Financial Position reports information about the accounting equation.
 - A True
 - B False

- 6 Which of the following is not an advantage to the corporate structure?
 - A Double taxation
 - B Liability protection
 - C Continuity of ownership
 - D Allows for outside investment

- 7 A sole proprietorship may be owned by more than one person
 - A True
 - B False

- 8 Which of the following is a professional accounting bodies in Malaysia
 - A MASB
 - B MBA
 - C FRS
 - D GAAP

- 9 The function of Malaysian Institute of Accountant (MIA) is controlling the

accounting practice in Malaysia.

A True

B False

10 $\text{Assets} = \text{Liabilities} + \text{Profit}$

A True

B False

ANSWER:

1 C

6 A

2 B

7 B

3 D

8 A

4 B

9 A

5 A

10 B



UUM
Universiti Utara Malaysia

LAMPIRAN C

Ujian Pra dan Ujian Pasca KBAT

HOTS TEST

FINANCIAL ACCOUNTING AA015

This question contains 2 parts. Part A and Part B. You are required to answer all questions.

PART A (UPS 2021/2022)

There will be 5 multiple choice questions. Answer all questions.

1. is the process of identifying, recording and classifying, summarizing,
1. analysing and interpreting business transaction. (C1)
A Bookkeeping
B Transaction
C Accounting
D Financing
2. Which of the following can be classified as an intangible asset? (C2)
A Accounts Receivable.
B Goodwill.
C Capital.
D Mortgage.
3. Payment of an account payable affects the components of the accounting
equation in the following way. (C4)
A Decreases owner's equity and decreases liabilities.
B Increases assets and decreases liabilities.
C Decreases assets and increases owner's equity.
D Decreases assets and decreases liabilities.
4. Perniagaan Maju claims that the accounting information provided is based on

assumptions that the business will continue to operate in the future without the intention of dissolving it. (C4)

- A A. Going Concern Concept.
 - B B. Historical Cost Concept.
 - C C. Accounting Period Concept.
 - D D. Materiality Concept.
5. When the company pays salary to the employees, it will (C4)
- A A. Decrease the assets and decrease the liability.
 - B B. Decrease the assets and decrease the owner's equity.
 - C C. Increase the assets and increase the liability.
 - D D. Increase the liability and decrease the owner's equity

[5 marks]

PART B

Answer all questions.

QUESTION 1 [8 marks]

- a) State (C1) **four (4)** external users and explain how each user uses the accounting information. (PSPM AA015 2015/2016)

[4 marks]

- b) State (C1) and explain (C2) the accounting concept to be taken into account in recording transactions as below: (PSPM AA015 2016/2017)

- i. Ah Chong Enterprise made a RM7,000 sale to Orkid Sdn Bhd in July 2016.
Orkid Sdn

Bhd paid cash of RM3,000 at the point of sale. Ah Chong Enterprise credited its sales account for RM7,000 to record this transaction.

[2 marks]

- ii. Rasta Enterprise owns a business in Seri Kembangan since 1 October 2015.
Rasta

Enterprise starts to prepare its account on 30 September 2016, which is after one year of incorporation.

[2 marks]

QUESTION 2 [12 marks]

Fariz Iqbal is the owner of Mutiara Enterprise engaged in the business of making and selling furniture. Here are some of the transactions that took place in September 2014: (PSPM AA015 2014/2015)

- i. Mutiara Enterprise receives a verbal order to create a RM200 worth of bookshelves from Abu Nawas. Payment will be made when the bookshelf is ready within two weeks.
- ii. Bought a used lorry from Cahaya Pelangi Enterprise at RM50,000 by paying a cash advance of RM10,000 in cash.
- iii. At the beginning of the month, the business paid a half-month salary advance to an employee who lost his father. The employee is paid RM1,800 a month.
- iv. Fariz Iqbal used his savings to buy a sofa worth RM2,500 for the use of Mutiara Enterprise office.
- v. Paid electricity bill RM540 by cheque.
- vi. Fariz Iqbal took RM200 cash to pay for his children's school sports fees.

REQUIRED:
DIKEHENDAKI:

Show the effects (C4) of each of the above transactions on the **accounting equation** in the following format:

Example: Fariz Iqbal paid RM250 telephone bill in cash.

	ASSETS	=	LIABILITY	+	OWNER'S EQUITY		
No	Asset (RM)		Liability (RM)		Capital (RM)	Revenue (RM)	Expense (RM)
	Cash -250						Telephone expense -250

[12 marks]

ANSWER

PART A

- 1 C
- 2 B
- 3 D
- 4 A
- 5 B

PART B

QUESTION 1

(a)

External user	Purposes
Shareholders	To measure the level of return for each investment made by the company✓
Management	To make effective decisions, planning and control the activities and operations of the company✓
Employee	To analyze the level of career stability for the long term, the expectation of bonuses, performance and remuneration✓
Bank	To assess the feasibility of a business repaying a loan✓

(b)

- (i) Revenue recognition✓✓ – Revenue is recognised as transaction happens and being recorded when the revenue has been earned, rather than being recognised at the moment when cash is received in relevant accounting period ✓✓

[4✓ x ½ = 2]

- (ii) Accounting period ✓✓ –Preparation of financial statement is based on accounting period, for example a year ✓✓

OR not complied because accounts are prepared after one year of business incorporation

[4✓ x ½ = 2]

* Concept has to correct, then only the elaboration of definiton would be accepted.

QUESTION 2

	ASSETS ASET	=	LIABILITY LIABILITI	+	OWNER'S EQUITY EKUITI PEMILIK		
No	Asset Aset (RM)		Liability Liabiliti (RM)		Capital Modal (RM)	Revenue Hasil (RM)	Expense Belanja (RM)
(i)			No record				
(ii)	Vehicles +50,000✓ Cash -10,000✓		Cahaya Pelangi Enterprise +40,000✓				
(iii)	Bank/Cash -900✓ Prepaid Salary +900✓✓						
(iv)	Furniture +2,500✓				Capital +2,500✓		
(v)	Bank -540✓						Electricity expense -540✓
(vi)	Cash -200✓				Drawings -200✓		

LAMPIRAN D

Borang Soal Selidik GFC

SOAL SELIDIK KAJIAN

ARAHAN:

Item ID1. Adalah untuk kegunaan penyelidik sahaja. Oleh itu, anda diminta **TIDAK** memberi sebarang respons mengenainya.

ID1. (Untuk kegunaan penyelidik sahaja)

BAHAGIAN A: DEMOGRAFI PELAJAR

ARAHAN:

Sila beri maklumat yang diminta mengenai demografi anda sebagai responden. Sila tandakan dengan (/) pada ruangan yang disediakan di hujung item berkenaan. Segala maklumat yang diberikan adalah SULIT dan hanya digunakan untuk tujuan kajian ini sahaja. Kerjasama anda dalam menjawab soal selidik ini didahulukan dengan ucapan terima kasih.

JT2. Jantina

- 1 Lelaki
- 2 Perempuan

UM3. Umur

- 1 17-18
- 2 19-20
- 3 21-22

BG4. Bangsa

- 1 Melayu
- 2 Cina
- 3 India
- 4 Lain-lain

LK5. Lokasi tempat tinggal

- 1 Bandar
- 2 Luar bandar

BAHAGIAN B

ARAHAN:

- a. Pernyataan-pernyataan di bawah adalah berkaitan dengan penglibatan pelajar berdasarkan **strategi pengajaran *Gamified Flipped Classroom* (GFC)** dalam kelas anda.
- b. Sila baca pernyataan-pernyataan di bawah dengan teliti dan fikirkan tahap persetujuan anda atau sebaliknya bagi setiap pernyataan di bawah ini.
- c. Bulatkan salah satu daripada lima nombor bagi menggambarkan tahap persetujuan anda mengenai strategi pengajaran dan pembelajaran anda berdasarkan maksud seperti berikut:

Skor	Pemeringkatan	Simbol
1	Sangat tidak setuju	STS
2	Tidak setuju	TS
3	Neutral	N
4	Setuju	S
5	Sangat setuju	SS

Respons yang anda berikan ini tiada yang **betul** atau **salah**. Sila beri respons dengan ikhlas.

		STS	TS	N	S	SS
B1.	Penglibatan Tingkah laku					
6.	Saya menumpukan perhatian semasa pembelajaran <i>gamified flipped classroom</i> .					
7.	Saya akan mengikut arahan pensyarah dengan baik dalam pembelajaran <i>gamified flipped classroom</i> .					
8.	Saya mengambil bahagian secara aktif semasa perbincangan dalam pembelajaran <i>gamified flipped classroom</i> .					
9.	Saya akan belajar bersungguh-sungguh apabila belajar melalui <i>gamified flipped classroom</i> .					
B2.	Penglibatan Kognitif					
10.	Saya akan mencipta contoh sendiri bagi membantu saya memahami konsep penting dalam pembelajaran.					

11.	Saya menggabungkan idea yang berbeza dan logik semasa menjalankan aktiviti dalam kelas.					
12.	Saya sentiasa kaitkan pembelajaran dengan pengalaman saya sendiri apabila belajar dalam kelas ini.					
13.	Saya akan melibatkan diri apabila melaksanakan aktiviti dalam pembelajaran <i>gamified flipped classroom</i> .					
14.	Saya dapat menggunakan pelbagai bahan pengajaran sekiranya pensyarah saya menggunakan strategi <i>gamified flipped classroom</i> .					
15.	Saya mendapat pengetahuan baharu apabila pensyarah saya menggunakan pembelajaran <i>gamified flipped classroom</i> .					
B3.	Penglibatan Afektif					
16.	Saya seronok belajar menggunakan strategi <i>gamified flipped classroom</i> .					
17.	Saya tertarik dengan video kuliah yang diberikan dalam <i>gamified flipped classroom</i> .					
18.	Saya suka belajar cara tersendiri dalam pembelajaran <i>gamified flipped classroom</i> .					
19.	Saya berasa selesa belajar melalui <i>gamified flipped classroom</i> .					
20.	Belajar melalui <i>gamified flipped classroom</i> membuatkan saya gementar.					
21.	Menyertai pembelajaran <i>gamified flipped classroom</i> adalah sangat membosankan.					

~ TERIMA KASIH ~

LAMPIRAN E

Borang Soal Selidik FC

SOAL SELIDIK KAJIAN

ARAHAN:

Item ID1. Adalah untuk kegunaan penyelidik sahaja. Oleh itu, anda diminta **TIDAK** memberi sebarang respons mengenainya.

ID1. (Untuk kegunaan penyelidik sahaja)

BAHAGIAN A: DEMOGRAFI PELAJAR

ARAHAN:

Sila beri maklumat yang diminta mengenai demografi anda sebagai responden. Sila tandakan dengan (/) pada ruangan yang disediakan di hujung item berkenaan. Segala maklumat yang diberikan adalah SULIT dan hanya digunakan untuk tujuan kajian ini sahaja. Kerjasama anda dalam menjawab soal selidik ini didahulukan dengan ucapan terima kasih.

JT2. Jantina

- 1 Lelaki
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- 1 17-18
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BG4. Bangsa

- 1 Melayu
- 2 Cina
- 3 India
- 4 Lain-lain

LK5. Lokasi tempat tinggal

- 1 Bandar
- 2 Luar bandar

BAHAGIAN B**ARAHAN:**

- a. Pernyataan-pernyataan di bawah adalah berkaitan dengan penglibatan pelajar berdasarkan **strategi pengajaran *Flipped Classroom* (FC)** dalam kelas anda.
- b. Sila baca pernyataan-pernyataan di bawah dengan teliti dan fikirkan tahap persetujuan anda atau sebaliknya bagi setiap pernyataan di bawah ini.
- c. Bulatkan salah satu daripada lima nombor bagi menggambarkan tahap persetujuan anda mengenai strategi pengajaran dan pembelajaran anda berdasarkan maksud seperti berikut:

Skor	Pemeringkatan	Simbol
1	Sangat tidak setuju	STS
2	Tidak setuju	TS
3	Neutral	N
4	Setuju	S
5	Sangat setuju	SS

Respons yang anda berikan ini tiada yang **betul** atau **salah**. Sila beri respons dengan ikhlas.

		STS	TS	N	S	SS
B1.	Penglibatan Tingkahlaku					
6.	Saya menumpukan perhatian semasa pembelajaran <i>flipped classroom</i> .					
7.	Saya akan mengikut arahan pensyarah dengan baik dalam pembelajaran <i>flipped classroom</i> .					
8.	Saya mengambil bahagian secara aktif dalam perbincangan dalam pembelajaran <i>flipped classroom</i> .					
9.	Saya akan belajar bersungguh-sungguh apabila belajar melalui <i>flipped classroom</i> .					

B2.	Penglibatan Kognitif					
10.	Saya akan mencipta contoh sendiri bagi membantu saya memahami konsep penting dalam pembelajaran.					
11.	Saya menggabungkan idea yang berbeza dan logik semasa menjalankan aktiviti dalam kelas.					
12.	Saya sentiasa kaitkan pembelajaran dengan pengalaman saya sendiri apabila belajar dalam kelas ini.					
13.	Saya akan melibatkan diri apabila melaksanakan aktiviti dalam pembelajaran <i>flipped classroom</i> .					
14.	Saya dapat menggunakan pelbagai bahan pengajaran sekiranya pensyarah saya menggunakan strategi <i>flipped classroom</i> .					
15.	Saya mendapat pengetahuan baharu apabila pensyarah saya menggunakan pembelajaran <i>flipped classroom</i> .					
B3.	Penglibatan Afektif					
16.	Saya seronok belajar menggunakan strategi <i>flipped classroom</i> .					
17.	Saya tertarik dengan video kuliah yang diberikan dalam <i>flipped classroom</i> .					
18.	Saya suka belajar cara tersendiri dalam pembelajaran <i>flipped classroom</i> .					
19.	Saya berasa selesa belajar melalui <i>flipped classroom</i> .					
20.	Belajar melalui <i>flipped classroom</i> membuatkan saya gementar.					
21.	Menyertai pembelajaran <i>flipped classroom</i> adalah sangat membosankan.					

~ TERIMA KASIH ~

LAMPIRAN F

Penilaian Pemerhatian

Aktiviti Pensyarah Dalam Strategi GFC

Nama Guru: _____ Tarikh: _____

Bil	Proses Perkembangan	Aspek yang Dinilai	Ada	Tiada	Catatan
			✓	✓	
1	Pendahuluan (Pre-class)	Penyampaian tentang isi pembelajaran			
		Penjelasan isi kandungan melalui tontonan video yang diberikan dalam Google Classroom			
2	Aktiviti Pengajaran dan Pembelajaran (In-class)	Bahan bantuan mengajar menggunakan aplikasi gamifikasi			
		- Quizizz			
		- Kahoot!			
		- Nearpod			
3	Kumpulan	Proses pembahagian kumpulan			
		Penjelasan tentang tugas kumpulan			
		Galakan dan nasihat diberikan untuk bekerjasama			
		Bimbingan dan dorongan diberikan sepanjang proses pengajaran dan pembelajaran			
4	Pertandingan	Proses kelancaran pertandingan kumpulan			
		Penjelasan tentang peraturan pertandingan			
5	Penghargaan kumpulan	Proses kiraan markah			
		Pemberian penghargaan			
		Reaksi dan kepuasan pelajar			
6	Penutup	Guru menyimpulkan pelajaran			

Ulasan

Tandatangan guru,

Tandatangan pemantau,

.....

.....

LAMPIRAN G

Borang Penilaian Kesahan Rancangan Instruksional

GAMIFIED FLIPPED CLASSROOM : KESAN TERHADAP KEMAHIRAN BERFIKIR ARAS TINGGI DAN PENGLIBATAN PELAJAR MATRIKULASI PERAKAUNAN

Panel Pakar,

Penilaian Rancangan Instruksional ini adalah bagi melihat kesesuaian penggunaannya dalam strategi *Gamified Flipped Classroom* bagi subjek Perakaunan. Kajian ini memerlukan pertimbangan kepakaran anda dalam menilai kesahan kandungan bagi Rancangan Instruksional ini. Sila bersikap objektif dan konstruktif dalam memberi ulasan anda dan gunakan skala penilaian berikut:

Tahap persetujuan:

1 = Sangat tidak Setuju

2 = Tidak setuju

3 = Neutral

4 = Setuju

5 = Sangat setuju

No	Pernyataan	Skala persetujuan				
1	Kandungan Rancangan Instruksional ini menepati sasaran populasi.	1	2	3	4	5
2	Kandungan Rancangan Instruksional ini boleh dilaksanakan dengan sempurna.	1	2	3	4	5
3	Kandungan Rancangan Instruksional ini bersesuaian dengan masa yang diperuntukkan.	1	2	3	4	5
4	Kandungan Rancangan Instruksional ini boleh meningkatkan Kemahiran Berfikir Aras Tinggi pelajar.	1	2	3	4	5
5	Kandungan Rancangan Instruksional ini boleh meningkatkan penglibatan pelajar.	1	2	3	4	5
6	Kandungan Rancangan Instruksional untuk fasa sebelum kelas (pre-class) boleh dilaksanakan dengan sempurna.	1	2	3	4	5
7	Kandungan Rancangan Instruksional untuk fasa semasa kelas (in-class) boleh dilaksanakan dengan sempurna.	1	2	3	4	5
8	Kandungan Rancangan Instruksional untuk fasa di luar kelas (out-class) boleh dilaksanakan dengan sempurna.	1	2	3	4	5
9	Aktiviti gamifikasi dalam Rancangan Instruksional sesuai dengan topik pembelajaran.	1	2	3	4	5
10	Pemilihan media (<i>Quizizz</i> , <i>Kahoot!</i> dan <i>Nearpod</i>) sesuai dengan topik pembelajaran.	1	2	3	4	5

Ulasan/Cadangan :

~ TERIMA KASIH ~



BORANG PENILAIAN KESAHAN RANCANGAN INSTRUKSIONAL

GAMIFIED FLIPPED CLASSROOM : KESAN TERHADAP KEMAHIRAN BERFIKIR ARAS TINGGI DAN PENGLIBATAN PELAJAR MATRIKULASI PERAKAUNAN

Panel Pakar,

Penilaian Rancangan Instruksional ini adalah bagi melihat kesesuaian penggunaannya dalam strategi *Flipped Classroom* bagi subjek Perakaunan. Kajian ini memerlukan pertimbangan kepakaran anda dalam menilai kesahan kandungan bagi Rancangan Instruksional ini. Sila bersikap objektif dan konstruktif dalam memberi ulasan anda dan gunakan skala penilaian berikut:

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No	Pernyataan	Skala persetujuan				
1	Kandungan Rancangan Instruksional ini menepati sasaran populasi.	1	2	3	4	5
2	Kandungan Rancangan Instruksional ini boleh dilaksanakan dengan sempurna.	1	2	3	4	5
3	Kandungan Rancangan Instruksional ini bersesuaian dengan masa yang diperuntukkan.	1	2	3	4	5
4	Kandungan Rancangan Instruksional ini boleh meningkatkan Kemahiran Berfikir Aras Tinggi pelajar.	1	2	3	4	5
5	Kandungan Rancangan Instruksional ini boleh meningkatkan penglibatan pelajar.	1	2	3	4	5
6	Kandungan Rancangan Instruksional untuk fasa sebelum kelas (pre-class) boleh dilaksanakan dengan sempurna.	1	2	3	4	5
7	Kandungan Rancangan Instruksional untuk fasa semasa kelas (in-class) boleh dilaksanakan dengan sempurna.	1	2	3	4	5
8	Kandungan Rancangan Instruksional untuk fasa di luar kelas (out-class) boleh dilaksanakan dengan sempurna.	1	2	3	4	5

Ulasan/Cadangan :

~ TERIMA KASIH ~



PENGESAHAN PENILAIAN RANCANGAN INSTRUKSIONAL

Nama Pelajar : Wan Masitah binti Wan Majid
Bidang Pengajian : Ijazah Doktor Falsafah (Sains Sosial/Ilmu Pendidikan/Sastera Ikhtisas)
Nombor Matriks : 904644
Penyelia : 1) Dr. Farah binti Mohamad Zain

Saya mengesahkan bahawa instrumen kajian ini adalah * **SESUAI / TIDAK SESUAI** bagi kajian berkaitan *Gamified Flipped Classroom* : Kesan Terhadap Kemahiran Berfikir Aras Tinggi Pelajar dan Penglibatan Pelajar Matrikulasi Jurusan Perakaunan.

Sekian.

Tandatangan : _____

Cop Jawatan :

Tarikh : _____

*potong bagi yang berkenaan

LAMPIRAN H

Pelan Pengurusan Risiko

UNIT PERAKAUNAN KOLEJ MATRIKULASI PERLIS

	KONTEKS	KATEGORI RISIKO	TAHAP	CADANGAN MENGATASINYA
1	Pelajar tiada asas dalam subjek Perakaunan	Operasi	Tahap 3 Berpeluang untuk berlaku	Program Akademi Akaun - Memupuk minat dan pengetahuan asas untuk menarik minat pelajar belajar akaun.
2	Pelajar tidak mendapat gred A dalam AA 015	Operasi	Tahap 3 Berpeluang untuk berlaku	Program Smart Accounting - Mengkategorikan pelajar kepada 3 iaitu Cemerlang, Sederhana dan Lemah - Pelajar cemerlang akan menjadi fasilitator kepada pelajar sederhana dan lemah - Pensyarah sebagai pembimbing -
3	Pelajar gagal dalam AA 015.	Operasi	Tahap 3 Berpeluang untuk berlaku	Program ABC (Aku Boleh Cemerlang) - Membantu pelajar gagal untuk mencapai keputusan PSPM sekurang-kurangnya mendapat gred B

- Pelajar di susun mengikut kategori Cemerlang , Sederhana, Lemah dan Gagal melalui Ujian Selaras yang diadakan di peringkat unit.

LAMPIRAN I

Penerbitan Artikel

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□ 1610

Gamified flipped classroom in education: a systematic review

Wan Masitah Wan Majid, Farah Mohamed Zain, Siti Noor Ismail

Awang Had Salleh Graduate School of Arts and Science, Universiti Utara Malaysia, Sintok, Malaysia

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ABSTRACT

Nowadays, gamified flipped classrooms (GFC) are a cutting-edge teaching method. Using gamification techniques with flipped classrooms (FC) significantly positively affects teachers and students. This study reviews the impact of GFC research on education methodically. Hence, the study investigated a comprehensive literature review of 52 empirical research publications published between 2018 and 2022 in various electronic databases and on the web. Note that the review established the foundation for the significance of upcoming research projects by critically assessing and evaluating the different inconsistencies in the literature. In addition to examining the contradictory results of previous research, the study offer a framework as well as guidance for future researchers in terms of theoretical models, methodology, game tools or online platforms, game activity, game elements, variables, and the impact of a GFC.

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Corresponding Author:

Wan Masitah Wan Majid

Awang Had Salleh Graduate School of Arts and Science, Universiti Utara Malaysia

06010 UUM Sintok, Kedah, Malaysia

Email: wannmasitah83@gmail.com

1. INTRODUCTION

The educational landscape is continually evolving in line with the nation's brisk economic growth and development following the advancement of technology. Therefore, the curriculum for excellent education is designed to create a highly educated society capable of overcoming the challenges of modern living. Education is not only changing due to the technological environment but also due to the emergence of new methodologies [1]. The new approach emphasizes student-centered learning to enhance interaction and foster students' creativity and divergent thought. Here, game-based learning (GBL) refers to a teaching method that aids in boosting student engagement, and research on it has advanced over the past ten years.

According to Charlo *et al.* [1], gamification in education has been a quickly growing subject of study since 2013. Additionally, the 2019 e-learning trend report globally by Docebo demonstrates how gamification techniques in the classroom foster a favorable interaction between learning and teaching. The gamified flipped classrooms (GFC) strategy is among the most popular instructional innovations instructors implement worldwide [2]. Other than that, gamification works well to boost student engagement. The gamification of the flipped classrooms (FC) has been implemented to help instructors draw in students [3].

Bergmann and Sams [4] developed the FC teaching strategy to deal with the issue of students missing class. As an alternative to traditional classroom instruction, FC engages students in various learning activities, including independent online or digital learning outside class and task completion. Moreover, FC is a class taught the opposite way it would normally be [5]. Face-to-face instruction was previously used in the classroom, and individual or homework training was replaced with self-learning in the student's own space with multimedia materials available in advance. Meanwhile, gamification resembles the application of game design features for non-game contexts. Note that it is an approach that enhances rather than replaces teaching [5]. Figure 1 illustrates the difference between traditional learning and flipped classroom learning.

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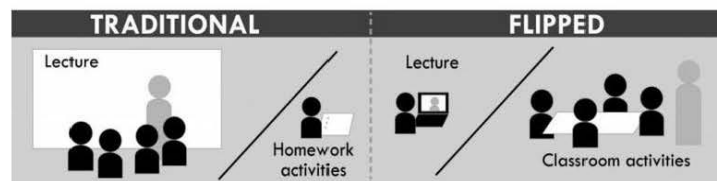


Figure 1. The difference between traditional learning and FC [6]

Nevertheless, the findings of research conducted by Lo and Hew [7] on the cognitive engagement accomplishment with regard to grade 9 students in Hong Kong cannot conclude that GFC learning is better than classrooms that are not gamified. They recommend conducting more research to examine the learning differences when employing the FC technique with GFC. Studies on gamification, specifically in the higher education context, still require a theoretical foundation and adequate design and measurement [5]. Although the data meta-analysis indicates that gamification favors learning and motivation, gamification research is still required to understand its benefits fully. Note that most studies focus on methodological assertiveness, gamification theory application, as well as analysis and assessment pertaining to learning processes, particularly in the setting of higher education [8].

A systematic review with respect to articles published between 2018 and 2022 in Scopus, Science Direct, ERIC, ProQuest, Dimensions, and Google Scholar was conducted using thematic and content analysis. These reviews offer insights into a GFC's trends, research techniques, and effects. In addition, the analysis will address the research questions outlined, namely: i) What theoretical models have been employed in a GFC?; ii) What methodologies were used in a GFC?; iii) What gaming tools or online platforms have been used in a GFC?; iv) What game activities and elements have been used in a GFC?; v) What variables have been explored; and vi) How does gamification in FCs impact students' learning?

2. RESESEARCH METHOD

There have been several recent studies on systematic assessments conducted worldwide. However, only a few educational research were conducted in the context of the GFC overview. The necessity for a systemic investigation of the effects of GFC in education is covered in this section. The preferred reporting items for systematic reviews and meta-analyses (PRISMA) approach, a published guideline for performing a systematic literature review (SLR), is employed in this analysis. Subsequently, the four essential sub-sections, comprising identification, screening, eligibility, as well as data abstraction, are also summarized in this section.

2.1. Identification

The systematic review process is broken down into three primary stages that helped choose various relevant papers for this study. The initial phase is keyword recognition and searching for connected, related terms using the thesaurus, dictionaries, encyclopedias, and prior research. As a result, search strings have been developed for the databases Scopus, Science Direct, ERIC, ProQuest, Dimensions, and Google Scholar after all pertinent terms had been chosen, as presented in Table 1. Total 144 papers were successfully retrieved from both databases as part of the current study endeavor's first stage with regard to the systematic review process.

Table 1. The search strings

Database	Keyword
Scopus	TITLE-ABS-KEY (game OR gamifi*) AND (flip OR "Flipped-classroom" OR "flipped classroom") AND (learning OR instruction OR education) AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018)) AND (LIMIT-TO (LANGUAGE, "English"))
Science Direct	"gamified" "gamification" "flipped classroom"
ERIC	(gamified OR gamification) AND flipped classroom
ProQuest	"Gamified flipped classroom"
Dimensions	"Gamified flipped classroom", "gamified" "gamification", "flipped classroom"
Google Scholar	"Gamified flipped classroom" OR "gamified" "gamification" OR "gamifying" AND "flipped classroom"

2.2. Screening

The second step refers to the data screening process, in which survey title, accessibility, overlap, year of publication, and unrelated articles were published. Based on what the researchers read in the abstract, only 103 similar publications were established after this approach was established. Table 2 lists the selection criteria for the lookup of pertinent data. The publication year ranges from 2018 to 2022, as well as only article journals are included. Note that the articles are only chosen in English.

Table 2. The selection criterion for searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Year	2022	<2022
Literature type	Journal (research articles only)	Journal (conference proceeding, book chapter)

2.3. Eligibility

The third step, called eligibility, has 59 items. At this point, all article titles and important content were carefully examined to ensure they met the inclusion criteria and complemented the present research's objectives. Four studies were excluded since they were irrelevant to the GFC. Hence, 52 papers are available for review Figure 2.

2.4. Data extraction and analysis

Further analysis of the 52 papers was conducted to present compiled data findings for the study topics. It is crucial to provide the data gleaned from the studies' validity and credibility. Consequently, a triangulation procedure was employed. First, a thorough examination and analysis of the ideas, methodology, goals, outcomes, and linkages between gamified studies and education will be conducted. All studies' information was collected while maintaining the validity of the research through a systematic keyword search. Finally, we finalized our triangulation process by conducting a document analysis to ensure our findings' convergence and verification. The following significant details were taken from each article: i) learning theories/models; ii) methods; iii) game activity; iv) gamification tools/platform; v) game elements; vi) variable; vii) findings. The flow diagram of the four stages involved in the systematic review process using the PRISMA statement is illustrated in Figure 2.

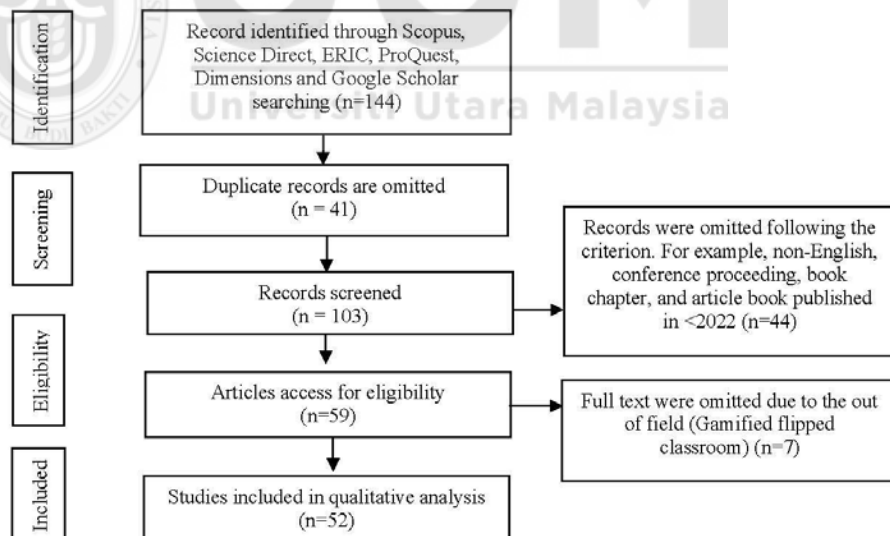


Figure 2. Flow diagram of the proposed search study [9]

3. RESULTS AND DISCUSSION

Based on five suggested research questions, the study's results will be discussed in this part. The significant findings are presented in this section regarding the main research goals. To view the major issue discussed and analyzed, we extracted the top three keywords from the 52 papers. Correspondingly, the top three search terms were "gamified," "gamification," and "flipped classroom". Table 3 demonstrates the research article based on year and title. A study conducted between 2018 and 2022 discovered 52 articles about GFC strategies used in multi-level education. As a result, research on GFC has been published more frequently each year. Subsequently, the number of publications published annually is presented in Figure 3.

Table 3. The research article finding based on year

No	Author	Year	No	Author	Year
1	[3]	2020	27	[32]	2020
2	[5]	2021	28	[33]	2021
3	[6]	2020	29	[34]	2021
4	[7]	2020	30	[35]	2021
5	[10]	2020	31	[36]	2021
6	[11]	2020	32	[37]	2022
7	[12]	2022	33	[38]	2021
8	[13]	2021	34	[39]	2021
9	[14]	2019	35	[40]	2021
10	[15]	2018	36	[41]	2021
11	[16]	2019	37	[42]	2021
12	[17]	2018	38	[43]	2021
13	[18]	2018	39	[44]	2021
14	[19]	2020	40	[45]	2021
15	[20]	2020	41	[46]	2022
16	[21]	2019	42	[47]	2022
17	[22]	2021	43	[48]	2022
18	[23]	2019	44	[49]	2019
19	[24]	2019	45	[50]	2020
20	[25]	2020	46	[51]	2018
21	[26]	2021	47	[52]	2022
22	[27]	2018	48	[53]	2022
23	[28]	2018	49	[54]	2022
24	[29]	2019	50	[55]	2022
25	[30]	2020	51	[56]	2022
26	[31]	2020	52	[57]	2019

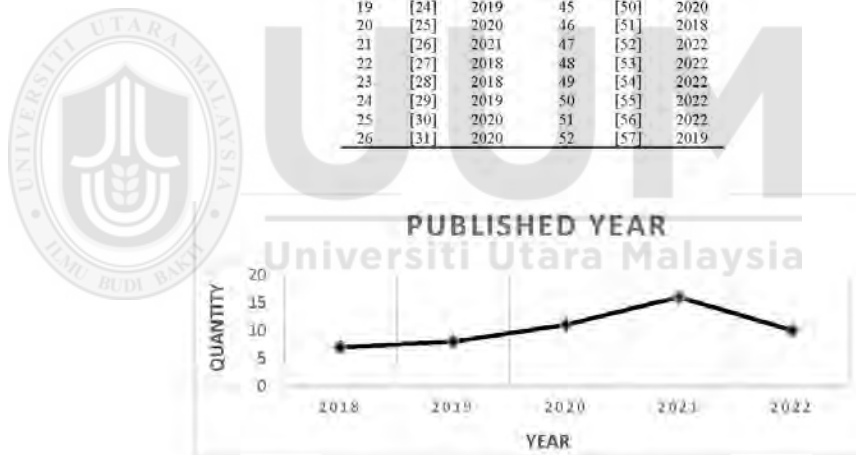


Figure 3. Number of publications each year

3.1. Theoretical models

In the 52 papers that were reviewed, more than half of the researchers applied the self-determination theory (SDT) to examine how gamification impacted student motivation by 43%, followed by the ARCS model by 11%, flow theory by 7%, cognitive learning theory, behavioral reinforcement theory, social comparison theory 5% each. Other theories by 9% include active learning theory, constructivism theory, sociocultural learning theory, taxonomy bloom, and trait activation theory (TAT). Note that learner and pedagogical models are among the additional models employed in the research of the GFC of 7%. Figure 4 shows the theories and model use in GFC studies.

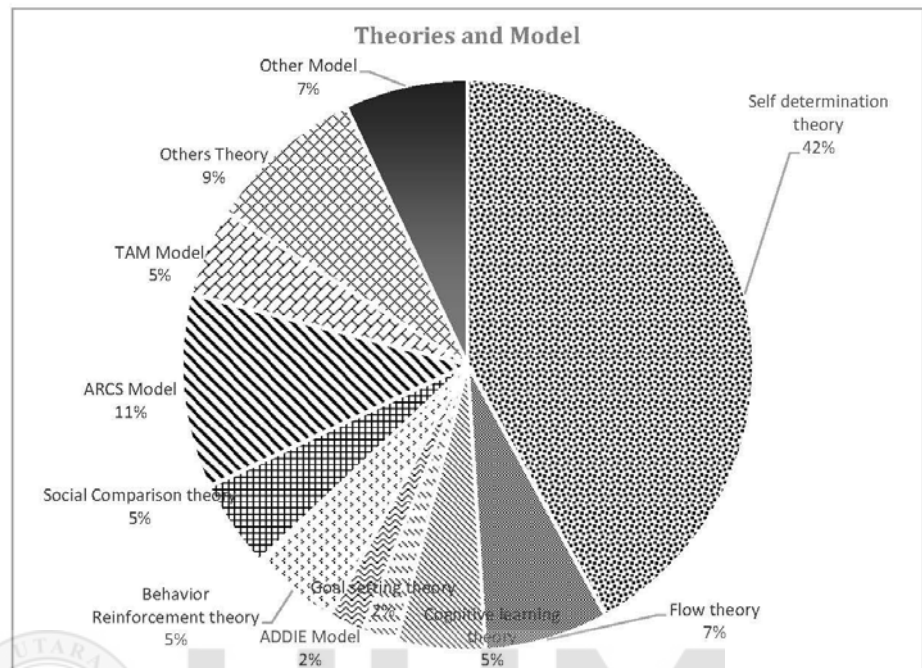


Figure 4. Theory and model use in GFC studies

3.2. Methodology approach

The quantitative methodology was discovered to be applied by most studies, followed by the mixed-method approach. Meanwhile, the quantitative method was utilized in 32 studies using various data collection techniques, including experimental tests, assessments, and questionnaire surveys as shown in Figure 5. An analysis of the publications reveals that only one study employed a qualitative method and that 19 employed mixed-method to collect data utilizing various methodologies. Observations, surveys, interviews, and assessments are a few of these.

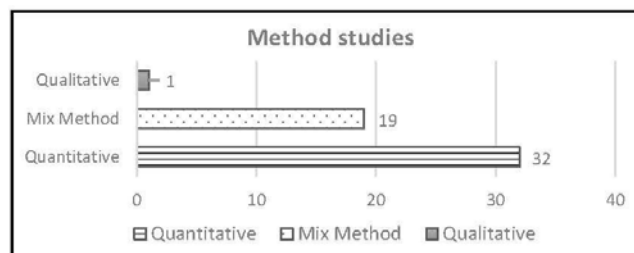


Figure 5. Method used in gamification studies

3.3. Gaming tools or online platform

The survey's findings revealed that different platforms and tools were used to conduct teaching and learning activities through GFC. The platforms used in GFC are listed in Table 4. Nevertheless, some studies miss specifying the platforms and technologies employed for teaching and learning.

Table 4. Gaming tools or online platforms used in GFC

No	Author	Year	Tools/Platform
1	[3]	2020	Ed puzzle, Kahoot! Nearpod, Socrative, Quizlet, and Padlet
2	[5]	2021	Kahoot! Quizalize and Quizizz
3	[6]	2020	ioEduc and Kahoot!
4	[7]	2020	Learning management system (Moodle)
5	[10]	2020	Gamified learning course
6	[11]	2020	LMS (Moodle) and YouTube
7	[12]	2022	Kahoot or Socrative, or CrossQuestion educational game.
8	[13]	2021	Edmodo App
9	[14]	2019	Educaplay
10	[15]	2018	YouTube, Moodle, Kahoot!
11	[16]	2019	The iSpring Quiz Maker
12	[17]	2018	The Protégé designed by Playware Studios
13	[18]	2018	Moodle
14	[19]	2020	Socrative
15	[20]	2020	Gynkhana room for education and evaluation in nursing studies (GREENSC)
16	[21]	2019	Socrative
17	[22]	2021	The online University platform, Moodle
18	[23]	2019	Kahoot!
19	[24]	2019	TabooTM or Time's up!TM, KahootTM, SocrativeTM, QuizizzTM, Collaborative Problems Jigsaw
20	[25]	2020	Socrative and Kahoot
21	[26]	2021	Socrative, Kahoot, Moodle and Blackboard Collaborate.
22	[27]	2018	Moodle
23	[28]	2018	Cisco and Secure Volunteer
24	[29]	2019	Unity3d video game engine
25	[30]	2020	Game immersion questionnaire (GIQ)
26	[31]	2020	Jigsaw, Kahoot, Socrative
27	[32]	2020	TipOn
28	[33]	2021	Kahoot! Quizlet, and Prodigy
29	[34]	2021	Self-develop gamification project
30	[35]	2021	Computer-assisted games
31	[36]	2021	AI-enabled gamified web-based online learning application
32	[37]	2022	Kahoot!
33	[38]	2021	Gamified interactive e-book
34	[39]	2021	Self-develop gamification learning
35	[40]	2021	Econplus champions league and Kahoot!
36	[41]	2021	Vocabulary games from Khate-Sefied
37	[42]	2021	Kahoot!
38	[43]	2021	Moodle
39	[44]	2021	Zoom
40	[45]	2021	CrossQuestion
41	[46]	2022	CrossQuestion multiplayer game
42	[47]	2022	Moodle, Quiz
43	[48]	2022	Educaplay
44	[49]	2019	Moodle
45	[50]	2020	Ed Puzzle, LMS Moodle platform
46	[51]	2018	iSpring Learn, LMS
47	[52]	2022	Moodles
48	[53]	2022	Saudi national online learning
49	[54]	2022	Self-develop gamification learning
50	[55]	2022	Kahoot! And Learning Apps
51	[56]	2022	Kahoot!
52	[57]	2019	Trivia quiz game

3.4. Game activity and game element

The teaching and learning process is delivered through GFC techniques, with varied activities based on the data gathered. Figure 6 depicts the proportion of classroom activities that utilize the GFC technique. According to the survey results, quizzes (41%) and learning activities (21%) were the areas where gamification was most prevalent. Meanwhile, the percentage for group projects (14%), formative assessment (11%), exercise (7%) and assessment (6%) accordingly.

Gamification contains various elements that might boost students' engagement and motivation in the classroom. According to the analysis done on the 52 articles, several gamification elements are applied. For example, according to the literature review, researchers preferred employing points and badges over other factors when rewarding winners. The gamification elements employed by the researchers in the GFC study are demonstrated in Figure 7.

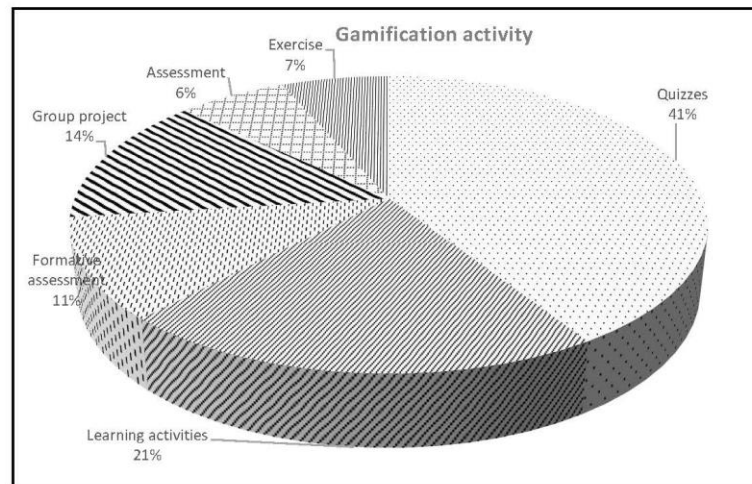


Figure 6. Percentage of activities using gamification that was carried out

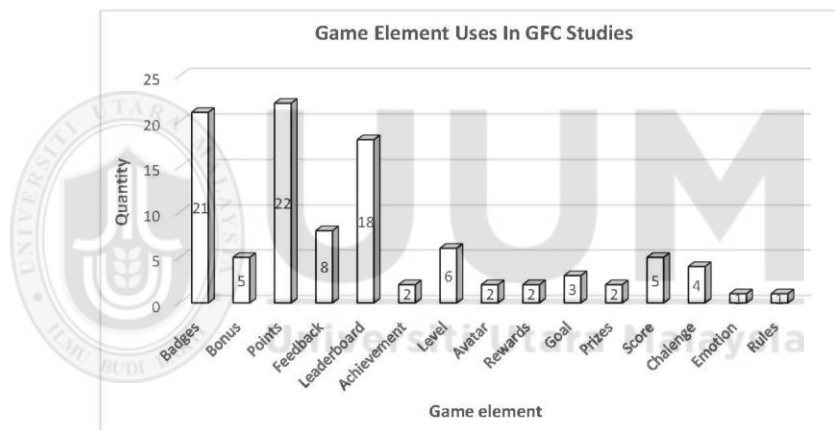


Figure 7. Game element use in GFC studies

3.5. Variables and impact on students' learning

Various variable was utilized in earlier investigations. However, most studies examined how gamification in FC impacted student performance, motivation, perception, and engagement. The variables examined alongside the GFC are listed in Table 5.

Table 5. Independent variables involved and their impact on the GFC study

No	Ref.	Variable	A gamified flipped classroom impact
1	[3]	Students' and teachers' perceptions	Gamified classroom benefits comprise improved learning performance and outcomes, developed learning abilities and confidence, as well as enhanced learning motivation and engagement, which both students and teachers acknowledged.
2	[5]	Intrinsic motivation, social relatedness, competence need satisfaction.	Gamified in-class activities have favorable benefits on intrinsic motivation as well as social connectedness. Nevertheless, they possess no discernible impact on meeting competence needs.
3	[6]	Student's engagement	With TechTeach, learning and enjoyment are possible in the classroom whether students are physically present.
4	[7]	Achievement and cognitive engagement	GFC enhanced students' cognitive engagement.
5	[10]	Students' motivation	The GFC strategy has a beneficial effect on students' motivation.
6	[11]	Study habits	The students liked the gamified CS1, team-based, flipped course and were inspired to enhance their study habits.
7	[12]	Student engagement, students' task orientation, students' satisfaction, students' attitude regarding the technique's complexity, students' general skills, students' knowledge, students' motivation, students' course learning outcomes.	Regarding technical difficulty, task orientation, student participation, satisfaction, knowledge, as well as learning motivation, the GFC learning technique performs better.
8	[13]	Students' achievement and perceptions	The use of digital game-based (DGB) as well as play curricular activity reflection discussion (PCARD) flipped learning considerably increases the grammar abilities of English as a Foreign Language (EFL) learners over the control group.
9	[14]	Achievement (vocab)	Students may benefit from utilizing the gamified flipped classroom application (GFCa) to enhance vocabulary proficiency.
10	[15]	Motivation	Students' motivation and competitiveness in class increased due to the gamification-enhanced activities that encouraged flipped learning.
11	[16]	Learner performance and need satisfaction	Because the GFC satisfies their intrinsic psychological requirements for competence, autonomy, and relatedness, participants have attained high motivation.
12	[17]	Students' motivation	When used effectively, gamification can encourage students and assist them in scaffolding reading assignments before lectures.
13	[18]	Students' motivation, perception	The goal-access-feedback-challenge-collaboration (GAFCC) style of gamification favors engaging learners because it provides students with the impression that the game benefits their learning.
14	[19]	Students' Perception	Applying gamification tactics also helped boost the program's favorable evaluation.
15	[20]	Students' perception	Over 60% of students agreed or strongly stated that GREENS helped enhance assessment, fun, learning, teamwork, as well as motivation.
16	[21]	Motivation and perception	The program received a very positive rating regarding motivation and sense of learning.
17	[22]	Attitudes, self-efficacy and emotions	Analysis of attitudes and self-efficacy reveals that most items exhibit higher self-efficacy and more favorable opinions following the intervention.
18	[23]	Student's perceived usefulness, engagement intention, and satisfaction	These strategies successfully alter students' perceived value and intended level of participation. From the participants' perspectives, gamification produces better results than an FC.
19	[24]	Students' perception and motivation	The findings presented increased student recognition and motivation with regard to effective teaching techniques, as well as a demonstrable enhancement in good feelings toward scientific topics and science education.
20	[25]	Students' engagement, effectiveness, the complexity of the GFC, student satisfaction, and task orientation	The GFC method has improved their experience for a better outcome. Additionally, it has aided their development as independent learners fiercely motivated to outperform their peers in class and on other GFC tasks.
21	[26]	Students' motivation	Based on the ARCS model, method, and tactics, students' motivation has been boosted and/or maintained by blended teaching methodologies (BTM), ultimately improving their learning.
22	[27]	Students' motivation, learning achievements and perception	Compared to the students participated in the control group, the experimental group's students exhibited a much higher motivation for academic performance.
23	[28]	Learning process	According to the statistics, the midterm tests, quizzes, lab work, average attendance, as well as final exams increased by almost 20% compared to the traditional classroom approach.
24	[29]	Student competencies	Compared to those who study the subject using conventional methods, the average grades in the evaluations significantly increased.
25	[30]	Students' behaviors, immersion experience, reading comprehension performance, as well as collaborative interaction relationship	This study addresses the need to encourage high-quality annotations in gamification methods, which can significantly improve students' reading comprehension.
26	[31]	Interaction data, students' participation, and achievement	The experimental group received greater involvement, achievement ratings, as well as interaction data than the control group.

Table 5. Independent variables involved and their impact on the GFC study (*continued*)

No	Ref.	Variable	A gamified flipped classroom impact
27	[32]	Curiosity and language anxiety	First, the two varieties mentioned earlier of epistemic curiosity negatively affect English learning anxiety. Second, deprivation-type epistemic curiosity (DEC) was positively correlated with attitude towards gamification (ATG), but interest-type epistemic curiosity (IEC) had no discernible effect on ATG. Third, ATG could accurately forecast how much students will learn.
28	[33]	Students' attitudes concerning competition, online collaboration, as well as learning gamification	The gamified learning experience positively impacted the attitudes of participants toward learning gamification.
29	[34]	Creative Thinking Skills	The research established no changes in the learning environment. Rather, the activity type as well as the interaction between teams, most significantly impacted critical thinking skills.
30	[35]	Students' learning in Chemistry	The experimental groups' learning activities and outcomes have attained classical completeness, according to the post- as well as pre-tests results.
31	[36]	Students' perception	In general, students possess positive opinions concerning the application as well as the added features. Other than that, 75% of students believe that the application can motivate students to stay participated in the physics course.
32	[37]	students' engagement	According to the findings of a semester-long study, there is no difference between poll- as well as point-based gamification. Nevertheless, point-based gamification in quiz mode increases reported student engagement more than in traditional lectures.
33	[38]	Learning performance, motivation, and meta-cognition tendency	Students from the gamified interactive e-book in the mathematical flipped classroom (GIEBFL) did much better than those from traditional instruction (TI) as well as conventional flipped learning (CFL). Other than that, the survey of students' motivation for learning revealed that GIEBFL students were more motivated than TI and CFL students. Here, GIEBFL students considerably outperformed TI students in terms of metacognition propensity.
34	[39]	Students' engagement and motivation	The various gamification tactics utilized to increase engagement received excellent feedback from students. In addition, students said they progressed in their writing, presentations, and comprehension throughout the course.
35	[40]	Students' achievement and satisfaction	A satisfying active learning environment is produced by constructing an empowered as well as co-creative gaming experience that supports students to establish value in general.
36	[41]	Vocabulary learning	The flipped context's use of gamification may substantially impact vocabulary development.
37	[42]	Students' perceptions	The students believed that using 'Kahoot!' boosted their knowledge of subjects, increased engagement, drove them to learn, and created a positive learning atmosphere.
38	[43]	Behavioral Engagement and Achievement	Students' involvement in the pre-class activities of the FC increased significantly while using the GFC mode of instruction compared to the control group.
39	[44]	Motivation, interest and fun	Happiness, pleasure, and enjoyment are three good emotions that dramatically rise following the intervention.
40	[45]	Student motivation	Gamification can increase student motivation and engagement in beneficial ways. In addition, it can improve students' grades.
41	[46]	Students' motivation	Learning effectiveness and learning motivating elements are significantly correlated. The game has a great effect on the motivation of the students as well.
42	[47]	Students' achievement and engagement	Traditional classes that have been gamified encourage student accomplishment, and FC that has been gamified encourage student engagement.
43	[48]	English oral communication ability	The students' oral communication skills in English could be enhanced by integrating task-based language training, flipped learning, as well as game-based learning.
44	[49]	Student engagement	Students in the gamification-enhanced flipped learning group performed the post- as well as pre-class tasks more frequently, produced artefacts of higher quality, and achieved considerably greater post-course test scores compared to their non-gamified counterparts.
45	[50]	Motivation, autonomy and self-regulation	When these techniques were utilized, students' motivation, autonomy, and self-control increased as they interacted with the subject's material.
46	[51]	Students' learning performance and perceived motivation	The students' perception of competence, autonomy, and relatedness was positive. They also performed better and achieved high exam scores.
47	[52]	Student skills competency and learning motivation	Gamified flipped classrooms enhance students' self-confidence, skills knowledge, intensity of preparation, as well as motivation, in comparison to the traditional flipped classrooms.
48	[53]	Student achievement, motivations, and satisfaction	An e-learning gamification increases students' motivation and satisfaction in computer science online courses but has no effect on their achievement.
49	[54]	Student engagement and satisfaction	Comparing a conventional flipped classroom, the escape box format is well-liked by students. It presents enhanced ratings in appropriate levels with regard to effective learning materials as well as complexity.
50	[55]	Student achievement	Students in gamification and flipped learning methods are more successful compared to students in the traditional method.
51	[56]	Student engagement	Students scored better in gamified quizzes when they prepared in advance in flipped learning sessions.
52	[57]	Students' motivation	High levels of student motivation, increased class participation, and improved subject achievements (marks).

4. DISCUSSION

This systematic analysis's findings are concentrated on studies that examine the impact of gamification strategies and flipped classrooms on education. Other than that, this study fills the gaps in the research mentioned earlier and provides valuable suggestions and recommendations for future studies on gamified flipped classrooms. Apart from that, SDT [5], [17]–[19], [22], [32], [34], [39], [40], [44], [48], [50]–[55] became the basis of the majority of gamified flipped classrooms study.

However, most articles fail to clarify how the study's underlying theory and the real gamification activities relate. For example, 21 of the 52 articles do not mention any theory or model employed to implement their research. In addition, most scholars applied the Attention, Relevance, Confidence and Satisfaction model to examine how GFC impacted students' motivation [10], [26], [33], [45], [46].

Consequently, most researchers conducted investigations utilizing experimental quasi-studies as their primary methodology Figure 5. Both treatment and control groups of students were established, having the treatment group undergoing interventions. Students will take pre-test exams before learning about GFC. Consequently, after the intervention, a post-test exam will be conducted to observe how successful the interventions were. In addition to experiments, the mixed-method study included information gathered through monitoring, interviews, and open-ended surveys. In comparison, different study [33] employed a qualitative research approach.

As a result, the systematic review analysis's findings revealed a variety of online tools and platforms that researchers utilized to examine the efficiency and influence of GFC on student learning. Besides that, the researchers are more enthusiastic about utilizing the Socrative, Kahoot!, and Moodle learning management systems. In addition, several academicians have developed unique and inventive gamification programs to conduct their GFC investigations. One is Triviachis, a hybrid of the Spanish board game Parchis and the trivia quiz game [57]. To determine the effectiveness of gamified questions in English grammar, [32] created the TipOn quiz, an artificial intelligence (AI)-enabled, web-based online learning tool to examine students' physics perceptions [36]. Note that gamification activities encourage activity completion, improve learning, and address issues [58]. Quizzes, formative assessments [3], [26], [31], [42], [46], learning activities, in-class instruction and assessment, as well as group projects [12], [34] were some of the gamification techniques employed in the researchers' study.

We established that the most often utilized game mechanics in GFC in education were points, badges, feedback, levels, and leaderboards. This aligns with previous research [12], who opined that the most frequently utilized game mechanics are levels, badges, trophies, achievements, competitions, and point systems. According to our study's findings, most research articles reveal favorable attitudes and learning outcomes, which is consistent with other studies findings.

Consequently, this review offers a thorough assessment of the relevant empirical evidence. Gamified flipped classrooms generally produce favorable academic outcomes. Apart from that, the majority of the research that were evaluated stated that gamification encourages enhancements in student achievement [5], [7], [13], [14], [27], [40], [43], [47], [53], [55], motivation [5], [10], [13], [16], [18], [19], [22], [23], [25], [27], [28], [39], [40], [46], [51]–[53], and engagement [6], [7], [57], [13], [24], [26], [38], [40], [44], [48], [56]. Furthermore, numerous studies have already established the effectiveness of gamified flipped classrooms over conventional teaching and learning.

5. CONCLUSION

Gamification uses game-based components or mechanics to boost motivation and interest through competition, such as leaderboards, leader scores, points and badges. Besides that, gamification components can encourage students to set more focused objectives, be more persistent, learn by repetition through teamwork, and engage in enjoyable competition with their peers. Moreover, gamification also encourages competitiveness and maintains student motivation in the classroom for longer. Students who use the gamification strategy to learn become more confident, active, and involved in classroom activities. Other than that, they develop better problem-solving, communication, and thinking skills. Gamification is thought to enhance fundamental knowledge while also raising student achievement. Additionally, gamification fosters collaborative learning, student-centered learning, and positive learning possibilities while providing an opportunity to incorporate students' thoughts, feelings, and behaviors. It is proven that instructors can transform classrooms into pleasant environments. By incorporating gamification elements such as giving assessments, applying gamification rules, time constraints, and accuracy, they can encourage action, motivate the students and gain positive feedback.

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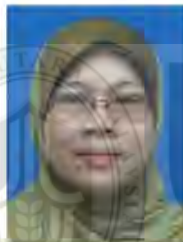
BIOGRAPHIES OF AUTHORS



Wan Masitah Wan Majid is a Ph.D. Candidate at the School of Education, Universiti Utara Malaysia (UUM), Kedah, Malaysia. She is accounting lecturer at Kolej Matrikulasi Perlis, Malaysia. Her research focuses on teaching and learning strategy, accounting education, and technology in education. She can be contacted at email: wannmasitah83@gmail.com or wan_masitah_wan@ahsgs.uum.edu.my.



Farah Mohamad Zain is a Senior Lecturer in Educational Technology. She is currently the Coordinator of Postgraduate program at the School of Education, College of Arts and Sciences, Universiti Utara Malaysia. Dr Farah holds a PhD from Universiti Sains Malaysia and has 8 years of teaching experience. Her research areas include digital content development, instructional technology, scholarship of teaching and learning, and augmented reality. She can be contacted at email: mz.farah@uum.edu.my.



Siti Noor Ismail is an Associate Professor and Head of Department at the School of Education, Universiti Utara Malaysia (UUM), Kedah, Malaysia. She has experienced more than 17 years in the education sector. She teaches courses in Strategic Management in Education, Quality Management in Education, and Creativity in Management for Effective Schools. Her research interest includes teacher education, school leadership, and school management and supervision. She can be contacted at email: siti.noor@uum.edu.my.



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