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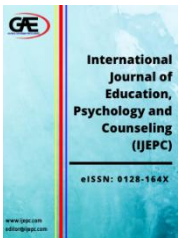

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DIGITAL GAME-BASED LIT-KEW MODULE FOR KEMAS PRESCHOOLERS: A MODIFIED NOMINAL GROUP TECHNIQUE APPROACH

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Abstract:

This study aims to design a Digital Game-Based LIT-KEW Module tailored for TABIKA preschool children, aligned with the Malaysian National Preschool Standard Curriculum (KSPK 2017). The primary objective was to obtain expert consensus on the essential components of the module through the Modified Nominal Group Technique (Modified NGT). Nine experts comprising early childhood education lecturers, experienced TABIKA teachers, and language specialists participated in the session. Consensus analysis revealed agreement levels exceeding 80% for learning objectives (83%), financial literacy content covering monetary value, spending, and saving (86%), and game-based teaching strategies (82%). Meanwhile, appropriate hardware and engaging digital media reached 78% and 81% agreement, respectively. These results confirm the robustness of the module's design, which is grounded in constructivist learning theory and informed by Maslow's hierarchy of needs to ensure holistic and meaningful learning. The study contributes a novel framework for contextual, interactive, and developmentally appropriate digital financial literacy education at the preschool level. Findings underscore practical implications for curriculum developers and early childhood policymakers, who may consider integrating digital financial literacy into preschool education as a foundation for lifelong financial competence.

Keywords:

Digital Game-Based, Financial Literacy, KEMAS Preschooler, Modified Nominal Group Technique

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Introduction

Contemporary education faces mounting challenges in equipping children with the competencies required to thrive in the 21st century. Skills such as critical thinking, problem-solving, financial literacy, and technology literacy are increasingly recognised as essential for preparing resilient and competitive future generations (Qian & Clark, 2016). In the digital era, traditional pedagogical approaches are no longer sufficient; instead, they must be transformed into interactive, child-centered formats that align with the natural learning styles of preschoolers. One promising approach is digital game-based learning, which has consistently been shown to increase motivation, engagement, and active participation while simplifying abstract concepts—such as finance—into more meaningful and developmentally appropriate learning experiences (Sharma et al., 2022).

Globally, financial literacy has been highlighted as an urgent area for early intervention. Preschoolers benefit from early exposure to money recognition, understanding currency value, cultivating saving habits, and making simple financial decisions, as these lay the foundation for responsible financial behaviour later in life (Shim, Serido, & Tang, 2021). Countries such as Singapore and Finland have pioneered systematic approaches by embedding financial education into their preschool curricula, often supported by digital and play-based resources that enable young children to explore financial decision-making in authentic contexts (OECD, 2020). These international models demonstrate how intentional, structured interventions at the preschool level can generate lasting benefits in financial behaviour and confidence.

In contrast, the Malaysian context reveals significant gaps. Financial literacy education at the preschool level remains fragmented and underdeveloped, with earlier studies noting its lack of systematic implementation and the absence of structured, child-friendly teaching resources (Mohd Johdi Salleh et al., 2021). While the National Preschool Standard Curriculum (KSPK 2017) touches upon financial elements within the domains of values and life skills (Ministry of Education Malaysia, 2017), its coverage is minimal and does not provide adequate support for meaningful classroom practice. Consequently, teachers often struggle to design and deliver effective financial literacy activities due to the lack of specialised modules tailored for preschool learners.

Addressing this gap, the present study introduces the Digital Game-Based LIT-KEW Module, designed specifically for TABIKA KEMAS preschool settings. The module is grounded in constructivist learning theory, emphasising active, experiential learning through digital play. By integrating interactive game-based strategies, the LIT-KEW Module seeks to provide preschool teachers with innovative and practical tools to introduce financial literacy concepts in ways that are joyful, engaging, and developmentally appropriate, while also aligning with Malaysia's national educational priorities.

Methodology

This research followed the Design and Development Research (DDR) approach as outlined by Richey and Klein (2019), conducted in three distinct phases. Phase One focused on needs analysis, Phase Two involved expert consensus using the Modified Nominal Group Technique (NGT) and Fuzzy Delphi Method (FDM), and Phase Three will address usability testing of the developed module. This multi-phase design ensures that the instructional material is systematically validated, contextually relevant, and pedagogically sound.

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Phase One: Needs Analysis

A survey was conducted among 156 KEMAS preschool teachers across five districts in Kedah to examine current practices and needs regarding digital game-based learning. The sample size was determined using Krejcie and Morgan's (1970) table for representative sampling, ensuring sufficient statistical power. Inclusion criteria required participants to have at least three years of teaching experience in KEMAS preschools. The survey results indicated that 68% of respondents agreed digital games positively influence teaching and learning at preschool level, thus justifying the development of a digital financial literacy module.

Phase Two: Expert Consensus via Modified NGT

The Modified NGT was employed to obtain expert consensus on module components. This structured technique (Van de Ven & Delbecq, 1971) involves systematic idea generation, discussion, and prioritisation. Nine experts were purposively selected based on established inclusion criteria: (i) a minimum of five years' experience in early childhood education or financial literacy, (ii) direct involvement in curriculum or module development, and (iii) recognition as subject-matter specialists. The panel consisted of three early childhood education lecturers, two financial literacy specialists, three experienced KEMAS preschool teachers, and one language expert. To ensure the robustness of findings, inter-rater agreement was calculated using Kendall's W coefficient of concordance, which yielded $W = 0.81$ ($p < .001$), indicating strong consensus among experts. The identified components of preschool financial literacy included introduction to money value, spending, and saving, supported by relevant digital game features such as age-appropriate content, engaging media, and clear learning objectives. The expert panel emphasised constructivist and play-based pedagogical alignment.

Phase Three: Usability Testing

The final phase will involve usability testing of the developed LIT-KEW module among a sample of TABIKA KEMAS teachers and children to examine its practicality, engagement, and effectiveness in classroom settings. Both quantitative (e.g., pre- and post-intervention surveys) and qualitative feedback (e.g., teacher reflections, classroom observations) will be gathered to triangulate findings and validate the module's impact. Figure 1 shows the phase and method used in the DDR approach.

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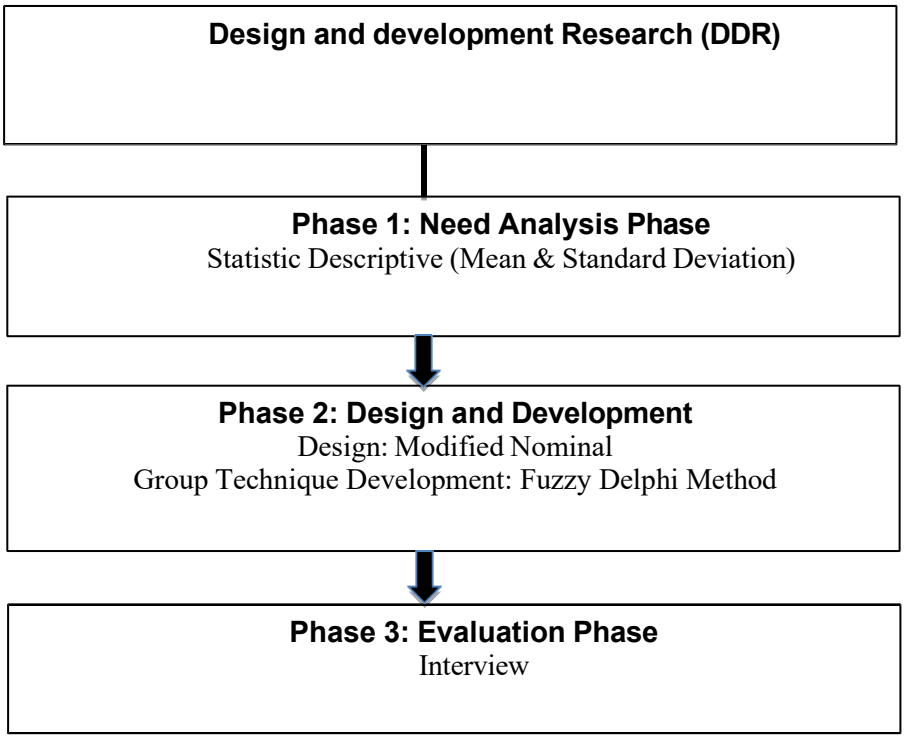

Figure 1: Phase and Method in DDR Approach

Definition NGT

The Nominal Group Technique (NGT) is a structured, face-to-face group discussion method used to facilitate decision-making and problem-solving through consensus. Originally introduced by Van de Ven and Delbecq (1971), NGT is designed to encourage balanced participation from all group members, ensuring that every individual has the opportunity to contribute ideas. This method involves several sequential steps: silent idea generation, round-robin sharing, clarification through discussion, and finally voting on the ideas to establish priorities. Unlike open-ended brainstorming, NGT reduces dominance by a few individuals and helps minimise bias, allowing for more honest and equitable input from participants (Anis et al., 2021). It is especially useful in module development studies, as it enables researchers to gather precise, experience-based insights rather than relying solely on perception (Rahman et al., 2022). The technique is also considered semi-quantitative because it integrates both qualitative brainstorming and quantitative ranking processes (O'Neil & Jackson, 2020). In the context of educational research, including the development of the LIT-KEW Digital Game-Based Module, NGT plays a critical role by drawing expert consensus on the key components and instructional elements to be included. Thus, NGT not only promotes creative and holistic input but also ensures that the resulting content is pedagogically sound and contextually relevant.

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Participant of NGT

To effectively implement the Modified Nominal Group Technique, careful selection of knowledgeable participants is essential, as described in the following section. According to Van de Ven and Delbecq (1971), the ideal number of participants in one NGT session was between five and nine people to enable a more focused and manageable discussion. The small number of participants in the sample is very important (Syahrizan et al., 2020). However, this amount can be adjusted depending on the context of the study and the availability of experts. In this study, participants were selected through purposive sampling to ensure that only individuals who met certain criteria were involved in the NGT session. For that purpose, the following is the size of the sample used by the past researchers who have been detailed in Table 1.

Table 1: Size of the Sample Used by Past Researchers

Scholar	Sample size
Van de Ven & Delbeco (1971)	5-9 people
Allen et al. (2004)	9-12 people
Syahrizan et al. (2020)	6 people
Harvey & Holmes (2012)	6-12 people

The scholars of Van de Ven & Delbeco (1971) expressed the number of research experts in conducting NGT approach data collection of five to nine people. Meanwhile, Master Allen et al. (2004) proposed that the number of experts involved in a study based on NGT be nine to 12 people. In this context, the researcher chose a total of nine experts involved in the Lit-Kew module design phase using the NGT approach. This is in agreement with the previous researchers (Harvey & Holmes, 2012) who emphasised that the ideal and best study participants were 6 to 12. Experts consisted of three experts in early childhood education, two experts in early childhood education management, three pre-school experts in the TABIKA KEMAS, and one expert in linguistics. Table 2 shows the background of the experts involved.

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Table 2: NGT Experts Background

Expert	Level of Education	Field of Expertise	Year of Experience
P1	Doctor of Philosophy	Early Childhood Education	15 years
P2	Master	Early Childhood Education	13 years
P3	Master	Early Childhood Education	12 years
P4	Master	Early Childhood Education	18 years
P5	Degree	Management Early Childhood Education	31 years
P6	Degree	Management Preschool Education	22 years
P7	Degree	Preschool Education	8 years
P8	Degree	Preschool Education	12 years
P9	Master	Language	15 years

Table 2 illustrates the demographic and professional background of the nine experts who participated in the Nominal Group Technique (NGT) session. These experts were carefully selected based on their qualifications, field of expertise, and years of experience to ensure the credibility and relevance of the input obtained during the data collection process. The educational backgrounds of the experts ranged from Bachelor's degrees to Doctor of Philosophy (PhD) levels, reflecting a diverse academic foundation. One expert holds a PhD in Early Childhood Education, three possess Master's degrees, two in Early Childhood Education and one in Language, while the remaining five experts hold Bachelor's degrees in Preschool Education or Early Childhood Education Management.

In terms of professional expertise, all the experts specialise in areas directly related to early childhood and preschool education, including curriculum development, language, and education management. This alignment ensures that the suggestions and judgments provided are contextually appropriate and grounded in practical experience. The panel also represents a wide range of professional experience, from 8 to 31 years. Notably, Expert P5 brings over three decades of experience in Early Childhood Education Management, indicating deep institutional knowledge and leadership insight. The varied but substantial experience across the panel enhances the robustness of the consensus generated through the NGT process.

Instrument of NGT

The instrument used for the NGT was a structured questionnaire developed from a comprehensive literature review and grounded in two theoretical models: the Financial Planning Integration Model (MIPK) and the Sidek Model (2005). The integration of these models ensured that the content of the questionnaire was both theoretically sound and aligned with the research objectives. The NGT questionnaire consisted of four main parts:

- Part A covers the demographic information of the respondents (experts), such as their academic background, professional experience, and area of expertise.
- Part B contains the main components identified from the literature.
- Part C is focused on the detailed elements of each component.
- Part D: the main content of the module.

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Each item in the questionnaire was designed to elicit expert input regarding the relevance and appropriateness of the proposed components and elements within the scope of the study. The validity and reliability of the instrument were closely linked to the careful selection of participants for the NGT session. To further improve the validity of the process, the questions included in the NGT session were clearly defined and aligned with the study's objectives.

The questionnaire was sent to the selected experts one day before the scheduled online NGT workshop to provide them with sufficient time to review the content in advance. During the NGT session, experts were invited to share their views and provide feedback on each component and its associated elements. They were then asked to evaluate and vote on each item using a five-point Likert scale, ranging from 1 (totally disagree) to 5 (totally agree). This method facilitated the collection of both qualitative insights and quantitative consensus among the participants, making it a robust tool for refining and validating the initial structure of the module. The structured and participatory nature of the NGT, combined with the targeted selection of knowledgeable experts, ensured the development of a reliable and valid instrument for gathering expert consensus in the early phase of the module design process.

Implementation Of NGT

The NGT session for this study was conducted online. Online selection is done based on several factors. The first factor is to facilitate panels in various states to attend workshops for this study. The second reason for conducting the workshop online aligns with modern trends, as online workshops have long been practised in many developed countries due to their numerous benefits. The NGT process should be pointed out that the NGT session requires a small group discussion that involves all respondents. Therefore, the discovery of all the panels is conducted on a Google Meet. To control the implementation of the NGT workshop, a moderator needs to be appointed as a facilitator. For this study, the researcher acts as a moderator and is assisted by an assistant who manages other related matters. The NGT Workshop session began with an introductory session by the researcher.

Since some of the respondents did not know each other, the researcher introduced all the respondents involved, including their respective backgrounds. The researcher then stated the purpose of the workshop and the workshop implementation procedure so that each respondent understood the desired implementation procedure to achieve the goals of the work. Once all the respondents were prepared and agreed to the terms, conditions and procedures, the NGT work was started with the introduction of the list of key components and elements designed through the literature review. The main component design process and module elements are explained so that each respondent is clear about the root of the main components and the elements. This is to facilitate the generation of ideas to occur more smoothly and thus shorten the discussion time. However, respondents were authorised to provide feedback on whether or not to agree on the list of elements for each of the main components presented.

Finally, only the elements that reach a common agreement will be considered for inclusion in the developed module. In addition, experts are also allowed to suggest additional ideas to be included in the module. In general, there are several basic steps in implementing the NGT process. Table 3 below outlines the NGT implementation procedure adopted by the researcher in developing the digital game-based LIT-KEW elements for TABIKA KEMAS children.

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Table 3: Implement Procedure NGT

No	Phase	Activity
1	Introduction Phase	The moderator provides a general explanation of the ongoing study. A briefing is then given on the main components and elements identified during the design analysis phase (the list of components is shared beforehand to allow respondents to review). *Time allocated:* 15 minutes.
2	Silent Phase (Idea Generation)	Respondents are given a Google Survey link to submit their ideas individually. *Time allocated:* 10–15 minutes.
3	Idea Sharing Phase	Each respondent's ideas are listed on a shared Google Meet whiteboard in turns (no discussion is allowed during this phase to ensure equal opportunity and avoid influence). The ideas are treated as a collective group product. *Time allocated:* 25–30 minutes.
4	Discussion Phase	The moderator briefly explains each item/idea. Respondents may provide clarification or comments (comments are not considered as evaluations). Similar or overlapping ideas may be merged upon group consensus. *Time allocated:* 20–30 minutes.
5	Voting Phase	Respondents are asked to select the top five ideas they consider most important, in ranked order. Ideas with the highest number of votes are shortlisted for inclusion in the questionnaire. The questionnaire is then distributed for overall voting. The moderator analyses the questionnaire results using the Fuzzy Delphi Method (FDM).

The implementation of the NGT in this study was carefully structured to ensure a systematic and inclusive process of gathering expert consensus for developing the LIT-KEW Module for preschool children in TABIKA KEMAS. Experts were invited to discuss, evaluate, and validate the key components necessary for the module's development. Prior to the online NGT session, the questionnaire was distributed via email to allow experts sufficient time to review the proposed content. During the session, each expert shared their opinions and insights, responding to the NGT questionnaire using a five-point Likert scale to indicate their level of agreement. Items receiving agreement levels of 70% or higher (mean Likert score ≥3.5) were included in the module design, consistent with established consensus thresholds in Modified NGT studies.

Following the core principles outlined by Islam (2003) and Odu (2017), the session emphasized several key values to ensure its effectiveness: no criticism was allowed during idea generation, creative and original suggestions were encouraged, quality was prioritized over quantity, and participants were urged to explore, refine, and integrate diverse ideas. Anonymity was maintained to ensure unbiased contributions, and in-depth discussions were reserved until all ideas had been fully presented. These principles facilitated a collaborative and democratic environment, promoting honest input and generating rich, contextually relevant data. The structured use of NGT in this study ensured that the components and elements selected for inclusion in the LIT-KEW Module reflect both expert insight and alignment with the

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developmental needs of preschool children, while also supporting the goal of fostering early financial literacy through engaging, game-based learning.

Preliminary Development of Elements

In the early stages of the study, several processes were implemented, including a literature review and expert interview sessions, to verify the proposed elements. A panel of experts was selected to provide relevant insights and suggestions on the module development. All participating experts possessed extensive experience in education, particularly in early childhood education and curriculum development. During this phase, the experts were briefed on the initial framework of the module, which included elements derived from the literature review. To support the development of suitable activity elements, three key components were identified as the foundational reference. Table 4 presents the models that were used to guide the construction of the activity elements for this study:

Table 4: Model of Guide Contraction Activity Element

Money Management ***Model Integrasi Perancangan Kewangan (MIPK)***	**Sidek Model (2005)**	***Kurikulum Standard Prasekolah Kebangsaan (KSPK, 2017)***
Income (D)	Selection of Objectives (PO)	Identifying Money Value (NM)
Expenditure (B)	Selection of Content (PIK)	–
Living (K)	Selection of Strategy (PS)	–
Savings (S)	Selection of Equipment/Logistics (PL)	–
Credit (K)	Selection of Media (PM)	–

Based on these relevant models, the researcher established thematic categories for each dimension to simplify the design and understanding of elements related to recognising the value of money, spending, and saving in the context of children's financial literacy module development. All models were agreed upon by the expert panel as strong foundations for designing activity elements within the module.

Following expert panel discussions, a consensus was reached. The experts recommended that the topic of recognizing the value of money should be introduced in parallel with spending and saving money in a manner suitable for preschool children. This approach was considered effective in fostering active learning, self-understanding, and supporting teachers by saving time during the teaching and learning process.

Finding And Discussion

The Nominal Group Technique (NGT) was employed in this study to gather expert consensus regarding the design of the LIT-KEW Module based on digital games for preschool children in TABIKA KEMAS. A total of 66 items were evaluated by nine experts, comprising early childhood educators, curriculum developers, and digital education specialists. The findings are reported according to the study's three main objectives.

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Identification of the Main Components of The Lit-Kew Module

The first objective focused on determining the core components that should structure the LIT-KEW Module. Through literature review and expert consultation, three primary components were proposed on recognising the Value of Money, (2) Spending Money, and (3) Saving Money. These components were presented to experts for evaluation using a five-point Likert scale, and acceptance was determined using a minimum consensus threshold of 70%.

Table 5: NGT Analysis of Main Components

No	Main	PK1	PK2	PK3	PK4	PK5	PK6	PK7	PK8	PK9	Expert Scores	Percentage (%)	Status
1	Recognizing the Value of Money	5	5	5	5	5	5	5	5	5	45	100	Accepted
2	Spending Money	5	5	5	5	5	5	5	5	5	45	100	Accepted
3	Saving Money	5	5	5	5	5	5	5	5	4	44	97.78	Accepted

All three components were accepted with exceptionally high levels of agreement. The unanimous endorsement from experts confirms the foundational relevance of these financial literacy themes for early childhood learners in the context of TABIKA KEMAS. These components serve as the framework for constructing the module's structure and activities.

Identification of Elements Within The Main Components

The second objective involved evaluating 16 specific elements that support the three core components. These elements include learning outcomes such as recognising the value of money, spending, and saving. Each element was assessed for its developmental appropriateness, relevance to financial literacy, and suitability for preschool-aged children. The evaluation revealed a high level of agreement among experts, indicating that the elements were well-aligned with the learning goals of the LIT-KEW Module. Table 6 presents the NGT analysis of selected elements.

Table 6: NGT Analysis of Selected Elements

No.	Element	PK1	PK2	PK3	PK4	PK5	PK6	PK7	PK8	PK9	Total Score	Percentage (%)	Status
1	Children can easily recognise the type of coin.	3	5	5	5	5	5	5	5	5	43	95.56	Accepted
2	Children can easily recognise the type of paper money.	3	5	5	5	5	5	5	5	5	43	95.56	Accepted
3	Money introduction activities help children understand the value of money in their daily lives.	5	5	5	5	5	5	5	5	5	45	100.00	Accepted
4	Money introduction activities help children understand the function of money in daily life.	5	5	5	5	5	5	5	5	5	45	100.00	Accepted

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No.	Element	PK1	PK2	PK3	PK4	PK5	PK6	PK7	PK8	PK9	Total Score	Percentage (%)	Status
5	This module is ideal for introducing different sources of income to children.	4	5	5	4	5	5	5	3	4	40	88.89	Accepted
6	Activities in this module teach children to plan their expenses wisely.	5	5	5	5	5	5	5	3	5	43	95.56	Accepted
7	Activities in this module teach children to manage their expenses wisely.	5	5	5	4	5	5	4	3	5	41	91.11	Accepted
8	Children are given practical opportunities to learn to make a budget.	5	5	5	5	5	5	3	2	5	40	88.89	Accepted
9	Children are given practical opportunities to learn to organise spending priorities.	4	5	5	4	5	5	4	3	3	38	84.44	Accepted
10	This module instilled awareness of the importance of managing spending in charge.	5	5	5	4	5	5	5	3	5	42	93.33	Accepted
11	Children are exposed to the concept of saving through interactive activities in this module.	5	5	5	4	5	5	5	5	5	44	97.78	Accepted
12	This digital game helps children understand the importance of setting goals for saving.	5	5	5	4	5	5	5	5	5	44	97.78	Accepted
13	This module is ideal for teaching children how to calculate the amount of money to keep.	5	5	5	4	5	5	5	3	4	41	91.11	Accepted
14	Introducing a digital game-based financial literacy module that uses an interactive and child-friendly digital game approach.	5	5	5	5	5	5	5	5	5	45	100.00	Accepted
15	Increase the ability of preschoolers to understand basic financial concepts such as saving, spending, and recognising money.	5	5	5	4	5	5	5	5	5	44	97.78	Accepted
16	Provides an innovative teaching tool to support financial literacy teaching in the context of the National Preschool Standard Curriculum (KSPK 2017).	5	5	5	5	5	5	5	5	5	45	100.00	Accepted

The analysis shows that all elements received strong consensus, with percentages ranging from 84.44% to 100%. Experts emphasised the importance of combining abstract financial concepts with practical, game-based applications to ensure developmental appropriateness for preschool learners.

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Identification of The Main Content of The Lit-Kew Module

The third objective was to validate the main instructional and content structure of the module. A total of 47 content items were reviewed, including learning objectives, curriculum standards, module activities, digital tools, game formats, assessment instruments, and implementation processes. All items achieved consensus above the 70% threshold, indicating strong validation of the module structure.

Table 7. NGT Analysis of Selected Core Content

No	Element	1 2 3 4 5 6 7 8 9	Total Score	%	Status
1	Introduction	5 5 5 5 5 5 5 5 4	44	97.78	Accepted
2	Objective	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
3	Contents	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
4	Learning Standard	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
5	Activity Implement Process	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
6	Learning sessions/key components	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
7	Hardware and Media Selection	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
8	Assessment and Evaluation	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
9	Appendix Activity	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
10	Closing Module	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
11	Rational Module	5 5 5 5 4 5 5 5 4	43	95.56	Accepted
12	The user's target	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
13	Learning Outcomes	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
14	National Curriculum	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
15	Teacher's Guidelines	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
16	Critical and Creative Thinking	5 5 5 5 5 5 5 5 4	44	97.78	Accepted
17	Problem-Solving Skills	5 5 5 5 5 5 5 5 4	44	97.78	Accepted
18	Sensitivity to Financial Issues	5 5 5 5 5 5 4 5 4	43	95.56	Accepted
19	Money Management Skills	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
20	A Marching Game	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
21	A Quiz Game	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
22	A Simulation Game	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
23	Savings Basic	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
24	Needs and Requirements	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
25	How to Spend Wisely Shopping	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
26	Saves with Goals	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
27	My Daily Expenses	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
28	Matching Games	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
29	Simulation Games	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
30	Drag and Drop Games	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
31	Counting Games	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
32	Laptop / iPad	5 5 5 5 4 5 5 5 5	44	97.78	Accepted
33	Internet/wifi	5 5 5 5 3 5 5 5 5	43	95.56	Accepted
34	Practical Materials (Money Scan Card)	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
35	Teacher Reflection Form	5 5 5 5 5 5 5 5 5	45	100.00	Accepted
36	Children's Financial Literacy App	5 5 5 5 5 5 5 5 5	45	100.00	Accepted

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No	Element	1	2	3	4	5	6	7	8	9	Total Score	%	Status
37	QR Code	5	5	5	5	5	5	5	5	5	45	100.00	Accepted
38	Concise / Video Animation	5	5	5	5	5	5	5	5	5	45	100.00	Accepted
39	20 Minute	5	5	1	5	5	3	1	2	5	32	71.11	Accepted
40	30 Minute	2	5	5	5	4	4	3	4		37	82.22	Accepted
41	Content Readiness (Content)	5	5	5	5	5	4	5	4		43	95.56	Accepted
42	Willingness for instructional readiness	5	5	5	5	5	4	5	5		44	97.78	Accepted
43	Willingness to use technology (digital readiness)	5	5	5	5	5	4	5	5		44	97.78	Accepted
44	Steps: Setup → Induction → Interactive → Strengthening → Reflection → Assessment	5	5	5	5	5	4	5	5		44	97.78	Accepted
45	Pediatric	5	5	5	5	5	5	5	5	5	45	100.00	Accepted
46	Can be used with digital games	5	5	5	5	5	4	5	5		44	97.78	Accepted
47	Can be used with a learning objective	5	5	5	5	5	4	5	5		44	97.78	Accepted

The only item that receives a relatively low level of agreement is a 20-minute activity time period. Although this item is still accepted, the panel of experts has identified a need for review based on adaptability in the classroom context. Unanimous acceptance of all other components evaluated shows the strength of this module in terms of pedagogy, curriculum alignment and classroom usability. However, the item, that is, the duration of activity for 20 minutes, is advisable to be dropped by the expert panel as it is considered less flexible and may not be in line with the level of focus and the context of various preschool children (Harvey & Holmes, 2012). All other items involving content, implementation, use of digital tools and assessment strategies have received full support from all experts. This comprehensive consensus confirms the potential of the LIT-KEW Module to be implemented effectively in the context of KEMAS kindergarten preschool education.

Discussion

The findings of this study highlight strong expert consensus on the essential components of the Digital Game-Based LIT-KEW Module, affirming its potential relevance and impact on preschool financial literacy education. Through the Modified Nominal Group Technique (NGT), three primary domains of financial literacy recognising money, spending money, and saving money were identified, with consensus levels ranging from 97.78% to 100%. Such near-unanimous agreement underscores the experts' recognition of these domains as foundational to developing responsible money management skills in early childhood. These findings align with Mustapha et al. (2019), who assert that instilling financial awareness during preschool years creates a foundation for positive financial behaviours throughout life.

Beyond these core domains, the study identified 16 supporting elements, all endorsed with high consensus values above 84%. These include practical, developmentally appropriate skills such as recognising currency denominations, managing expenses wisely, and cultivating saving habits. The emphasis on hands-on, engaging, and interactive approaches resonates with the work of Shim et al. (2010), who highlight the importance of experiential learning in strengthening young children's understanding of financial concepts. Similarly, the 47 content items validated by the expert panel—including alignment with the KSPK curriculum, clear teacher guidelines, digital game integration, and suitable teaching aids reflect a systematic and pedagogically robust framework. The inclusion of interactive digital features, such as matching games, drag-and-drop activities, and simulation-based tasks, is consistent with OECD (2020) recommendations that early learning environments

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should harness technology to prepare children for both digital and financial futures.

While these results confirm the module's comprehensiveness, several implementation challenges warrant careful consideration. International experiences illustrate that the success of digital financial literacy programs is often dependent on broader systemic factors, including digital infrastructure, teacher readiness, and cultural adaptation (Sharma et al., 2022; OECD, 2020). For instance, programs such as Money as You Grow in the United States and the Young Money Initiative in the United Kingdom demonstrate that sustained impact hinges on structured teacher training, institutional support, and adequate resource provision. Similarly, countries like Singapore and Finland have successfully embedded financial education into early childhood curricula by ensuring strong teacher professional development and integrating digital learning within national education policies.

In contrast, the Malaysian preschool context presents unique challenges. Many rural TABIKA centres may face constraints in terms of limited digital infrastructure, unequal access to devices, and varying levels of teachers' technological proficiency. Without targeted investment in teacher training, technical support, and resource allocation, the full potential of the LIT-KEW Module may be difficult to realise. Additionally, expert discussions highlighted the importance of flexible implementation strategies. While a standardised 20-minute activity duration was initially proposed, experts advised adaptability to suit children's diverse attention spans and classroom dynamics, reinforcing the argument of Harvey and Holmes (2012) that rigid time frames can undermine effective engagement.

Overall, the findings position the LIT-KEW Module as a comprehensive and innovative tool that bridges financial literacy and digital game-based pedagogy in early childhood education. The strong expert consensus validates its pedagogical soundness, while international comparisons highlight both the opportunities and challenges in scaling such an initiative. From a policy perspective, this study underscores the urgency of embedding structured financial literacy into Malaysia's preschool curriculum, moving beyond the limited provisions of the KSPK (2017). For maximum impact, curriculum reform must be accompanied by teacher professional development, equitable infrastructure provision, and culturally relevant adaptations. If these challenges are addressed, the LIT-KEW Module holds significant potential to transform financial literacy education and empower Malaysia's preschool learners to become financially capable future citizens.

Conclusion

This study successfully developed and validated the Digital Game-Based LIT-KEW Module tailored for preschool learners, which was guided by expert consensus through the Modified NGT. The three core components, recognition of money, money management, and saving, are effectively supported by 66 learning elements, all of which demonstrate high agreement (>70%) among experts. These elements align closely with the cognitive, social, and emotional development stages of preschool children and adhere to the National Preschool Standard Curriculum (KSPK). The integration of interactive digital games presents an innovative and engaging platform for young children to grasp fundamental financial concepts in a contextually enjoyable way. However, expert feedback highlighted the necessity for flexible activity durations to accommodate varied classroom contexts and individual differences. In summary, the validated LIT-KEW Module offers a robust, adaptable foundation for early childhood financial literacy instruction that supports positive financial habits from a young age. Future research should focus on piloting the module in classroom settings to evaluate its practical impact on children's

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financial knowledge, attitudes, and behaviours in order to refine implementation strategies accordingly.

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