WEB-BASED MONEY MANAGEMENT SYSTEM (MOMS) FOR ENHANCING STUDENTS' FINANCIAL PLANNING LITERACY

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Abstract. This study evaluates the effectiveness of the Money Management System (MOMs), a web-based learning platform designed to enhance university students' financial planning literacy and risk-profiling capabilities. Grounded in financial literacy, behavioural finance, and constructivist learning theories, MOMs was integrated into the Personal Financial Planning course. A mixed-method approach involved 88 undergraduate students selected through purposive sampling. Quantitative data were analysed using descriptive statistics, while qualitative responses underwent thematic analysis. Findings show that 82.95% of respondents reported improved understanding of budgeting, saving, debt management, and investment planning. Students perceived MOMs as user-friendly, engaging, and effective in supporting classroom learning. Qualitative insights highlighted increased financial awareness, confidence in decision-making, and appreciation of personalised risk profiling. The study concludes that MOMs represents an effective educational innovation for strengthening financial literacy and promoting informed financial behaviour among university students through interactive and personalised learning experiences that encourage responsible financial decisions and long-term planning practices.
Keywords: *financial literacy, risk profiling, educational innovation, web-based learning, money management, higher education*

Introduction

Financial literacy and financial management are essential competencies for young adults, particularly university students transitioning from higher education to the workplace. At this stage, students must make important financial decisions related to budgeting, saving, debt repayment, insurance protection, and investment planning. These decisions are consequential because financial behaviours developed during early adulthood often influence long-term financial well-being and economic stability (Huang et al., 2024). Zhu (2024) similarly noted that financial decisions made in early adulthood can shape an individual's financial trajectory across the life course. Therefore, inadequate financial literacy and weak financial planning may affect students' financial resilience, academic progress, and future economic security. The digitisation of financial services has further increased the need for applied financial competence. Online banking, mobile applications, digital payment systems, and investment platforms have expanded access to financial products and information. However, these developments have also introduced new risks and decision-making complexities that require higher levels of financial literacy (Johan et al., 2021). As financial systems become more sophisticated, students require more than theoretical knowledge. They must be able to evaluate financial information, assess financial risks, and make informed decisions in dynamic digital environments. This highlights the need for educational approaches that integrate conceptual understanding with practical financial decision-making.

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Web-based learning technologies offer a promising approach to strengthening financial education in higher education. Through digital interfaces, interactive assessments, simulations, and personalised feedback, such systems can support active and student-centred learning in financial management. They may also enhance financial self-efficacy, which refers to an individual's confidence in managing financial matters and making sound financial decisions. Velasco (2022) reported that financial education interventions can improve both financial literacy and financial self-efficacy among university students. This approach is also supported by constructivist learning theory, which emphasises active participation, practice, reflection, and knowledge construction. In digital learning environments, students can engage with financial scenarios, assess their understanding, reflect on their financial behaviours, and learn at their own pace. Rodríguez-Correa et al. (2025) further argued that technology-integrated financial education can strengthen financial literacy and financial self-efficacy, enabling learners to apply financial knowledge across different contexts. Despite growing interest in financial literacy and digital learning, several gaps remain. Previous studies have often examined financial literacy, financial behaviour, and financial education interventions separately, resulting in a fragmented understanding of how these elements interact across the learning process. Although prior research has demonstrated the value of financial education in improving students' knowledge and behaviour, fewer studies have evaluated integrated tools that combine financial awareness assessment, money management guidance, personalised recommendations, and risk profiling. In Malaysia, empirical research on web-based financial education systems in higher education also remains limited. Although Liu and Lin (2021) found that internet-based financial education improved students' financial knowledge and behaviour, further evidence is needed on how digital systems support students' personal financial planning and investment-related decision-making.

Accordingly, this study examines the Money Management System (MOMs), a web-based financial education tool designed to enhance students' personal financial planning. MOMs incorporate a money management awareness assessment, personalised financial recommendations, and risk profiling. This study evaluates students' learning experiences, engagement, and perceptions of the system. In doing so, it contributes to the emerging literature on financial education technologies and provides empirical evidence on the use of web-integrated learning tools to support financial literacy and financial planning among university students in Malaysia.

Literature review

Personal financial management involves decisions to consume, save, or invest, which reflect financial discipline and influence long-term financial well-being (Mohd Yunos, 2005). Financial literacy is widely recognised as a key determinant of financial behaviour and decision-making (Yakob et al., 2015; Shaari et al., 2013; Braunstein and Welch, 2002), as it requires not only financial knowledge but also the practical application of financial concepts in daily decisions (Lusardi and Tufano, 2009). In higher education, financial literacy helps students plan, manage resources, and prepare for future financial responsibilities. However, effective financial decision-making also requires an understanding of risk-return trade-offs, as individuals who assess financial risk more actively tend to achieve better investment outcomes (Byrne, 2005). Behavioural finance further explains that psychological, behavioural, and demographic factors shape financial decisions. Harshini et al. (2025) reported that female investors

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tend to be more risk-averse than male investors. Hoffmann et al. (2015) found that risk perception and return expectations significantly influence investment behaviour. Manaf et al. (2024) and Beck et al. (2023) similarly confirmed that risk tolerance affects investment choices, with individuals who have higher risk tolerance being more likely to invest in volatile financial instruments. Interdisciplinary approaches to financial education also suggest that interventions are more effective when they are situated in contexts familiar to students (Cervellati et al., 2024). This is especially relevant in higher education, where students demonstrate varying levels of knowledge regarding investments and personal finance (Elshaer and Sobaih, 2023). Bhavani and Shetty (2017) similarly highlighted the behavioural significance of investment decision-making processes. In addition, irrational financial behaviour among retail investors is often associated with psychological biases and emotional influences (Ahmad, 2024). Investment and financial decisions are therefore shaped by the interaction between financial literacy, behavioural tendencies, demographic characteristics, and access to financial assets (Reddy and Taj, 2024; Joharudin, 2023; Luther and Sumani, 2023).

Despite growing attention to financial literacy, financial mismanagement remains common among students. Many students exhaust their funds after paying tuition fees and may seek part-time employment, underscoring the importance of budgeting to sustain financial resources throughout the semester (Thomsen and Haaren, 2014). Students in higher education are also among those most affected by financial difficulties (Britt et al., 2015). Lower financial literacy is associated with weaker financial judgement and poorer financial decision-making (Triana and Ibrohim, 2022), while poor financial management has been linked to reduced financial control, self-directed spending, and weak financial choices among students (Azer and Mohamad, 2018; Britt et al., 2015). Schmeiser et al. (2015) found that financial difficulty was a major factor influencing students' ability to cope with academic demands and remain enrolled. These challenges demonstrate the need for strategic, accessible, and systematic financial education that supports students in managing financial pressures and sustaining their studies (Hadžić and Poturak, 2014). In response, web-based technologies have emerged as promising tools for strengthening student engagement and financial learning.

The MOMs instructional framework

The core of the framework involved students interacting with the MOMs web-based platform, which is structured into three functional modules:

Part one: Awareness assessment

The first module evaluates students' baseline financial literacy through a structured questionnaire adapted from prior studies. Responses are automatically scored to classify students as either "aware" or "unaware" of money management principles. Students need to click on the icon on the front page of the "MOMs" system, as shown in *Figure 1*. On the front page of the "MOMs" system, students need to answer questions developed and adapted from previous studies on how students manage their finances, as shown in *Figure 2*. Based on the score threshold, the system generates an immediate classification result. Students who meet the minimum requirement are identified as financially aware, while others receive targeted feedback to improve their financial understanding. This is shown in *Figure 3*.

Figure 1. *Front page of Money Management (MOMs).*

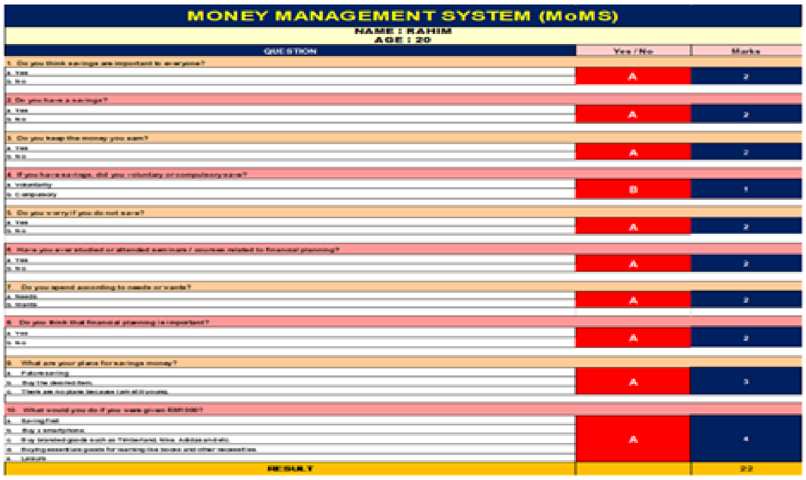

Figure 2. *The first part of the Money.*

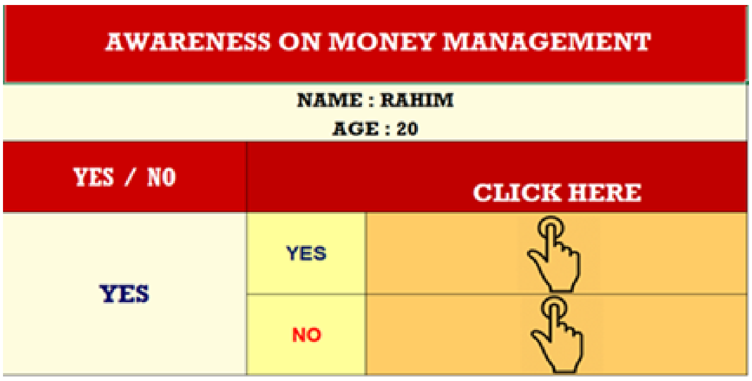

Figure 3. *Results on money management awareness.*

Part two: Implications and suggestions

Students who score below the threshold are provided with automated feedback highlighting the implications of weak financial management as illustrated in *Figure 4*. The system also generates suggested actions to improve budgeting, saving, and debt management skills as illustrated in *Figure 5*. For students who meet the required threshold, the system proceeds to the next stage, which involves risk profiling and investment behaviour analysis.

Figure 4. *Implications.*

Figure 5. *Suggestions.*

Part three: Risk profiling

The final component assesses students' financial risk tolerance and categorises them into four groups: Naive (highly risk-averse and prefer financial safety), Conservative (low-to-moderate risk tolerance with cautious decision-making), Aggressive (higher risk tolerance with preference for higher returns) and Speculative (very high risk tolerance with strong return-seeking behaviour). These categories reflect differences in financial attitudes, behavioural tendencies, and investment preferences. Students complete a set of behavioural and attitudinal questions to determine their classification as illustrated in *Figure 6*. The system then generates personalised investment guidance aligned with their risk profile, including suggested asset allocation strategies illustrated in *Figure 7*.

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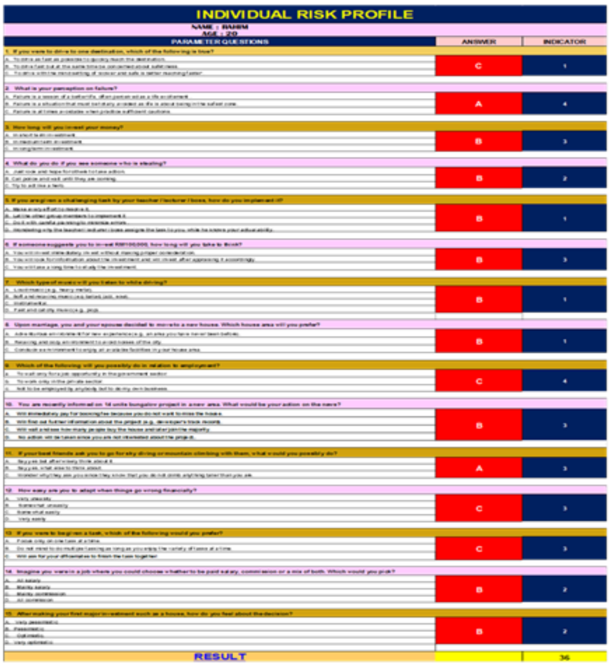
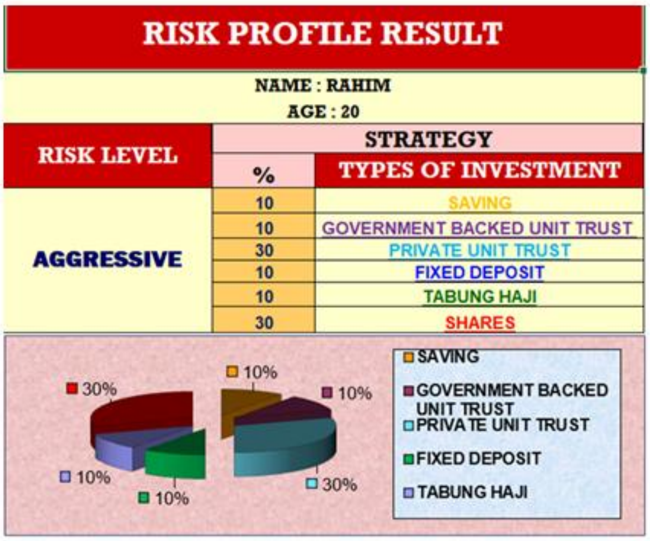


Figure 6. *Items on individual risk profile.*



RISK LEVEL	STRATEGY	
	%	TYPES OF INVESTMENT
AGGRESSIVE	10	SAVING
	10	GOVERNMENT BACKED UNIT TRUST
	30	PRIVATE UNIT TRUST
	10	FIXED DEPOSIT
	10	TABUNG HAJI
	30	SHARES

Figure 7. *Individual risk profile.*

Materials and Methods

This study adopted a mixed-method research design combining quantitative and qualitative approaches. The target population consisted of undergraduate students enrolled in the Personal Financial Planning course at Universiti Teknologi MARA. Purposive sampling was employed because all participants had direct experience using the MOMs platform as part of their coursework. A total of 88 students participated in the study. The quantitative instrument comprised five evaluation dimensions: learning experience, ease of use, teaching effectiveness, engagement and interaction, and overall satisfaction. Descriptive statistics were used to analyse frequencies and percentages. Qualitative data were obtained through open-ended feedback questions and analysed using thematic analysis to identify recurring themes regarding strengths, weaknesses, and recommendations for system improvement.

Results and Discussion

Google Forms were distributed to gather students' feedback on this system. The input was highlighted in several aspects as shown in *Table 1*.

***Table 1**. Evaluation dimension.*

Evaluation Dimension	Positive Response (%)	Neutral Response (%)	Negative/Somewhat (%)
Learning Experience	83.0%	10.2%	6.8%
Ease of Use	73.8%	25.0%	1.2%
Teaching Effectiveness	73.8%	20.5%	5.7%
Engagement & Interaction	78.4%	15.9%	5.7%
Overall Satisfaction	82.9%	15.9%	1.2%

The results show that most students appreciate its educational and ease-of-use features. There was high agreement when asked about the system's ability to improve understanding of personal finance topics such as budgeting, saving, investing, and debt management. Approximately 82.9% of students who responded to the survey considered the system helpful and supportive of their understanding of budgeting, saving, and debt management. Students believed that the system was very effective for learning and helping improve their understanding of lectures. Only a few respondents provided neutral (15.9%) or somewhat effective (1.2%) comments on educational alignment, and most students considered the system very engaging. The high response rate and positive endorsement indicate improved student learning due to the completion of the system. Student feedback at a qualitative level provides a better understanding of the purpose and objectives of the Money Management System (MOMs) and how they relate to students' financial planning and decision-making skills. Most respondents reinforced the quantitative results and described the system as a valuable educational tool for its interactivity in the domains of financial literacy and financial management. Thematic analysis of feedback centred on three major themes: (1) enhancement of financial awareness and money management skills, (2) improved understanding of risk profiling and investment decision-making, and (3) recommendations for system improvement and inclusivity.

The first theme identified from the qualitative responses relates to students' increased financial awareness and improved money management skills. Many participants reported that the MOMs platform enhanced their understanding of key financial planning concepts, including budgeting, saving, debt management, and spending control. The system encouraged students to reflect on their spending patterns, recognise their financial behaviours, and prioritise more disciplined money management practices. Participants also indicated that the platform provided practical financial skills that could be applied in their daily lives. Through the awareness assessment and personalised recommendations, students developed a stronger understanding of financial discipline, goal setting, and future financial planning. Several respondents further reported increased confidence in making financial decisions and adopting improved financial practices. These findings suggest that MOMs supports the development of financial knowledge and financial self-efficacy, consistent with Velasco (2022). The results also

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align with constructivist learning principles, as students engaged actively with financial concepts, applied them through system-based activities, and developed practical competencies through experiential learning. The second theme reflects students' appreciation of the personalised risk profiling feature in MOMs. Most respondents regarded risk profiling as a distinctive component of the system because it enabled them to assess their risk tolerance and identify investment options aligned with their financial circumstances. Before using MOMs, many students reported limited awareness of how investment preferences are influenced by financial attitudes, personality traits, and behavioural tendencies. The risk profiling module helped students recognise their investment preferences and classify themselves as Naive, Conservative, Aggressive, or Speculative investors. Respondents particularly valued the personalised recommendations generated by the system, as these helped them understand the relationship between their risk preferences, investment behaviour, and suitable financial products. Respondents also appreciated that MOMs provided recommendations for Shariah-compliant financial instruments. This finding is especially relevant in the Malaysian context, where Islamic finance plays an important role in shaping personal financial planning and investment behaviour.

Overall, the qualitative data found that MOMs is much more than a financial literacy tool; it is a framework for financial education that provides users with the means to acquire knowledge, awareness, and the ability to make informed financial decisions. The platform seamlessly integrates the assessment of financial consciousness, the provision of tailored suggestions, and the inclusion of a risk-profiling component to offer students a more complete and rounded approach to teaching this subject. The results are commendable and align with earlier findings, in which the incorporation of technology into the learning environment and the subsequent enhancement of the learning environment and personal financial self-efficacy were noted (Rodríguez-Correa et al., 2025; Liu and Lin, 2021). Money Management System (MOMs) can help cultivate students' understanding of personal financial planning and investment decision-making. The majority of the students who participated in the study estimated that the platform would help develop their understanding of financial management, budgeting, saving, controlling expenditure, and assessing risks. The assessment of financial awareness and the evaluation of financial risk seem to provide students with an opportunity to consider their financial behaviour and assess their willingness to engage in investment-related activities. The platform does not substitute for formal financial education but works in conjunction with learners to cultivate interest in financial planning and confidence in managing personal finances. Regarding the risk profiling component, students expressed a preference for individualised learning, as evidenced by their feedback. As users of the MOMs, students are provided an individualised learning experience in which the abstract nature of financial concepts is made clear through the identification of risk preferences and the rationale for their risk profiling. The inclusion of individualised learning as a criterion increases the value of learning for students, moving them from the mere theoretical domain of financial concepts to the application of these concepts in their financial decision-making.

The findings indicate that MOMs and similar systems help universities offer more technology-led educational frameworks. Many students in the sample perceived this educational tool as complementing traditional teaching and learning methods. MOMs and similar learning systems are likely to have implications for the advanced practices of higher education management and administration. These include the incorporation of

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self-directed learning, the integration of information and communication technology (ICT) in the teaching-learning process, and an emphasis on student-centred learning. As advanced educational institutions respond to the demands of preparing students to manage the challenges of a more complex, evolving economy, the role of contemporary digital financial education resources is likely to remain ancillary and supportive of the development of productive financial skills, as it has in the past. This study offers implications for higher education institutions and those involved in policy development. For universities, MOMs show that it is possible to develop educational models that extend the boundaries of traditional financial literacy classrooms using technology and incorporate tools for interactive self-assessment and formative feedback. For policymakers and educational practitioners, the research illustrates a possible framework for integrating information and communication technology (ICT) and digital financial education into efforts to develop the financial capability of youth. However, the qualitative comments indicated that it is essential to design financial education that is aligned with the varied socioeconomic profiles of students, especially those from low-income backgrounds. Hence, more flexible learning pathways and financial education models are likely to be required.

Conclusion

In conclusion, this study supports the view that MOMs is a potentially valuable educational system for enhancing the financial literacy and educational planning of university students. The system was perceived by students as assisting their understanding of risk and financial choice. The integrated digital financial education systems proposed in the research may be a valuable component for financial education instruction and university educational planning to develop financially literate and financially capable graduates.

Conflict of interest

There is no conflict of interest involved with any parties in this research study.

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