

## **The Effect of a Smart Money Kit on the Financial Interest, Financial Management Behavior, and Prosocial Level of Preschoolers**

**Nurhayatul Nira Ramli, Samsilah Roslan\*, Tajularipin Sulaiman, Suhaida Abdul Kadir and Zeinab Zaremohzzabieh**

*Faculty of Educational Studies, Universiti Putra Malaysia, Serdang, 43400, Malaysia*

### **ABSTRACT**

Financial literacy is among the most significant components of daily life. Due to the current economic problems, the need and use for financial literacy and planning become more prevalent as one grows older. Children grow up in an infinitely uncertain world, where they are forced to take responsibility for their financial future. Since the financial intellect can be cultivated, increasing the proclivity of financial management and fostering money-related knowledge at a young age has a significant impact on promoting future financial behavior. This study was conducted in response to the need to broaden the current understanding of financial socialization among the young generation. This research aimed to ascertain whether a Smart Money Kit (SMK) can be utilized as an alternative financial education tool to increase preschoolers' financial interest, management behavior, and prosocial levels. The sample of the research included 50 preschoolers from Selangor, Malaysia. They were randomized into an experimental or control group with 25 preschoolers. A one-way MANOVA was used. The findings of within-subject multivariate tests demonstrated statistically significant differences between the control and experimental groups. In addition, the results showed a significant effect on the experimental group's level of interest score, a significant effect on the experimental group's level of financial management behavior, and a statistically significant difference in the experimental group's level of prosocial score. The study showed that SMK effectively improves children's interests in financial education, management, and prosocial behavior.

### **ARTICLE INFO**

*Article history:*

Received: 17 March 2022

Accepted: 13 July 2022

Published: 16 August 2022

DOI: <https://doi.org/10.47836/pjssh.30.3.19>

*E-mail addresses:*

[nurhayatul@upm.edu.my](mailto:nurhayatul@upm.edu.my) (Nurhayatul Nira Ramli)

[samsilah@upm.edu.my](mailto:samsilah@upm.edu.my) (Samsilah Roslan)

[tajulas@upm.edu.my](mailto:tajulas@upm.edu.my) (Tajularipin Sulaiman)

[suhaida@upm.edu.my](mailto:suhaida@upm.edu.my) (Suhaida Abdul Kadir)

[z\\_zienab@upm.edu.my](mailto:z_zienab@upm.edu.my) (Zeinab Zaremohzzabieh)

\* Corresponding author

*Keywords:* Interest, financial management behavior, preschoolers, prosocial behavior, Smart money kit

## INTRODUCTION

The literacy and knowledge of financial management have fundamentally become vital in navigating financial resources in the 21st century. Individuals, their families, and society may all be affected by poor financial decisions. It results from the increasing demands of the persistently dynamic and complex global financial market, which expects an individual to possess such aptitudes. The notion of financial literacy, jointly characterized by the International Networking and Financial Education (INFE) and the Organization of Economic Cooperation and Development (OECD), recognizes that a financially savvy society plays a pertinent role in ensuring economic progress and stability, which inevitably contributes to the building of a prosperous nation. Financial literacy refers to the knowledge and understanding of concepts, risks, skills, and motivations, as well as the confidence to employ individual knowledge and skills to make effective decisions in the financial context (OECD, 2014). It also refers to the financial understanding and capacity used to arrive at strong personal financial decisions (Te'eni-Harari, 2016), which all impact society and the nation. Furthermore, numerous studies have proven that the mastery of financial knowledge and skills during schooldays will influence adulthood (Kaiser & Menkhoff, 2020).

In this regard, Sabri et al. (2019) created the Smart Money Kit (SMK) in Malaysia. The SMK includes sixteen interactive teaching materials organized as games based on age compatibility for children aged

six to twelve that raise awareness among parents and educators on the best financial management practices for children. Getting to ascertain the knowledge children have about money, financial goals, needs against wants, savings, expenses, budgets, and basic concepts of Islamic banking are all included in this kit. The kit is used in preschools in Malaysia to help actively stimulate the minds of preschoolers (Sabri et al., 2019).

The kit is still in its early stages of development, but it is gradually being utilized to improve the financial behavior of preschoolers and students. Such financial management tools could indirectly improve the potential of individuals and produce creative and innovative human capital capable of higher-order thinking that simultaneously helps meet the goals of national educational psychology (e.g., Anthony et al., 2021). Many researchers in the field of early childhood education have duly recognized 'play' as a key factor in childhood learning (Kim, 2020; Rao et al., 2019). Despite it being an instinct, there is a necessity to include play activities in the learning sessions of children because, as stated by Brock et al. (2009), play creates opportunities for rearrangement, enrichment, and discovery in building experiences and knowledge in children through the discoveries of novel concepts. As such, apart from exploring the use of the SMK, this study also looks at conventional teaching methods to allow for an objective comparison between the two on their respective effects on the financial management behavior of preschoolers

and their interest in the study of financial management.

The problems related to teaching and learning found in past studies confirmed that the educational system is still very much teacher-centered, which is a practice that restricts the possibilities of two-way interactions between teachers and students (Kaskens et al., 2020; Levine & Pantoja, 2021). This pattern contradicts the natural, active, and exploratory inclinations of children. Hence, there is a need to include creative and appealing play elements in implementing children's activities to complement the learning and teaching processes. Unfortunately, most teachers in preschools are prone to applying direct teaching pedagogy without prioritizing play (Lee et al., 2021) due to their lack of knowledge and skills in the play approach, which inadvertently affects their familiarity with materials and play elements generally used for teaching (Blackwell et al., 2016; Padmavathi, 2017). Such inadequacies of teachers, which result in their less appealing and meaningful delivery methods (Mishra & Koehler, 2006), threaten children's interests in what is being taught and make the learning process formidable (Baranovich et al., 2019).

In this study, preschoolers are expected to learn about finances in an authentic, realistic, and meaningful context, including exposure to mannerisms that are demonstrated in a financial environment. Such learning practices offer real experiences that could stimulate children's critical thinking abilities, problem-solving skills,

curiosity, and inquisitiveness, as well as encourage hands-on involvement and equip them with extensive experience related to the natural and artificial world around them, which is exciting to explore (e.g., Bybee, 2013). Additionally, play activities could stimulate the natural integration of brain functions and learning domains (Zosh et al., 2018).

A study by Bucciol and Veronesi (2014) found that the financial literacy experience gained during childhood has a significant effect on an individual's economic standing in their adult years. It is supported by financial socialization studies which established the imperative role played by childhood experiences in shaping an individual's financial knowledge and behavior (Shim et al., 2010; Webley & Nyhus, 2013). Therefore, it can be deduced that financial education has a crucial role in developing a financially savvy generation from the tender years.

Financial literacy education has thus far been introduced through inquiry-based cooperative learning approaches, real-life case studies, didactic games, dramatic education, training, and instructions, as well as visits to prominent financial institutions (Maurer, 2014; Opletalova, 2015). These efforts, however, have shown insignificant results since the aforesaid financial literacy education does not always result in responsible behavior (Robb & Woodyard, 2011). Role-playing activities involve multiple children interacting with a particular topic or scenario, whereby each child performs in accordance with the

character he or she portrays as they engage in open roles. This role-playing approach assumes it is possible to create authentic analogies in real-life problem scenarios (Mulia, 2017). Therefore, using the SMK as a role-playing learning method with basic competencies such as recognizing needs, preferences, and self-interest is highly valued since it can develop financial attitudes and behaviors at a young age.

Against this backdrop, this paper aims to investigate the effectiveness of the SMK as an intervention to increase financial knowledge, money management behavior, and prosocial levels among preschoolers. The current research is unique in that it investigates the function of the SMK among children by examining the relationship between the SMK and their financial outcomes. The problem of a lack of play-based activities in learning and teaching in preschools has been noticed in the element of child growth and motivation, hence being unable to provide individuals with appropriate financial management behavior in the future. The findings of this study could be used to resolve problems in specific contexts by using play-based methods to learn financial management.

## LITERATURE REVIEW

In recent years, there has been a significant surge in students' interest in financial education worldwide (e.g., Agnew & Harrison, 2015). As a result, teachers and education experts are figuring out ways to pique the interest of children and youth in financial education and money management.

When a child is six years old, he or she learns to establish rules, make connections, discern between different sorts of money, and classify things according to their price levels (Te'eni-Harari, 2016). For instance, in Morocco, the Fondation Marocaine pour l'Éducation Financiere (FMEF) ran various social media campaigns, most notably on Facebook, to raise awareness on topics of interest in financial education among young people by using appealing formats and graphics (Slaoui et al., 2020).

A theory based on cognitive development (Piaget, 2003) provides theoretical support for this study. The theory posits that, as children equilibrate new concepts, they progress through four phases of development, namely, (1) sensorimotor, (2) preoperational, (3) concrete operations, and (4) abstract reasoning. According to Piaget (2003), children of this age would be primarily concerned with their finances and how their decisions would directly affect them. Furthermore, they would comprehend in a one-dimensional manner and focus on a single aspect of this concept. Children must understand the role and nature of money before they can appreciate more abstract economic concepts by promoting the development of responsible financial behavior. Once these concepts are mastered, they can then go on to learn about abstract concepts.

Recently, game-based learning has been identified as an entertaining and successful technique for teaching students, and it can be particularly good for educating and familiarizing students on how to handle

money since it allows them to learn from their own decisions and encourages them to be interested in financial management (e.g., Johan et al., 2021). Payback, Spent, Financial Football, Shady Sam, Money Magic, the Payoff, Hit the Road: Financial Adventure, the Uber Game, and Credit Clash are popular games for students to learn how to manage their finances (Kalmi & Sihvonen, 2021). Concerning the mentioned scenario, Sabri et al. (2019) introduced the SMK in Malaysia as an interactive game-based learning approach that encourages kids, particularly preschoolers, to cultivate an interest in money management.

Financial management behavior has evolved into a noteworthy aspect of enhancing individual well-being (Chan et al., 2012). According to Al Kholilah and Iramani (2013), financial management behavior is the ability of people to perform financial duties such as making plans, monitoring, searching, and bookkeeping in the long and short term. Therefore, using appropriate learning games in financial literacy education should be encouraged to improve students' financial management skills. As a result, every student should use a game-based learning strategy to take the initial step toward changing their financial behavior. Previous studies revealed a positive correlation between digital learning games and financial literacy education (Aprea et al., 2017). This finding is similar to the results of Chen et al. (2013), who discovered how digital games could be a favorable environment to aid children in learning about financial management.

Prosocial behaviors are defined by their intended implications for others and are carried out voluntarily rather than under compulsion (Al-Thani & Semmar, 2017; Malti & Dys, 2018). It is also defined as an activity that aims to improve another person's, even though the helper is not obligated to do so and the help recipient is not an institution but an individual (Kavussanu, 2006). Developmental and evolutionary psychologists have recognized various domains of prosocial behavior, including informing, assisting, donating, soothing, participating, and volunteering (House et al., 2020). Gentile et al. (2009) believed that prosocial games facilitated various learning, including financial learning. The General Learning Model, according to La Guardia et al. (2014), argues that any learning encounters can have affective, arousal, and/or cognitive impacts in the short term. As a result, if the game necessitates prosocial behaviors to succeed, these prosocial behaviors should be strengthened soon after the game. However, empirical evidence of the effects of prosocial games as a tool to promote financial education is lacking. Gentile et al. (2009) discovered that Singaporean middle-school pupils who participated in more prosocial games acted more prosocial.

Furthermore, prosocial game play predicted subsequent benefits in prosocial conduct in two longitudinal samples of Japanese children and adolescents. Therefore, the research objectives are to explore whether the SMK could increase preschoolers' interest in financial education

and financial management and increase the prosocial levels of preschoolers. Furthermore, past findings have shown that board games can increase these elements. Thus, the researcher of the present study postulated that:

Hypothesis 1. *The SMK has a significant positive effect on the interest of preschoolers in financial education.*

Hypothesis 2. *The SMK has a significant positive effect on the financial management behavior of preschoolers.*

Hypothesis 3. *The SMK has a significant positive effect on the prosocial levels of preschoolers.*

## **METHODOLOGY**

A quasi-experiment was used as a research design with two randomly assigned groups. In this study, treatments are applied to experimental units in a treatment group in the design of experiments. Members of a control group get regular therapy, a placebo, or no treatment at all in comparison tests. There might be several treatment groups, multiple control groups, or both (Hair et al., 2007).

### **Participants and Procedures**

The sample for the present study included 50 preschoolers from Selangor, Malaysia. This study selected 50 Malaysian preschoolers registered in public primary schools as research samples. The selected students possessed more or less the same capabilities and interests, as proven by their mid-year evaluations conducted by class teachers

based on the assessment standards set by the Ministry of Education (MoE) of Malaysia. Such a selection ensures equilibrium in terms of interests in financial education and financial management behavior between the two research groups (e.g., Murtagh & Heck, 2012).

They were randomized into an experimental or a control group, with 25 preschoolers in each group. This research was conducted in the Family, Adolescent, and Child Research Centre of Excellence (FACE) at Universiti Putra Malaysia by using one control class (B1) and one experimental class (B2). The difference between the two groups was the teaching approach employed. The experimental class was treated using the SMK method, while the control class was treated using the conventional method. The intervention for this study involved 3-weeks' worth of SMK activities. The SMK was given to the experimental group for one 30-minute session per week. G\*Power 3.0.10 was used to determine the total number of participants (Cohen, 1992). The total sample size for the MANOVA and the comparing factors for the two groups is 50.

### **Instruments**

The interest scale was measured using the Preschool Learning Behavior Scale (PLBS) (McDermott et al., 2002), which was created to study interest and learning behaviors. Next, the prosocial scale was measured using the Preschool and Kindergarten Behavior Scale (Merrell, 1994) to measure the prosocial levels of preschoolers. Finally, financial

management behavior was measured using the financial management behavior scale (Dew & Xiao, 2011). This study used a five-point Likert scale for the pre-and post-test. The Cronbach's  $\alpha$  for the interest in financial education, prosocial behavior, and financial management behavior varied from 0.71 to 0.86, which indicated moderate to good internal consistency.

### DATA ANALYSIS

The data were analyzed using a one-way MANOVA. The one-way MANOVA is the ideal option when one or more independent variables (control and experimental group) and numerous dependent variables (interest in financial education, financial management behavior, and prosocial behavior) are evaluated several times.

### RESULTS AND DISCUSSION

To determine the significance of the SMK on the interest in financial education, financial

management behavior, and prosocial levels, a one-way MANOVA was used. Table 1 displays the average scores of each group and is separated by the assessment tool.

Table 1 shows that the mean score of the variable of interest in financial education for the control group increased to 2.1600 in the post-test, compared to the 2.1229 achieved in the pre-test. Similarly, the treatment group recorded a mean score for their post-test that increased to 3.8343, compared to the pre-test, which was only 1.6457. Data analysis shows differences in the mean value of the interest in financial education in the post-test for the treatment and control groups, which were 3.8343 and 2.1600, respectively. The mean difference between the two groups was 1.6743. It shows that the interest in the financial education of preschoolers in financial management learning increased by using the financial management game method compared to learning the conventional way.

Table 1

*Descriptive analysis of the mean scores of a pre-test for the dependent variables of student interest, student financial management behavior, and student prosocial levels for the treatment and control groups*

Variable	Group	Mean	
		Pre-Test	Post-Test
SI	Control	2.1229 (.08123)	2.1600 (.09512)
	Treatment	1.6457 (.12791)	3.8343 (.11795)
FMB	Control	2.0533 (.18459)	2.0311 (.18570)
	Treatment	2.6089 (.17309)	4.0133 (.15818)
SPL	Control	3.2074 (.07784)	3.1881 (.18700)
	Treatment	2.4133 (.09954)	3.1511 (.11462)

*Note:* Student Interest=SI; Student Financial Management Behavior=FMB; Student Prosocial Level=SPL

The increased interest rate in the students' financial education was highly significant concerning the direct engagement of financial management games, as proven by the increase in mean interest in financial education in the post-tests.

Multivariate analyses of within-subjects throughout time, as shown in Table 2, showed statistically significant differences between the control and experimental groups,  $F(3, 46) = 21.44, p = 0.000$ .

Table 2  
*Multivariate tests of within-subjects*

Effect	Value	F	Hypotheses df	Error df	p
Pillai's Trace	0.984	485.03 <sup>b</sup>	3.000	46.000	.000
Wilks' Lambda	0.216	485.03 <sup>b</sup>	3.000	46.000	.000
Hotelling's Trace	8.727	485.03 <sup>b</sup>	3.000	46.000	.000
Roy's largest Root	8.727	485.03 <sup>b</sup>	3.000	46.000	.000

Note: b. Exact statistic

Table 3  
*Tests of between-subjects effects on pre-and post-test mean scores*

Source	DV	Type III Sum of Squares	df	Mean Square	F	Sig.
Control	SI	8.957	1	8.957	780.271	.000
	FMB	40.252	1	40.252	1303.295	.000
	SPL	4.317	1	4.317	269.511	.000
Experimental	SI	30.961	1	30.961	2697.071	.000
	FMB	11.941	1	11.941	386.626	.000
	SPL	3.227	1	3.227	201.434	.000
Control	SI	28.929	1	28.929	2520.040	.000
Experimental *	FMB	12.721	1	12.721	411.889	.000
	SPL	3.582	1	3.582	223.610	.000
Error	SI	1.102	96	.011		
	FMB	2.965	96	.031		
	SPL	1.538	96	.016		

Note: Student Interest=SI; Financial Management Behavior=SB; Student Prosocial Level=SPL

Table 4  
*Differences between pre-test and post-test scores: experimental vs. control group*

Assessment tool	t	F	DF	Sig.
SI	-2.321	389.90	46	.000
FMB	-4.146	775.701	46	.000
SPL	-5.037	1012.226	46	.000

Note: Student Interest=SI; Financial Management Behavior=FMB; Student Prosocial Level=SPL



### **Hypothesis 1. The SMK has a Significant Positive Effect on the Interest of Preschoolers in Financial Education**

The findings revealed a statistically significant influence on preschoolers' interest in financial education in the control group ( $F(1, 96) = 780.271$ ;  $p = 0.000$ ). Table 3 reveals that the experimental group's interest scores are statistically pronounced ( $F(1, 96) = 2697.071$ ;  $p = 0.000$ ). As indicated in Table 4, the experimental and control groups had a significant difference in post-test scores ( $t(46) = -2.321$ ,  $p = 0.000$ ) after using the SMK for at least 30 minutes. Thus, Hypothesis 1 was supported.

The results confirmed that the increased interest rate in students' financial education was highly significant concerning the direct engagement with the SMK. It proves that there was effective communication between the teachers and students; which was similar to the results found in the study conducted by Roopnarine and Johnson (2005), in which Vygotsky (2012) states that mental processes quickly develop when students form speech while carrying out practical activities and that such communication processes and responses also help alter their behavioral patterns. Additionally, the children could plan and control their immediate environment. Through their play activities, they could learn to communicate, adapt to their environment, interact with friends, and recognize things that existed around them. Past research has also found that most children obtain communication skills naturally without directly learning these skills from adults (Bodrova &

Leong, 2010; Walsh & Petty, 2007). For example, Sherraden et al. (2011) observed a connection between play and financial literacy skills involving symbols, sound structures, and printed materials. The same study also observed that financial literacy skills could be cultivated through games containing symbols and printed materials.

### **Hypothesis 2. The SMK has a Significant Positive Effect on the Financial Management Behavior of Preschoolers**

As shown in Table 4, the control group  $F(1, 96) = 1303.295$ ;  $p = 0.000$ , and the experimental group  $F(1, 96) = 386.626$ ;  $p = 0.000$ , both have a statistically significant effect on financial management behavior. As demonstrated in Table 4, using the SMK for at least 30 minutes every day resulted in a noteworthy change in post-test results ( $t(46) = -4.146$ ,  $p = 0.000$ ). These findings imply a statistically significant influence on preschoolers' financial management behavior.

Such a finding supports the financial socialization theory, which states that experiences gained during childhood have a role in shaping an individual's knowledge and financial behavior (e.g., Shim et al., 2010). According to Lusardi et al. (2010) and Buccioli and Veronesi (2014), the financial literacy experience gained in childhood is highly substantial to the future economic level of an individual. Children as young as three years old are exposed to the use of money as a medium of a transaction as a result of living in the present global era. It is a skill that they further develop in

their adulthood to comprehend the monetary system and regulations. Nonetheless, the fact remains that due to limited maturity, children experience difficulty in organizing these skills methodically and systematically, given that their knowledge is limited to only their immediate experiences (e.g., Berti et al., 1988).

Furthermore, it was found that these children only become fully cognizant of the advantages of saving, grow confident in making financial decisions, and acquire additional financial expertise when they reach adulthood because of the experience they acquire along the way. As a result, financial education becomes crucial in present-day scenarios. It plays an incredibly important and effective role in serving as a valuable experience that could help shape children's knowledge and efficient behavior, which aids in building a future generation that is financially efficient. Such exposure should begin from an early age. Past studies have also demonstrated that what is learned during childhood will impact knowledge, values, attitude, and practices in adulthood (e.g., Kim & Chatterjee, 2013).

### **Hypothesis 3. The SMK has a Significant Positive Effect on the Prosocial Levels of Preschoolers**

According to the MANOVA, those exposed to the SMK improved significantly in prosocial behavior. In the control group,  $F(1, 96) = 269.511$ ,  $p = 0.000$ , and in the experimental group,  $F(1, 96) = 201.434$ ,  $p = 0.000$ , there was a statistically significant difference in prosocial behavior based on the usage of the SMK, as shown in Table

3. Furthermore, as shown in Table 4, there was a significant difference between the control and experimental group post-test scores  $t(46) = -5.037$ ,  $p = 0.000$  with the use of the SMK for at least 30 minutes. These results suggest that there is a statistically noteworthy effect on levels of prosocial behaviors of preschoolers. Thus, Hypothesis 3 was also supported.

This result shows that there has been a positive change in the development of preschoolers' prosocial behavior levels. It also confirms Piaget's (1964) theory, which recommends that children be given the freedom to choose their activities and that children are naturally more prone to developing their needs. At the same time, children will be able to choose exciting activities based on their previous experience and master a new skill. In addition, it offers the opportunity for developmental stimulation of children's cognitive, social, emotional, physical, spiritual, and linguistic faculties, should they be allowed to learn through play. Playing has also been proven to contribute to self-regulatory and social skills such as waiting for one's turn, collaborating, adhering to the rules, empathy, and motivation (Bodrova & Leong, 2010; McLachlan et al., 2018).

In addition, Casbergue and Kieff (1998) have stated that edutainment-based games, such as board games, video games, and card games, may be used in an educational environment even though they have divergent educational goals. Education-based games can be used to aid children in obtaining skills, educate them on a particular subject of interest, strengthen knowledge,

and enhance confidence. Huizinga (1950) explains that one of the means of learning is using board games, which are different from games without rules because the former requires players to adhere to the rules of the game in challenging opponents. Consequently, to add to their practical knowledge, children learn social skills that will teach them ways to interact with their peers, follow the rules of games, and understand the perspectives of others. Related studies have also shown numerous positive prosocial behaviors result from children playing board games. According to DeVries and Kohlberg (1987), competitive board games are conducive to social and moral development because they are an activity that requires the synchronization of opposite objectives in a broad and dynamic collaborative context. Such a finding suggests that competition can only exist if the opponents cooperate and mutually agree to the procedures and adhere to and enforce rules, even if the rules do not work in their favor. Such games would not run smoothly unless the players cooperated by synchronizing their thoughts.

### **PRACTICAL AND THEORETICAL IMPLICATIONS**

The researcher has conducted the SMK as an intervention strategy that addresses financial interest, financial management behavior, and prosocial levels of preschoolers. Accordingly, the major practical contribution of the current research is that it provides much-needed empirical data on the effectiveness of the SMK. The information provided in the

current study shall allow the interventionists, policymakers, schoolteachers, and educators to design tools, actions, and initiatives based on what is being proposed in the SMK to suit the Malaysian context. It is to meet the needs of local interventionists relying solely on empirical data from western countries, even though distinct cultural factors must be considered. Furthermore, this study offers evidence-based principles and is theory-driven on the aspects and strategies for improving financial interest, financial management behavior, and prosocial levels of preschoolers. Theoretically, the study provides empirical evidence on the necessity of the SMK. It contributes to the further advancement of cognitive development, especially in identifying appropriate financial literacy concepts and teaching challenges.

### **CONCLUSION**

From the present research findings and data analysis, it can be concluded that the use of the SMK in teaching and learning has helped improve the interest in financial education, financial management behavior, and prosocial levels among preschoolers in Malaysia. The increase in scores for the three variables demonstrated that the SMK is a highly beneficial tool in expanding the interest in financial education, financial management behavior, and prosocial levels of preschoolers in financial management. The play elements that teachers employed added meaning to the children through interactions with their surroundings and environment. The teacher's role, therefore, is to provide

opportunities that could motivate children to become involved, either individually or in groups. Teachers must also ensure that the play activities and experiences they organize are structured, involve cognitive progressions, and possess elements of social processes. Social processes in this context refer to play activities that are not conducted individually but are instead activities that involve interactions with others.

Additionally, this research could be utilized as a benchmark or to illustrate to preschool teachers the extent to which the SMK can influence the interests in financial education, financial management behavior, and prosocial levels of students. Financial management games can also be used across multiple subjects and levels related to preschoolers, which could make it a common method that preschoolers, teachers, and parents use for problem-solving and to familiarize preschoolers with critical and creative thinking. Finally, the findings demonstrated by this study could serve as a guide to teachers, school authorities, and stakeholders to increase the interest of preschoolers in learning the SMK.

## ACKNOWLEDGEMENTS

The authors want to acknowledge all the respondents' parents and staff of the Family, Adolescent and Child Research Centre of Excellence (FACE), Serdang, for assisting the researchers in conducting this study. In addition, the authors would like to express great appreciation to Prof. Dr. Mohamad Fazli Sabri and Assoc. Prof. Dr. Mariani Mansor for their valuable and constructive

support during the development of this research work.

## REFERENCES

- Agnew, S., & Harrison, N. (2015). Financial literacy and student attitudes to debt: A cross national study examining the influence of gender on personal finance concepts. *Journal of Retailing and Consumer Services*, 25, 122-129. <https://doi.org/10.1016/j.jretconser.2015.04.006>
- Al Kholilah, N., & Iramani, R. (2013). Studi financial management behavior pada masyarakat Surabaya [Study of financial management behavior in Surabaya community]. *Journal of Business and Banking*, 3(1), 69-80. <https://doi.org/10.14414/jbb.v3i1.255>
- Al-Thani, T., & Semmar, Y. (2017). An exploratory study of teachers' perceptions of prosocial behaviors in preschool children. *International Journal of Educational Development*, 53, 145-150. <https://doi.org/10.1016/j.ijedudev.2017.01.005>
- Anthony, M., Sabri, M. F., Wijekoon, R., Abdul, H., Rahim, H. A., Othman, M. A., & Yusoff, I. S. M. (2021). The influence of financial socialization, financial behavior, locus of control and financial stress on young adults' financial vulnerability. *Social Sciences*, 11(19), 289-309. <https://doi.org/10.6007/IJARBSS/v11-i19/11738>
- Apra, C., Schultheis, J., & Stolle, K. (2017). *Designing game-based learning arrangements in financial literacy education*. ECER. <https://madoc.bib.uni-mannheim.de/48008/>
- Baranovich, D.-L., Fong, P.-C., & Hutagalung, F. (2019). Parental scaffolding in mathematics homework among Malaysian private preschoolers: A case study. *International Journal of Science and Mathematics Education*, 17(1), 173-196. <https://doi.org/10.1007/s10763-017-9850-2>

- Berti, A. E., Bombi, A. S., & Duveen, G. T. (1988). *The child's construction of economics* (G. Duveen, Trans.). Cambridge University Press.
- Blackwell, C. K., Lauricella, A. R., & Wartella, E. (2016). The influence of TPACK contextual factors on early childhood educators' tablet computer use. *Computers & Education*, *98*, 57-69. <https://doi.org/10.1016/j.compedu.2016.02.010>
- Bodrova, E., & Leong, D. J. (2010). Revisiting Vygotskian perspectives on play and pedagogy. In S. Rogers (Ed.), *Rethinking play and pedagogy in early childhood education* (pp. 68-80). Routledge.
- Brock, L. L., Rimm-Kaufman, S. E., Nathanson, L., & Grimm, K. J. (2009). The contributions of 'hot' and 'cool' executive function to children's academic achievement, learning-related behaviors, and engagement in kindergarten. *Early Childhood Research Quarterly*, *24*(3), 337-349. <https://doi.org/10.1016/j.ecresq.2009.06.001>
- Buccioli, A., & Veronesi, M. (2014). Teaching children to save: What is the best strategy for lifetime savings? *Journal of Economic Psychology*, *45*, 1-17. <https://doi.org/10.1016/j.joep.2014.07.003>
- Bybee, R. W. (2013). *The case for STEM education: Challenges and opportunities*. NSTA Press.
- Casbergue, R. M., & Kieff, J. (1998). Marbles, anyone?: Traditional games in the classroom. *Childhood Education*, *74*(3), 143-147. <https://doi.org/10.1080/00094056.1998.10522691>
- Chan, S. F., Chau, A. W.-L., & Chan, K. Y.-K. (2012). Financial knowledge and aptitudes: Impacts on college students' financial well-being. *College Student Journal*, *46*(1), 114-133.
- Chen, Z., Lu, C., Chou, C., Chen, L., Chiang, C.-W., & Wan, C.-F. (2013). My-investment: Using digital games to help children learn financial management. *Research & Practice in Technology Enhanced Learning*, *8*(2), 277-290.
- Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science*, *1*(3), 98-101.
- DeVries, R., & Kohlberg, L. (1987). *Constructivist early education: Overview and comparison with other programs*. Longman.
- Dew, J. P., & Xiao, J. J. (2011). The financial management behavior scale: Development and validation. *Journal of Financial Counseling and Planning*, *22*(1), 19-35.
- Gentile, D. A., Anderson, C. A., Yukawa, S., Ihori, N., Saleem, M., Ming, L. K., Shibuya, A., Liau, A. K., Khoo, A., & Bushman, B. J. (2009). The effects of prosocial video games on prosocial behaviors: International evidence from correlational, longitudinal, and experimental studies. *Personality and Social Psychology Bulletin*, *35*(6), 752-763. <https://doi.org/10.1177/0146167209333045>
- Hair, J. F., Money, A. H., Samouel, P., & Page, M. (2007). Research methods for business. *Education + Training*, *49*(4), 336-337. <https://doi.org/10.1108/et.2007.49.4.336.2>
- House, B. R., Kanngiesser, P., Barrett, H. C., Broesch, T., Cebioglu, S., Crittenden, A. N., Erut, A., Lew-Levy, S., Sebastian-Enesco, C., & Smith, A. M. (2020). Universal norm psychology leads to societal diversity in prosocial behaviour and development. *Nature Human Behaviour*, *4*(1), 36-44. <https://doi.org/10.1038/s41562-019-0734-z>
- Huizinga, J. (1950). *Homo Ludens: An essay on the social function of play*. Beacon Press.
- Johan, I., Rowlingson, K., & Appleyard, L. (2021). The effect of personal finance education on the financial knowledge, attitudes and behaviour of university students in Indonesia. *Journal of Family and Economic Issues*, *42*(2), 351-367. <https://doi.org/10.1007/s10834-020-09721-9>

- Kaiser, T., & Menkhoff, L. (2020). Financial education in schools: A meta-analysis of experimental studies. *Economics of Education Review*, 78, 101930. <https://doi.org/10.1016/j.econedurev.2019.101930>
- Kalmi, P., & Sihvonen, T. (2021). On the potential of games in financial education. In G. Nicolini & B. J. Cude (Eds.), *The Routledge handbook of financial literacy*. Routledge.
- Kaskens, J., Segers, E., Goei, S. L., van Luit, J. E., & Verhoeven, L. (2020). Impact of children's math self-concept, math self-efficacy, math anxiety, and teacher competencies on math development. *Teaching and Teacher Education*, 94, 103096. <https://doi.org/10.1016/j.tate.2020.103096>
- Kavussanu, M. (2006). Motivational predictors of prosocial and antisocial behaviour in football. *Journal of Sports Sciences*, 24(6), 575-588. <https://doi.org/10.1080/02640410500190825>
- Kim, J. (2020). Learning and teaching online during Covid-19: Experiences of student teachers in an early childhood education practicum. *International Journal of Early Childhood*, 52(2), 145-158. <https://doi.org/10.1007/s13158-020-00272-6>
- Kim, J., & Chatterjee, S. (2013). Childhood financial socialization and young adults' financial management. *Journal of Financial Counseling & Planning*, 24(1), 61-79.
- La Guardia, D., Gentile, M., Dal Grande, V., Ottaviano, S., & Allegra, M. (2014). A game based learning model for entrepreneurship education. *Procedia-Social and Behavioral Sciences*, 141, 195-199. <https://doi.org/10.1016/j.sbspro.2014.05.034>
- Lee, S. T., Wong, J. E., Chan, G. K., & Poh, B. K. (2021). Association between compliance with movement behavior guidelines and obesity among Malaysian preschoolers. *International Journal of Environmental Research and Public Health*, 18(9), 4611. <https://doi.org/10.3390/ijerph18094611>
- Levine, S. C., & Pantoja, N. (2021). Development of children's math attitudes: Gender differences, key socializers, and intervention approaches. *Developmental Review*, 62, 1-44. <https://doi.org/10.1016/j.dr.2021.100997>
- Lusardi, A., Mitchell, O. S., & Curto, V. (2010). Financial literacy among the young. *Journal of Consumer Affairs*, 44(2), 358-380.
- Malti, T., & Dys, S. P. (2018). From being nice to being kind: Development of prosocial behaviors. *Current Opinion in Psychology*, 20, 45-49. <https://doi.org/10.1016/j.copsyc.2017.07.036>
- Maurer, T. W. (2014). Teaching financial literacy with process-oriented guided-inquiry learning (POGIL). *Journal of Financial Education*, 40(3/4), 140-163.
- McDermott, P. A., Leigh, N. M., & Perry, M. A. (2002). Development and validation of the preschool learning behaviors scale. *Psychology in the Schools*, 39(4), 353-365.
- McLachlan, C., Flear, M., & Edwards, S. (2018). *Early childhood curriculum: Planning, assessment and implementation* (3rd ed.). Cambridge University Press.
- Merrell, K. W. (1994). *Preschool and kindergarten behavior scales. Test manual*. Clinical Psychology Publishing Company.
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017-1054.
- Mulia, A. (2017, October 20). *Pendidikan karakter anak usia dini melalui metode Role Playing (main peran) [Early childhood character education through Role Playing method]*. Seminar Nasional Tahunan Pendidikan Ilmu-Ilmu Sosial, Medan, Indonesia.
- Murtagh, F., & Heck, A. (2012). *Multivariate data analysis* (Vol. 131). Springer Science & Business Media.

- Organization of Economic Co-operation and Development. (2014). *Focus on inequality and growth (Directorate for employment, labour and social affairs)*. <https://www.oecd.org/social/Focus-Inequality-and-Growth-2014.pdf>
- Opletalova, A. (2015). Financial education and financial literacy in the Czech education system. *Procedia-Social and Behavioral Sciences*, 171, 1176-1184. <https://doi.org/10.1016/j.sbspro.2015.01.229>
- Padmavathi, M. (2017). Preparing teachers for technology based teaching-learning using TPACK. *Journal on School Educational Technology*, 12(3), 1-9.
- Piaget, J. (1964). Part I: Cognitive development in children: Piaget development and learning. *Journal of Research in Science Teaching*, 2(3), 176-186. <https://doi.org/10.1002/tea.3660020306>
- Rao, N., Richards, B., Sun, J., Weber, A., & Sincovich, A. (2019). Early childhood education and child development in four countries in East Asia and the Pacific. *Early Childhood Research Quarterly*, 47, 169-181. <https://doi.org/10.1016/j.ecresq.2018.08.011>
- Robb, C. A., & Woodyard, A. (2011). Financial knowledge and best practice behavior. *Journal of Financial Counseling and Planning*, 22(1), 60-70.
- Roopnarine, J. L., & Johnson, J. E. (2005). *Approach to early childhood education* (4th ed.). Pearson Merrill Prentice Hall.
- Sabri, M. F., Wijekoon, R., Ramli, N. N., & Dass, T. M. (2019). The impact of Smart Money Kit on children's financial knowledge, attitude and behavior. *ESTEEM Journal of Social Sciences and Humanities*, 3, 48-59.
- Sherraden, M. S., Johnson, L., Guo, B., & Elliott, W. (2011). Financial capability in children: Effects of participation in a school-based financial education and savings program. *Journal of Family and Economic Issues*, 32(3), 385-399. <https://doi.org/10.1007/s10834-010-9220-5>
- Shim, S., Barber, B. L., Card, N. A., Xiao, J. J., & Serido, J. (2010). Financial socialization of first-year college students: The roles of parents, work, and education. *Journal of Youth and Adolescence*, 39(12), 1457-1470. <https://doi.org/10.1007/s10964-009-9432-x>
- Slaoui, C. B., Boulahoual, A., & Dinia, M. (2020). Institution financière et promotion de l'éducation financière au Maroc: Entre objectifs et réalisations [Financial institution and promotion of financial education in Morocco: Between objectives and achievements]. *International Journal of Economics and Management Research*, 1(2), 124-153.
- Te'eni-Harari, T. (2016). Financial literacy among children: The role of involvement in saving money. *Young Consumers*, 17(2), 197-208. <https://doi.org/10.1108/YC-01-2016-00579>
- Vygotsky, L. S. (2012). *Thought and language (revised and expanded)*. MIT Press.
- Walsh, B. A., & Petty, K. (2007). Frequency of six early childhood education approaches: A 10-year content analysis of early childhood education journal. *Early Childhood Education Journal*, 34(5), 301-305. <https://doi.org/10.1007/s10643-006-0080-4>
- Webley, P., & Nyhus, E. K. (2013). Economic socialization, saving and assets in European young adults. *Economics of Education Review*, 33, 19-30. <https://doi.org/10.1016/j.econedurev.2012.09.001>
- Zosh, J. M., Hirsh-Pasek, K., Hopkins, E. J., Jensen, H., Liu, C., Neale, D., Solis, S. L., & Whitebread, D. (2018). Accessing the inaccessible: Redefining play as a spectrum. *Frontiers in Psychology*, 9, 1124. <https://doi.org/10.3389/fpsyg.2018.01124>

