

DOES THE *BIJAK WANG* (SMART MONEY) PROGRAMME BENEFIT SCHOOLGOING CHILDREN?

Mohamad Fazli Sabri¹, Thinagaran Moga Dass¹, Lee May Poh¹, Nornadia Liz Zakaria¹, Rozita Wahab¹ and Nurhayatul Nira Ramli¹

Abstract

The Bijak Wang or Smart Money programme is a half-day interactive workshop on money and money management targeted at children aged 10 to 12 years. The objective of the programme is to develop financial literacy through the use of an interactive games kit i.e. Smart Money Kit: Bright Kids Smart Money. This innovative programme was developed as an alternative learning and teaching tool for children to acquire personal financial management knowledge and skills with guidance from parents and adults. The kit comprises conservative board games that help to sharpen children's soft skills in communication, strategic planning and critical thinking. Research literature has revealed that instilling money management knowledge and skills in children will impact positively on them, empowering them to manage better their finances in future. The concept behind this programme is learning through play. This programme was conducted with four groups of participants from different geographical areas. Participants engaged in gameplay with Profesor Bijak Wang and Ekspedisi ABCD which are both board games; Cuba Ingat dan Teka which is a flash card game; and Reka Tabung ABCD. All these games are highly integrated with the six basic money management concepts. As the participants play, they undergo cognitive absorption of money management concepts, which they will tend to apply in their future daily lives. Pre and post-testing using a self-administrated questionnaire was conducted to analyse the level of money management skills and knowledge the children had before participating in the programme and the level that they had acquired after they had participated in the various gameplays. The results of the post-test show that the children's financial literacy improved with their increased acquisition of money management skills and knowledge as compared to the level they initially had as revealed by the results of the pre-test conducted. This indicates that children learn effectively through interactive learning using the Smart Money Kit: Bright Kids Smart Money. As such, parents and teachers should use innovative and creative approaches in educating children about money and money management and treat this learning as a lifelong process so children will make prudent financial decisions in their future.

Keywords: Financial Literacy, Money Management, Smart Money Programme, Game-Play

Introduction

Consumers today are faced with having to make complicated financial decisions because of the increasingly complex financial environment, and find that imprudent financial decisions (excessive spending, living on borrowed money and deferred debt payment) made earlier in life can be costly. Inefficiency in financial management will lead to negative economic and social effects that include increased divorce rates,

¹ Faculty of Human Ecology, Universiti Putra Malaysia. Corresponding author: fazli@upm.edu.my

spousal and child abuse, reduced workplace productivity, rising crime rates, depression and other health problems. The National Population and Family Development Board (2012) reported that one of the main factors for the rise in divorces is economic or financial problems within the family. In this regard, financial education can be seen as the best strategy for helping individuals to manage their limited financial resources wisely, ultimately resulting in a decrease in the number of individuals being declared bankrupt. Previous research has also shown that what is learnt at a young age affects knowledge, values, attitudes and practices in adulthood (Garman & Fargue, 2005; Holden, Kalish, Scheinholtz, Dietrich, & Novak, 2009; Kim & Chatterjee, 2013).

Furthermore, financial literacy has long been drawing attention in the literature of economics and is defined as the capacity to settle on educated judgements and powerful choices with respect to the utilization and administration of wealth and cash (Gale & Levine, 2010). There is a developing mindfulness that numerous households have minimal money-related proficiency; individuals as well as households that are less fiscally proficient have been observed to be less inclined to possess a retirement plan and savings and are more prone to pay just the minimum payable for a charge card, have higher obligation levels, take pay day advances, go up against high cost contracts, and be rebopate on payment obligations. Financially illiterate households make poor financial decisions and bring about negative consequences on their families and on society as a whole. As such, early financial education and raising financial literacy are imperative and should be a first order concern for public policy and educators.

Studies connecting children to personal financial management knowledge and skills reveal a requirement for increased monetary education even at a youthful age, and express that money-related proficiency is not a debatable aptitude in this day and age (Sloan & Willona, 2012; Mohd. Fazli, Cook, Shelley, Hira, Garasky & Swanson, 2012). Children and youth are interestingly affected by family unit finance complexities particularly in today's current volatile environment (a home loan abandonment emergency, credit fixing, quickly rising fuel and food costs, etc.). Exposing children and youth to examples of the consequences of poor financial management provide opportunities for them to learn about the importance of personal finance management and to enhance their own future cash management skills (Kim & Chatterjee, 2013a). Childhood money-related education should be preventive, prescriptive, formative and conveyed on a scale larger than at present (McCormick, 2009). Therefore, instructional methodologies that are suitable for childhood financial education should be effectively integrated into the educational system to prepare children to be fiscally proficient in their future lives.

Education, particularly in financial management, should begin at a young age, where the home and the school are seen as the environments closest to children that have the greatest influence in shaping their development and growth. Childhood is no longer considered a period of life shielded from the worlds of finance and economics (Van Fossen 2003). Past research has also revealed that parents, teachers and the school are the institutions that have the most significant impact on influencing children (Bandura, 1977; McNeal, 1987; Sabri, McDonald, Masud & Hira, 2011). However, not many parents and teachers have the knowledge and skills to educate children in

money management. Many parents feel that it is too early to expose young children to the subject. In the context of early childhood education, parents, teachers and other adults need to utilise various approaches in teaching and learning appropriate to children's developmental level, needs, aptitudes, interests and backgrounds. Most childhood psychologists recommend play as the best and most effective method of teaching children.

Moreover, current research on behavioural learning is significantly related to children's educational programmes and financial literacy. The objective of this research to educate children in financial literacy through interactive games in order to develop children's personal financial management knowledge and skills. Albert Bandura's Social Learning Theory (1977) suggests that people learn from one another through observation, imitation, and modelling. The theory also posits that learning is a subjective procedure that occurs in a social setting and can happen absolutely through perception or direct guidelines (Bandura, 2001). Hence, the *Bijak Wang* programme which is a half-day interactive workshop on money and money management is in accordance with social learning theory which integrates behavioural and cognitive leaning in order to provide a comprehensive model that could account for the wide range of learning experiences that occur in the real world.

Existing literature demonstrates a strong association between educational programmes and financial literacy. According to a study by William (2015), money-related programmes or education have a constructive association with an individual's budgetary proficiency score. The research study split the sample into groups according to wage and education and results demonstrate that individuals with low education level and wage have bigger course coefficients as compared to individuals with high education and salary (Wagner, 2015). In addition, financial education programmes have the best association with monetary information and seem to positively affect long-term practices. For instance, if one inaccurately gauges the amount of money they require in retirement, there is no real way to settle this slip-up, thus affecting their retirement life (Joseph, Dhanuraj, & Joseph, 2017) . To further answer the question, this researcher has developed the Smart Money Kit: Bright Kids Smart Money as an alternative financial education tool for parents, teachers and other adults to assist in educating children in personal financial management. The objectives of this study are to assess the effectiveness of the *Bijak Wang* programme in educating children in financial management to raise their financial literacy through interactive games and to measure the financial literacy of the participants before and after participation in the programme.

Literature Review

Financial Literacy

As the money-related scene for consumers becomes progressively perplexing, the significance of increasing financial literacy education has grown. A number of studies have characterized money-related proficiency to the information of budgetary items (the distinction between a settled and a flexible rate contract, and the meaning of a stock and a security), learning of monetary ideas (FICO ratings, exacerbating, swelling, and broadening), scientific abilities for viable money-related basic

leadership, and engagement in specific exercises, for example financial planning (Agnew & Harrison, 2015; Hastings, Madrian, & Skimmyhorn, 2013; Scheresberg, 2013). Lusardi (2008) defines "financial literacy" as "the capacity to utilize information and aptitudes to deal with one's budgetary assets viably for lifetime monetary security."

Although most monetary choices are made by grown-ups, there is a growing need for instilling financial literacy in the young with the expectation that they will create aptitudes as expected to effectively deal with their funds in adulthood (Berry, Karlan, & Pradhan, 2014; Wagner, 2015; Walstad, Rebeck, & MacDonald, 2010). A few previous studies revealed that younger participants can learn about monetary-related matters and that this learning is related to enhanced budgetary administration information, money-related mentalities and monetary conduct, and if the participants have sustainability practices, this will result in better monetary ability in the future (Agnew & Harrison, 2015; Batty, Collins, & Odders-White, 2015; Zakaria & Sabri, 2013). For instance, a research study carried in the United States by Batty, Collins and Odders-White (2015) shows that educational programmes targeted at primary school participants result in knowledge gains in the participants. Participants presented with money-related instruction or finance-related educational programmes make more prudent financial decisions (Batty et al., 2015).

Meanwhile, social security has become less generous and individuals have become more responsible for their financial security before and after retirement. As a result, attention has turned to improving financial literacy among children in order to shape better financial practices from a young age (Bruhn, Leao, Legovini, Marchetti, & Zia, 2013). According to Schors, Madern, Alessie and Werf (2016), financial literacy plays a vital role in educating children in the skills necessary to manage money in daily life. For instance, in the Netherlands, financial education programmes have been implemented targeting primary school children aged 10 to 12 years in order to improve their financial literacy (Schors, Madern, Alessie, & Werf, 2016). A basic knowledge of financial concepts and the ability to apply numeracy skills in a financial context ensures that children can act autonomously to manage their financial matters and react to news and events that may have implications for their financial well-being (Hira, 1997; Holden et al., 2009).

One study provides a deeper investigation of the gender groups and discloses that females are less financially knowledgeable than males (Farrell, Fry, & Risse, 2016; Theodos, Kalish, Mckernan, & Ratcliffe, 2014). There is additionally some proof that females are more likely than males to be involved in harmful or less-advantageous money behaviours (Montford & Goldsmith, 2016). For example, women are less willing than men to take financial risks and have more credit cards than men, though women are more likely to pay their credit cards in full every month (Theodos et al., 2014). As these negative financial practices can in turn influence their financial health and well-being, early education targeted at both male and female elementary schoolchildren is important in order to curbe this phenomenon and strengthen their positive financial practices (Batty et al., 2015).

Finally, financial literacy and the educational programmes can benefit children as well as parents. Parents themselves feel unqualified to manage their own finances, thus financial literacy programmes could become a venue for dual generational

learning as participants discuss lessons with their parents (Kim & Chatterjee, 2013b). However, comprehensive strategies for educating children and youth about personal finance have not yet emerged and are less effective in low and medium countries (Kaiser & Menkhoff, 2016). Hence, it becomes even more crucial to offer financial education and increase training intensity in Malaysia and as such, this research aims to educate children in money and money management to increase their financial literacy.

Learning through Games

Board games can create an engaging atmosphere, are competitive and help the growth of skill and knowledge of people in all age groups (Treher, 2011). Papastergiou (2009) similarly found that participants in game-based learning learn more actively and with higher interest. This indicates that when participants are involved directly in an activity, the tendency to learn and practise is higher. Likewise, Sujiono (2011) stated that games can enable children to explore, discover, express their feelings and learn with pleasure. This is supported by Roussou (2004) who stated that participants in an activity construct their own knowledge by testing ideas and concepts based on prior knowledge and experience, applying them to a new situation, and integrating the new knowledge with pre-existing intellectual constructs.

In previous studies, crossword puzzles were used as the instrument to improve the numeracy ability of children. The findings show that the children that use the Crossword Puzzle Game to improve numeracy development get a “higher” mean score than the control group that do not use it (Rakimahwati, 2014). The findings also show that participants engage actively in the crossword puzzle game and are able to mention numbers, search for numbers and then arrange those numbers on the board of the crossword puzzle game in accordance with the existing image clues. It is thus clear that games have the ability to strengthen the learning process of children. Moreover, the reason for introducing learning through games is because children often feel bored as conventional learning methods are less attractive, and therefore, the children become lazy to learn (Rakimahwati, 2014).

Tsai, Yu and Hsiao (2012), found that participants’ motivation, learning capability, and skill of playing games have impacts on the level of their knowledge acquisition. This finding is similar to Owston, Wideman, Ronda and Brown (2009) who found that participants who learn via a game development exhibit better performance than those who do not play games. The results of another research conducted in 2014 to test the effect of game-based learning on mathematical confidence and performance among low ability and high ability participants indicates that participants in both groups gain significant improvements in their performance. However, the participants in the digital game-based setting gain more improvement than their peers in the paper-based setting (Ku, Chen, Wu, Lao, & Chan, 2014). This indicates that game-based learning can improve participants’ knowledge and attitude towards learning.

Nevertheless, there is a large and growing body of literature revealing that gaining financial knowledge through games generates a high improvement in money management practices among the children due to the strong correlation between financial literacy and financial behaviour (Fernandes, Lynch, & Netemeyer, 2014).

According to Umass Donahue Institute (2014), educational programmes focussing on children acquiring financial knowledge through games significantly improve participants' financial behaviour and attitudes. The educational programme in this study was aimed at equipping schoolchildren with the knowledge and skills necessary to become self-supporting and make critical decisions regarding personal finances. Based on the research findings, 67 per cent of the teacher respondents reported that they observed a moderate to strong improvement regarding their participants' level of financial decision making. And only 6 per cent of the teacher respondents reported that there had been no improvement in financial decision making among the participants. Financial literacy directly influences a person's financial attitude and behaviour. Participants with higher levels of financial literacy tend to practise what they learned (Danes, Rodriguez, & Brewton, 2013; Umass Donahue Institute, 2014). For instance, research findings show that financially literate participants brought information regarding finance knowledge learned in class back home and discussed their family's refinancing options with their parents (Umass Donahue Institute, 2014).

In short, findings of the research stated above are in line with the objective of this current research. Educational programmes that involve learning through games, either board games and/or crossword puzzle games have been proven to be effective. In view of this, this researcher developed an interactive half-day workshop using games and targeting primary school children, which focuses on topics that are closely related to the enhancement of financial knowledge and financial skills necessary in daily life.

Financial Education Programmes

A study conducted in the 1960s indicates that participants who participated in an economics curriculum learned economic concepts and performed significantly better on economics tests than participants who did not participate in such a curriculum (Larkins and Shaver 1969; Senesh 1964). Similarly, a pre-post study done with over 300 children participating in the *Money Savvy Participants* programme also showed positive results. Each child received a piggy bank with four slots (for saving, spending, investing, and donating) and eight financial lessons. Analysis of pre- and post-tests reveals statistically significant improvements in knowledge and attitudes (Schug and Hagedorn 2005). Likewise, Fox and Bartholomae (2008) state that children appear to gain financial knowledge and confidence after they participate in classroom-based financial education curricula, positively affecting their financial decisions.

The financial situation of today's youth is characterized increasingly by high levels of debt. These debts are of particular concern given recent evidence that young people may lack sufficient knowledge to successfully navigate their financial decisions. Enhancing budgetary administration abilities is critical and as this is a cumulative and lifelong process, is particularly successful when essential comprehension is acquired at an early age. Accordingly, Bank Negara Malaysia (Central Bank of Malaysia) took the initiative and collaborated with the Ministry of Education (MoE) in promoting financial education to schoolchildren with the implementation of the School Adoption Programme (SAP) in 1997 and the Students Financial Clubs (SFCs) in 1999. The financial institutions that participate in the SAP programme have helped in effectively facilitating instructors in planning and carrying out financial education activities for the

enhancement and acquisition of financial management skills in the young in Government supported schools.

Furthermore, in line with Bank Negara Malaysia's initiative, Alliance Bank organised the Money & Math Challenge (MMC) in April 2012. MMC was aimed at inculcating good money habits in the young. The MMC complements the Alliance Buddy, an account with unique features that encourages children to develop the savings habit. In addition, in 2013, Alliance Bank conducted a money-related proficiency programme known as the Alliance Bank Participants Financial Literacy Workshop. The programme was an engaging hour-long workshop for schoolchildren and was held at selected Alliance Bank offices. The bank also encourages their staff to inculcate money saving habits in their children.

In April 2017, Bank Negara Malaysia launched a Financial Management for Retirement Module, "Forming the Future Starts Now". The objective of this is to improve the ability of Malaysians to manage money well throughout their entire life cycle and to improve their ability to deal with difficult times. According to the findings of Bank Negara Malaysia's Financial Capability and Inclusion Demand Side Survey conducted in 2015, a significant number of Malaysians have insufficient information on money-related issues to empower them to make educated budgetary choices. The findings also reveal that over 75% of Malaysians find it hard to raise even RM1000 in times of crisis. Many Malaysians will thus face monetary problems if they become unemployed. In view of this, the need to educate Malaysians on financial management and to raise their financial literacy is critical to ensure a secure financial future.

Methodology

Sample

This research used purposive sampling method for four groups of participants taking part in the *Bijak Wang* programme. The selected participants comprised primary schoolchildren in Standard 4 to Standard 6 (10-12 years old) from four different geographical areas. Participants in group 1 (Majlis Kebajikan & Pembangunan Masyarakat Kebangsaan Malaysia or MAKPEM) were from four different schools in Kuala Lumpur; Group 2 (Floria) consisted of students from four different schools in Putrajaya; participants who formed Group 3 (UMT) came from Sekolah Kebangsaan Kuala Berang; and Group 4 (Redang) comprised students from Sekolah Kebangsaan Pulau Redang. As this current research was an exploratory type of study, there were few or no earlier similar studies to refer to. This half-day interactive workshop on money and money management targeting mainly 10 to 12 year-old participants was a relatively new education programme in Malaysia. Therefore, this exploratory type of current research focusses on gaining insights and familiarity with basic details, settings and concerns, a well-grounded picture of the situation being developed, the generation of new ideas and assumptions, and the development of tentative hypothesis (Piaw, 2012). Lastly, the current research provides a direction for future research and the development of teaching and learning techniques.

Instrument and Measurement

Smart Money Kit: Bright Kids Smart Money

This research aims at examining and evaluating the impact of the *Bijak Wang* programme on the financial knowledge of children. The instrument used for this was the Smart Money Kit: Bright Kids Smart Money used in the programme. This is the first financial educational kit developed by researchers in Malaysia, suitable for the development stages of children aged six to 12 years. This kit adapts the methodology of 'learning through play' and the activities are recreational in nature. The kit comprises 10 interactive and fun activities covering six important basic units of financial knowledge and is designed to meet the needs of children according to age and developmental stage. The kit comes with a guide book which explains the objectives of the activities and graphical instructions. The six basic units of finance instilled in this game are getting to know money, the purpose of money, needs vs. wants, savings, expenditure and budget and basic concepts of Islamic banking. The kit comprises conservative board games that help to sharpen children's soft skills such as communication, strategy planning and critical thinking skills. It also aims to foster bonding and mutual understanding between users and players. Out of the 10 activities in the kit, only selected activities were used in the programme.

Bijak Wang Programme

The half-day *Bijak Wang* programme is an initiative to raise awareness in the public, especially among parents and educators of instilling prudent money management in young children. This initiative is in keeping with Bank Negara Malaysia's strategy to raise the financial literacy of Malaysians. The financial education programme targets mainly young children aged from 6 to 12 years with the objective of educating them on the importance of money and money management in their lives.

The first workshop which was a four-hour interactive programme was conducted with the MAKPEM group consisting of 28 children from selected schools from Kuala Lumpur. The participants who were nominated by their schools were involved in four games from the Smart Money Kit: Bright Kids Smart Money, which are "*Profesor Bijak Wang*" and "*Ekspedisi ABCD*" which are board games; "*Cuba Ingat dan Teka*" which is a flash card game; and "*Reka Tabung ABCD*". These four games cover five topics of financial management which are "Getting to Know Money", "The Purpose of Money", "Needs vs. Wants", "Savings-Expenses" and "Budgeting".

The second programme, which was also a four-hour interactive programme, was participated by a group of 41 children (Floria) from selected schools in Putrajaya and who were also nominated by their schools to participate in the programme. The participants were involved in three games: "*Profesor Bijak Wang*" and "*Ekspedisi ABCD*" which are both board games, and a game using flash cards.

The third workshop (Redang) was organised with 30 students from SK Pulau Redang. These participants were exposed to three games: "*Profesor Bijak Wang*" and "*Ekspedisi ABCD*", both board games; and the innovative "*Reka Tabung ABCD*" which requires them to build their own moneybox with recycled items.

The fourth workshop (UMT) was conducted with 41 students from SK Kuala Besut, Terengganu. This programme focused on two games, '*Profesor Bijak Wang*'

and '*Ekspedisi ABCD*'. All four workshops aimed at equipping the children with financial knowledge and inculcating prudent financial behaviour.

Data Collection and Analyses

Self-administrated questionnaires consisting of financial knowledge items were distributed to the 140 participants before the programmes began to test participants on their existing financial knowledge. The questions asked consisted of participants' profile, family background and financial literacy and included 20 items measuring financial knowledge covering the basic concepts of money and money management. The questionnaires were adapted from Sherraden, Johnson, Guo & Elliot (2009) requiring true or false responses.

After completing the programme, the participants were required to each complete a post-test questionnaire which contained the same questions on financial knowledge. This was to evaluate the learning that had occurred after the programme.

Paired sample t-test was conducted to measure the financial literacy of the participants before and after the programme. Each participant was given a unique ID Number to keep track of their pre and post results. The pre and post-tests were held for ten minutes.

Results and Discussion

Profile of Participants

The ages of the 140 participants in the four programmes conducted ranged from 8-12 years. The majority of the participants were Malay (82.3%) and more than two-thirds were aged 12 years. Females comprised 61.9% (85) of the participants and only 50 (38.1%) were males. More than half (52.4%) of the participants reported that their fathers' monthly income was between RM3,000.00 and RM4,000.00 and 48.4% stated their mother's monthly income was between RM2,000.00 to RM3,000.00. A large percentage (65.5%) stated their fathers had at least tertiary education while a majority (72.5%) of the participants' mothers had secondary level education.

Programme 1: MAKPEM

The findings of the workshop conducted with the MAKPEM group show improvements in the participants' financial knowledge and understanding. Analysis of the data revealed that the participants gained some understanding regarding time period in achieving financial goals. 71.4% of the participants answered 'No' to the statement "No period of time is necessary to achieve financial goals" in the post-test. In the pre-test, only 35.7% of them gave the right answer. This indicates that the participants acquired an understanding of the concept of long-term and short-term goals in financial planning. Long-term goals are those that require more than five years to achieve as they involve a large amount of investment or savings. Before the programme, only 11.1% of the participants understood this concept, but the percentage increased to 39.3% (an increase of 28.2%) after they had participated in the programme.

Participants also demonstrated improvement in their knowledge of wants and needs. The percentage of participants who answered correct for the statement

“Needs are the same for everyone” rose 14.3% from 21.4% to 32.1%. As for the statement “Humans have various needs in life and all can’t be fulfilled at once”, 21.4% of the participants showed an understanding of this concept at the end of the programme. This was a 6% increase over the 14.8% before the gameplay, indicating an improvement. This indicates that the participants had understood that needs are varied and specific time is needed to attain them. Further, results of the pre-test showed that before the programme, only 39.9% of the participants understood that not all investments will result in profit. However, after the gameplay, half (50% or an increase of 10.7%) of the participants understood that not all investment will result in profit. This knowledge will enable the children to manage risk in investment and be aware of what are they investing in the future.

Credit card use stimulates spending, and, when compared to cash, credit cards lead to greater imprudence (Roberts & Jones, 2001). Before participating in the programme, 28.6% of the children comprehended that not everyone can own a credit card. The results of the post-test showed an increase of 14.3% to 42.9% who understood that not everyone can obtain a credit card. Only persons who have a stable source of income and are able to make the payments can get a credit card. These are the requirements of credit card issuers.

Table 1: MAKPEM Participants’ Financial Literacy Score (n=28)

Statement	Correct Answer	
	Pre	Post
The Ringgit is the currency of Malaysia	100.0	100.0
Money is not a limited resource	60.7	71.4
No period of time is necessary to achieve financial goals	35.7	71.4
Buying a story book is an example of achieving a long-term goal	46.4	57.1
A long-term goal is for owning something which is not too expensive and is affordable	11.1	39.3
When we borrow money, we do not have to repay the money	92.9	96.4
Needs are not the same for everyone	21.4	32.1
Owning an iPad is a need	75.0	89.3
Humans have various needs in life and all can’t be fulfilled at once	14.8	21.4
Our pocket money can be a source of saving	92.6	96.4
Every investment results in profit	39.3	50.0
Our house is the safest place to keep our money	89.3	92.9
Expenses should exceed income	75.0	82.1
A person can spend more than their income	75.0	82.1

Statement	Correct Answer	
	Pre	Post
A budget is a method to control expenses	96.4	100.0
In Malaysia, we have an Islamic banking system	64.3	78.6
Everyone can own a credit card	28.6	42.9
Buying cheap and low quality products are ways to save money	32.1	42.9
We need to be silent if we are cheated by traders	92.9	100.0
Comparing prices is one of the ways to save money	92.9	96.4

Paired t-test was conducted to measure whether there was a significant difference in financial literacy scores before and after the children engaged in the game play. The results revealed that there was a significant difference in the pre-test scores ($M=7.2$, $SD=1.18$) and the post-test scores ($M=10.4$, $SD=1.93$); $t(27)=-.305$, $p = 0.035$. The participants in the MAKPEM group exhibited a higher level of financial literacy after they had participated in the *Bijak Wang* programme. Participants' learning was facilitated with the use of the Smart Money Kit: Bright Kids Smart Money. They learnt effectively through playing games related to financial knowledge and soft skills (communication, strategy planning and critical thinking). Participants learn more actively and with greater interest when they are involved directly in financial literacy related games and activities. This is in line with the study by Ku, Chen, Wu Lao, Chan (2014) that reported that learning through games is beneficial to participants with various abilities and that games-based education is an approach which yields better outcomes than the paper-based setting in both participants' confidence and performance (Ku et al., 2014).

Programme 2: Floria

The FLORIA group that took part in the programme held in Putrajaya also exhibited some improvement in their financial literacy at the end of the workshop. The greatest improvement was seen in their understanding of saving. The participants were asked if buying cheap and low quality products are ways to save money. 43.6% of them gave the correct response in the pre-test but after having participated in the gameplay, 67.6% of them gave the correct answer which is "No". One can save money by buying cheap and low quality products but they may be harmful and are not durable and may incur additional expense if we have to buy products to replace them. As for the statement "Comparing prices is one of the ways to save money", 79.5% provided the correct answer during the post-test. This was an improvement of 11.9% as the figure for the pre-test was 67.6%. This revealed that the participants realized that comparing prices is a strategy in saving money. In addition to that, after the programme, the participants understood that pocket money is a source of saving as the score was 81.8% at the beginning and rose by 13.2% to 95% in the post-test. Children develop their habits and attitudes about money from their parents. Pocket money is a good

way to educate children on the value of money and help them gain knowledge regarding saving, spending and donating.

The children also enhanced their understanding of the Islamic banking system which is a viable alternative to the conventional banking system and has become favoured by Muslims and non-Muslims alike. In addition, Islamic banking has contributed to the country's economic development and the nation building process. 42.4% of the participants were aware of the existence of Islamic banking in Malaysia before they participated in the programme. The results of the post-test revealed the figure rose by 16.6% to 59%. However, it was interesting that before the programme, 97.1% of the children knew that the Ringgit is the currency of Malaysia. The gameplay succeeded in making all 100% of the students (an increase of 2.9%) aware of the Malaysian currency.

Further, the programme instilled in the children an understanding of long-term goals and needs as opposed to wants. For the statement "A long-term goal is for owning something which is not too expensive and is affordable", 38.5% participants answered correctly during the pre-test. The number rose by 14.4% during the post-test with 52.9% of the participants answering correctly during the post-test. Similarly, the children exhibited acquisition of the knowledge that "Needs are not the same for everyone". The post-test results showed a rise in the number of correct responses, from 16.7% for the pre-test to 32.4% for the post-test, a hike of 15.5%, indicating that the participants had understood that people's needs are different. Furthermore, 24.2% of the participants realized that humans have various needs in life and that all can't be fulfilled at once. Before the programme, only 15.8% of the participants knew this. The number rose by 8.4% to 24.2 % after the participants took part in the gameplay. The knowledge gained will empower the participants to choose what they need and not be influenced by advertisers who try to appeal to consumers in such a way that the consumers feel they need certain goods or services when in fact they only want them.

Table 2: Floria Participants' Financial Literacy Score (n=41)

Statement	Correct Answer	
	Pre	Post
The Ringgit is the currency of Malaysia	97.1	100.0
Money is not a limited resource	82.4	87.8
No period of time is necessary to achieve financial goals	67.6	78.0
Buying a story book is an example of achieving a long- term goal	26.5	30.0
A long-term goal is for owning something which is not too expensive and is affordable	38.5	52.9
When we borrow money we do not have to repay the money	84.8	88.2
Needs are not the same for everyone	16.7	32.4
Owning an iPad is a need	75.8	78.6
Humans have various needs in life and all can't be fulfilled at once	15.8	24.2

Statement	Correct Answer	
	Pre	Post
Our pocket money can be a source of saving	81.8	95.0
Every investment results in profit	35.0	42.4
Our house is the safest place to keep our money	70.6	85.0
Expenses should exceed income	67.6	77.5
A person can spend more than their income	74.4	79.4
A budget is a method to control expenses	82.1	84.4
In Malaysia, we have an Islamic banking system	42.4	59.0
Everyone can own a credit card	46.2	58.8
Buying cheap and low quality products are ways to save money	43.6	67.6
We need to be silent if we are cheated by traders	89.7	91.2
Comparing prices is one of the ways to save money	67.6	79.5

The results of the significant difference in financial literacy between before and after the Floria group participated in the *Bijak Wang* programme were analysed using the paired t-test. The findings demonstrate that there was a significant difference in the scores for pre-test ($M=8.3$, $SD=1.66$) and post-test ($M=11.2$, $SD=1.82$); $t(40)=-.764$, $p = 0.031$. The participants in this group exhibited an increased financial literacy score after participation in this educational programme. The interactive and fun activities used in the programme helped them in gaining knowledge in the basic financial management concepts and in developing prudent financial practices for now and later in their lives. This finding is supported by previous research that states that consumers have good financial practices only if they possess financial knowledge (Atakora, 2013). Therefore, the methodology used in the *Bijak Wang* programme is beneficial in educating children to develop prudent financial management.

Programme 3: Redang

The third of the *Bijak Wang* programmes was conducted with the students of SK Pulau Redang who also showed improvement in terms of their financial knowledge. The findings show that before participating in gameplay during the programme, only 48.3% of them were aware of the existence of an Islamic banking system in Malaysia. The percentage shot up to 80.0% after the gameplay. The percentage of participants who gave the correct response to the statement "Humans have various needs in life and all can't be fulfilled at once" also increased at the end of the programme. The increase from 83.3% to 96.6% revealed that the participants had understood that every financial goal needs a duration for their achievement and that these needs cannot be immediately fulfilled. Another notable increase was in the percentage of participants who had understood that a budget is a method to control expenses. For the pre-test, 64.3% of them responded correctly to the statement and the percentage rose to 76.7% in the post test. This knowledge is valuable as a budget helps us identify wasteful expenditures, adapt quickly when our financial situation changes, and achieve financial goals. As for knowing that not everyone can own a credit card, the percentage increased from 23.3% to 35.7%. This indicates that the participants had

learnt that certain criteria had to be met for credit card ownership, such as age, financial commitments, adequate salary and a good credit report. Furthermore, the findings show that more participants had gained an understanding of long-term goals. Post-test results show that during the post-test, 53.3% of the participants gave a “No” response to the statement “A long-term goal is for owning something which is not too expensive and is affordable” as compared to 43.3% during the pre-test. This indicates that the participants had understood that long-term goals need more time to achieve as they are usually for expensive things. Similarly, participants learnt that not everyone has the same need. The post-test results revealed an increase (34.6%) from 23.1% during the pre-test. Just like for the first two groups, the programme also successfully facilitated this group in gaining knowledge regarding financial concepts and management. With this knowledge, the participants have become more financially literate and will be practise more prudent financial behaviour in the future.

Table 3: SK Pulau Redang Participants’ Financial Literacy Score (n=30)

Statement	Correct Answer	
	Pre	Post
The Ringgit is the currency of Malaysia	100.0	100.0
Money is not a limited resource	63.3	65.5
No period of time is necessary to achieve financial goals	63.3	72.1
Buying a story book is an example of long term goals	36.7	37.9
A long-term goal is for owning something which is not too expensive and is affordable	41.4	53.3
When we borrow money we do not have to repay the money	93.3	96.3
Needs are not the same for everyone	23.1	34.6
Owning an iPad is a need	63.3	70.0
Humans have various needs in life and they can’t all be fulfilled at once	83.3	96.6
Our pocket money can be a source of saving	96.7	98.7
Every investment results in profit	43.3	55.2
Our house is the safest place to keep our money	90.0	93.3
Expenses should exceed income	57.1	60.0
A person can spend more than their income	44.8	56.7
A budget is a method to control expenses	64.3	76.7
In Malaysia, we have an Islamic banking system	48.3	80.0
Everyone can own a credit card	23.3	35.7
Buying cheap and low quality products are ways to save money	86.2	93.1

Statement	Correct Answer	
	Pre	Post
We need to be silent if we are cheated by traders	89.7	91.2
Comparing prices is one of the ways to save money	80.0	82.8

The standard deviations and level of significant difference in the financial literacy score in this study was measured using the paired t-test analysis method. The research results demonstrate that there is significant difference in the financial literacy score of the SK Pulau Redang group before participation ($M=7.3$, $SD=1.48$) and after participation ($M=10.7$, $SD=1.92$) with $t(29)=-.754$, $p = 0.045$. The participants showed great improvement in their level of financial literacy after participating in the *Bijak Wang* programme. This was mainly due to learning through playing the games which made learning more fun and actively engaged the participants in the process. This finding is in concord with that of Kirkalan & O' Riordan (2008), who found that involvement of participants in games lighten the mood, facilitate greater creativity and boost student morale, resulting in greater student engagement in the learning process and improved performance. The findings show that the *Bijak Wang* programme achieved its objective of raising the financial literacy of the children.

Program 4: UMT

The fourth programme was held with 41 students from SK Kuala Besut who were aged 10-12 years. Analysis of the pre- and post-tests reveal some improvement in the students' learning. The findings show that 61.4 % of the participants answered correctly to the statement "Money is not a limited resource", a 10.2% increase as compared to the post-test. Further, 80.5% of them answered correctly to the statement concerning a budget being a method to control expenses in the pre-test but the percentage rose to 90.5% (an increase of 10.0%) in the post-test. This indicated that they had gained the understanding of a budget as an effective tool to control personal cash flow and that failure to make a budget can lead to personal finance crises. As for investment, the participants revealed awareness that not every investment results in profit. The post-test recorded 42.4% who responded correctly in contrast to the pre-test which recorded only 32.5%. This shows more of them had learnt that investment carries risks although it can give a high return. They also understood that an investment may result in a profit or a loss depending on the economic circumstances. Another change was seen in the percentage of students realizing that expenses should not exceed income as the figure rose from 73.2% for the pre-test to 82.1% for the post-test. However, the number of the participants who had learnt that the home is not the safest place for keeping one's savings rose only slightly. 89.1% of them answered correctly to the statement on this in the post-test compared to 80.5 during the pre-test. Similarly, not many of them learnt that pocket money can be a source of saving for them as while 82.9% showed they understood this during the pre-test, the figure increase marginally to 90.4% during the post test.

Table 4: SK Kuala Besut Participants' Financial Literacy Score (n=41)

Statement	Correct Answer	
	Pre	Post
The Ringgit is the currency of Malaysia	100.0	100.0
Money is not a limited resource	51.2	61.4
No period of time is necessary to achieve financial goals	61.5	67.4
Buying a story book is an example of achieving a long-term goal	55.0	57.1
A long- term goal is for owning something which is not too expensive and is affordable	46.2	48.2
When we borrow money we do not have to repay the money	92.7	96.4
Needs are not the same for everyone	11.1	22.1
Owning an iPad is a need	69.2	75.3
Humans have various needs in life and all can't be fulfilled at once	75.6	78.8
Our pocket money can be a source of saving	82.9	90.4
Every investment results in profit	32.5	42.4
Our house is the safest place to keep our money	80.5	89.1
Expenses should exceed income	73.2	82.1
A person can spend more than their income	56.1	62.4
A budget is a method to control expenses	80.5	90.5
In Malaysia, we have an Islamic banking system	65.9	72.6
Everyone can own a credit card	17.1	18.6
Buying cheap and low quality products are way to save money	56.1	60.2
We need to be silent if we are cheated by traders	85.4	85.4
Comparing prices is one of the ways to save money	87.8	92.5

The paired t-test was applied in order to test whether there is significant difference between the pre-test and post-test financial knowledge score. The research result shows that there was no significant difference in the scores of the participants from SK Kuala Besut before participation in the programme (M=9.2, SD=1.83) and after participation in the programme (M=9.4, SD=1.92); $t(40)=1.16$, $p = 0.763$. Learning through games proved to be not particularly effective in improving the financial literacy and financial behaviour of participants in the SK Kuala Besut group. This was a clear contradiction to the results of the other three groups for whom engaging actively in game play resulted in greater learning taking place. Future researchers may examine

the potential factors which might have resulted in the weak performance of be the SK Kuala Besut group.

Conclusion and Recommendation

The purpose of the *Bijak Wang* programme to raise the children's financial knowledge and literacy was achieved. The children had low scores in money-related knowledge before participating in the programme; however, their scores improved after participating in the game play during the workshop. The *Bijak Wang* programme exposed participants to various financial-related aspects such as getting to know money, financial goals, needs vs. wants, saving, expenditure and budgeting, all of which are very essential in the financial decision making process. The participants were actively involved during all the games played in the programme and a great majority underwent a positive transformation in their financial literacy. This clearly shows that active participation in the learning process promotes greater understanding, and as also as according to several experts in the field. Children enjoy learning very much while engaging in games during the process and the *Bijak Wang* programme has proved the positive outcome of helping children to acquire finance-related knowledge through interactive games. The programme showed clearly that financial education programmes that utilize games help motivate children to learn, and thus increase their knowledge and skills, leading to improved financial behaviour.

The results of this study show improvement in participants' financial literacy after they participated in this programme. The findings also reveal that the majority of the participants in all the four groups had increased their financial literacy and understanding of finance-related matters and were clearer about financial goals, both long-term and short-term. The participants in the MAKPEM group exhibited the greatest acquisition of understanding of long-term financial goals, with scores of 10.7% in the pre-test to 28.2% in the post-test. As for the students in the other groups, the increase was about 2% to 14.4%. This shows those in the MAKPEM group will be better at managing their finances for long-term and for short-term goals. Although there was an increased understanding of needs as opposed to wants, the correct response rate for the four groups of participants was low at less than 50%. Only 22% of the students of SK Kuala Besut and 30% of the students in the MAKPEM, Floria and SK Pulau Redang groups showed they had understood the meaning of "needs". This reveals that participants have the tendency to excessive spending to fulfil both their needs and their wants without knowing the difference. It is hoped that educators will focus on this aspect and increase participants' understanding. In addition, the findings reveal that only the MAKPEM and SK Pulau Redang groups reported more than 50% of them having gained more knowledge about investment after participating in the *Bijak Wang* programme. This is in contrast to less than 50% of the students in the Floria and SK Kuala Besut groups who gained more understanding about investment. Participants in the Floria and SK Kuala Besut groups thus revealed lower financial literacy in this aspect. Furthermore, most of the participants (81.4%) from SK Kuala Besut did not gain knowledge concerning credit card ownership. According to Malaysia Insolvency Department (2017), most bankruptcy cases are mainly due to failure to settle credit loans and credit card debts. As such, it is important to provide financial education to children and raise their financial literacy to inculcate financial

skills. The resultant financial management skills will help children to make good financial decisions throughout their life, and to become confident, prudent and informed consumers.

Overall, all the participants in the MAKPEM, Floria and SK Pulau Redang groups demonstrated greater learning and financial literacy as compared to those in the SK Kuala Besut group who showed marginal learning and improvement after participating in the *Bijak Wang* programme. In addition, on the whole, the findings of this study reveal that children learn much more through financial literacy games. This is shown by the programme's use of the Smart Money Kit: Bright Kids Smart Money in the teaching process, which proved to be an effective learning tool for the children. This is shown in the overall higher financial literacy score of the participants after they had completed the *Bijak Wang* programme.

Parents and teachers both have the responsibility to deliver financial education to their children. While parents are charged with instilling positive attitudes and basic values, it is the role of teachers to teach the subject matter and relevant skills. The process of learning has been transformed from conventional learning to creative, innovative and interactive learning styles. The *Bijak Wang* programme that uses the Smart Money Kit: Bright Kids Smart Money in the teaching-learning process has clearly proved to be an effective learning tool with the capacity to aid in the acquisition of money management knowledge and skills, and financial literacy. The programme will enhance children's knowledge and confidence in their ability to make prudent financial decisions in future.

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