

How the Use of Music and Movement Impacts the Learning of Reading Skills by Preschoolers

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Abstract

The preschool years are considered the 'prime time' for children to develop physically, socially, cognitively, and linguistically. The most critical issue in current education is the poor development of reading skills among children. Research indicates that integrating music into children's daily activities promotes literacy development, particularly with English language learners. Unfortunately, music is not emphasised in Malaysian government preschools, as music teachers lack the appropriate knowledge and teaching skills. The purpose of this study was to assess the effect of music and movement on the reading skills of 40 five-year-old preschoolers at a university preschool. This study sought to evaluate three reading skills or subtests — Print Knowledge, Definitional Vocabulary, and Phonological Awareness. The intervention comprised musical activities that included songs or singing nursery rhymes with body movements. This quasi-experimental design utilised the Test of Preschool Early Literacy which measures early literacy skills for preschoolers. The results showed that music and movement activities impacted preschoolers in their overall reading skills ($p = .02$), print knowledge ($p = .005$), and definitional vocabulary ($p = .03$) after the intervention, but did not impact on their phonological awareness skills ($p = .18$). These findings confirmed that music and movement enhanced literacy skills for a duration of six weeks. Many opportunities should be included for children so that they can be thoroughly engaged in music and literacy activities. Teachers should be equipped with sufficient skills and knowledge and also implement a high-quality music programme to develop effective reading skills.

Keywords *print knowledge, definitional vocabulary, phonological awareness, literacy, preschool*

In the Malaysian education system, preschools follow the national private education curriculum, which requires children to form basic skills in preparation for primary school. According to the Ministry of Education (2004), the basic skills include socialisation and personality development that teaches communication, social skills, and the 'three Rs' (reading, writing, and arithmetic). It is an excellent time, or the 'prime time', for children at this level to develop physical, social, cognitive, and communication domains as well as language skills. According to the Malaysian Education Act (1996), preschool education is a programme for children four to six years of age. Under the national preschool curriculum, the subject Music is part of

the creative and aesthetic component (Chan & Kwan, 2010). Two of the four objectives of the components allow students to appreciate nature's beauty through creative performance and express motion creatively. To achieve these objectives in the music area, three main contents and groupings were identified: (a) music enjoyment—listening, sound exploration, and instrument activities; (b) singing—listening and song; and (c) creative movement. Chan and Kwan explained that although each objective has sub-items detailing the activities, the grouping of the activities still lacks clarity because a number of items do not reflect the specific activities.

Chan and Kwan (2010) also found that government preschools did not emphasise music activities. The majority of the respondents only devoted 10 to 20 minutes daily to music activities. Only 12.5% of teachers practiced music and movement daily. A more positive finding related to personal and social development, where most respondents agreed that music is useful in enhancing human skills such as creativity (100.0%), language (98.0%), and social skills (96.6%).

Music can transform a classroom into a positive learning environment where children can succeed academically, socially, and emotionally. In addition, integrating music into children's daily activities promotes literacy development, particularly with English language learners (Ahmad, Ghazali, Abdullah, & Ali, 2004; Paquette & Rieg, 2008). Therefore, it is important that the Malaysian preschool curriculum emphasises music instruction because it has been shown to enhance the learning power of young children. In Malaysian government preschools, music and movement are not being emphasised as much as any other subject. Chan and Kwan (2010) mentioned there is a lack of appreciation of music and music education, as well as a low perception from the Malaysian public. The main reason behind these issues is that music is not taught by specialists or music graduates in Malaysia. Chan and Kwan also state that teachers in government preschools conduct music activities using audiovisual equipment such as CDs, cassettes, video, television, and un-tuned percussion instruments. A teacher's ability or skill is often questioned in the academic world. In his research in Malaysian educational context, Mah, Chan, Ang, and Bahaman (2003) found that more than 50% of his respondents, who were teacher trainees, lacked any formal education before their entry into the programme (Chan & Kwan, 2010). The authors revealed that teaching competency is one of the main deficiencies in the curriculum implementation outside of the lack of teaching resources. This insufficiency also appeared in other core subjects, indicated by English. Tahar, Toran, Mohd, and Bari (2010) who highlighted that the Malaysian education system faced the issue of reading incompetency among students. One of the main causes is that many teachers lack the ability or skills to teach children how to read or provide a high-quality education (Ali, Aziz, & Majzub, 2011). They found that many teachers could not identify or implement effective teaching and learning strategies to enhance students' reading skills. Unfortunately, the activity-based strategies were ignored when the teachers began to depend completely on books instead of using them as a foundation. As a result, learning became dull and children began to lose interest in developing their language skills.

LITERATURE REVIEW

Theoretical Framework

There are many approaches to promoting the development of knowledge and skills in children through music and movement. This study was based on sociocultural theory and the Zone of Proximal Development (ZPD) developed by a Russian lawyer, Lev Vygotsky (1896-1934). His fascination with psychology and how children solve problems has influenced early childhood education. Vygotsky believed that culture has a great effect on a child's development (Greata, 2006). Vygotsky believed that how children think and their actions are accomplished through their interactions with adults and older children. There are four basic principles underlying the Vygotskian framework: (a) children construct their knowledge of the world; (b) development occurs within a social context; (c) learning can lead to development; and (d) language is important for cognitive development (Greata, 2006; Smidt, 2009).

Preschool

Parents and educators of young children play important roles in their social, emotional, cognitive, and physical development. As children enter formal schooling, teachers begin to play an important role in children's development (Lynch, 2010). Guillen and Bermejo (2011) state that English has become the additional language in many countries around the world. For this reason, schools are required to provide effective educational programmes in order to cultivate competent bilingual skills in both the teaching and learning process. Each culture influences the patterns of language of a child where the school environment is capable of enhancing its use (Kirkland & Patterson, 2005). Children from diverse cultures bring diverse language acquisition to the learning processes. As a result, teachers face challenges to meet each individual need of the students and also to distinguish which approaches work best to increase English language development.

In Malaysia, the curriculum stresses that children are required to learn two languages to enhance their communication skills including the native language, Malay, and the second language, English. Ahmad et al. (2004) found that the English language proficiency in Malaysia was still far from satisfactory even after years of exposure to the language. Coppola (2005) explains that children's native language could interrupt their other literacy attainment in their early years. As only a small percentage of students are being exposed to the two languages at birth, most discover them when they enter preschool. In Malaysia, both English and Malay languages use the same alphabets or written symbols knowledge in the native linguistic context.

Teachers are responsible to provide ample practice for children to speak in English by using short poems or nursery rhymes as a start. Young children love nursery rhymes and they can be used as an activity that enables them to practice using the language (Ahmad et al., 2004). The research findings of Baleghizadeh and

Dargahi (2010) verified that nursery rhymes were very advantageous to children, mainly to those learning English as a foreign language.

Music, Movements and Literacy

Children should have many and varied musical experiences other than just enjoying music (Pica, 2009). When music becomes part of their lives, they will have a greater motivation to communicate with the world. Feasibly, music provides their very first exposure to the presence and richness of their own culture and also of others of the world. Pica (2009) explained that music is a nonverbal form of communication and is a channel to link the cultural division between people of diverse backgrounds. Music can transform classrooms to enjoyable and positive learning environments in which children prosper emotionally, socially, and academically (Paquette & Rieg, 2008). Denac (2008) also concurred that music education in the preschool should not only enable the child to listen and enjoy music but should help to develop or boost the child's music abilities, skills, and knowledge. By expressing themselves in the music activities, children develop the abilities of general awareness through increasing their attention span, developing motor skills, communicating verbally, and enhancing their social behaviour.

Children's reading styles covers a wide range and, therefore, need a variety of teaching strategies and techniques (Hill-Clarke & Robinson, 2004). It is crucial for teachers to implement new approaches to develop literacy learning opportunities for young children. Application of music is one of the most effective vehicles for enhancing literacy skills for young children. Music is essential in our lives and a fundamental factor of children's play. Their musical involvement expands as they grow and develops through opportunities of for moving, listening, creating, and singing. Salmon (2010) stated, "Music is a language of learning that eventually engages children in talking, reading, drawing, and writing" (p.937). Yahaya (2008) notes that "developing children's musical ability may improve their ability to learn and be successful in other disciplines such as language, mathematics, and science" (p.1). It has been shown that children who are exposed to music and language are prone to be more receptive and alert and more responsive and ready to listen (Cooper, 2010). Hill-Clarke and Robinson (2004) mentioned that when children participate in musical activities such as moving, singing, snapping, and clapping, they reinforce their listening, thinking, and word recognition skills. Guillen and Bermejo (2011) found that learning English through music, movement, and art stimulates the learner's multiple intelligences and increases his or her rich linguistic development.

Other than movement, music also consists of listening, singing, and instrument playing (Salmon, 2010). Singing helps in language and music development. According to Yahaya (2008), "Setting words to music actually helps the brain learn them more quickly and retain them longer" (p.7). One way to improve language skills and increase memory and attention span is to expose children to the sounds and basic structures of reading and singing (Cooper, 2010). Singing and listening to nursery songs, folk songs, and jingles can broaden and develop vocabulary and comprehension skills (Baleghizadeh & Dargahi, 2010;

Edwards, Bayless & Ramsey, 2009; Paquette & Rieg, 2008). Regarding the importance of songs, music, and movement for children, Foley (2006) points out that both music and movement benefit children's brain development, where new words are learned by singing which also expands spatial intelligence through movement and activity. Children's reading skills grow each time they learn a chant or nursery rhyme (Baleghizadeh & Dargahi, 2010; Cooper, 2010; Hill-Clarke & Robinson, 2004). Baleghizadeh and Dargahi (2010) explain that the use of nursery rhymes stimulates the language acquisition of young children. When children sing nursery rhymes, especially in second-language classrooms, they become enthusiastically engaged with the language, where it promotes the usage of that language. When the activities and context captivates the children's interest, they will eventually become more connected with the language. When children listen to nursery rhymes repeatedly, the frequent repetition allows certain language items to be developed while others are explicitly reinforced.

METHODOLOGY

Participants

This study was conducted at one of the government preschools in Malaysia. Forty preschool children from two classes participated in this study. At the time of the study, the school utilised videos and music tapes in teaching music. The respondents were five-year-old preschoolers with a variety of social backgrounds and culture. Children who had visual, auditory, cognitive, and/or speech and language impairments were requested not to participate in the study (Lathroum, 2011). The preschoolers were of mixed gender, male and female, but their ethnicity consisted only of one race, Malay. The children were proficient in the Malay language, which was their mother tongue. In order to complete the assessments, children needed to have at least some conversational skills in English. Due to the small number of preschoolers, the sample for this study consisted of the entire population at the preschool.

Instrument

The instrument that was used in this study was the *Test of Preschool Early Literacy* (TOPEL), which was developed to measure early literacy or reading readiness skills for young children, especially preschool children as most current measures start at kindergarten or first grade. The authors of the test recognised the importance of early identification and observing children's literacy skills before being introduced to formal reading instruction. Lonigan, Wagner, Torgesen and Rashotte (2007) developed this test, which was previously known as the Comprehensive Test of Phonological Processing. These authors believed that oral language, print knowledge, and phonological awareness are important requisites for developing reading skills. According to several reports in Lonigan et al. (2007), the test also appears to identify children who are having reading difficulties and acknowledges

several problems that cause poor reading skills. In detail, the reports focus on improving vocabulary, phonological awareness, and print knowledge skills before children enter school, and on preventing early reading disabilities. The skills in the subtest developed in these areas were guided by investigating previous measures of these skills. The TOPEL's Early Literacy Index (ELI) internal consistency coefficient of .96 across ages (.95 to .96) was good, similar to the score of the Print Knowledge subtest (.95) and Definitional Vocabulary subtest (.94). The Phonological Awareness subtest showed a lower coefficient (.87), which was acceptable. Lonigan et al. (2007) cited studies that indicated the three subtests in TOPEL (Print Knowledge, Definitional Vocabulary, and Phonological Awareness) provided exclusive features of early literacy that are important in predicting future reading skills.

Design

The main purpose of the study was to examine the effects of music and movement on the reading skills of preschoolers. The study utilised a quasi-experimental research design. A quasi-experimental design also involves a pre- and posttest approach. McMillan (2008) describes a model with two groups of subjects (A and B): One group (A) takes the pretest (O1), receives the intervention (X), and then takes the posttest (O2). The other group (B) takes the pretest, receives no intervention, and takes the posttest. In this model, Group B was considered a control group because it did not receive any type of intervention. The researcher allocated intact groups, the experimental and control treatments, and administered a pretest in Week 1 to both groups. Then, experimental intervention activities were conducted with the experimental group only where music and movement were applied to promote reading skills while the control group continued its regular lessons using the same lesson plans. Lastly, a posttest was administered in Week 6 to assess the differences between the two groups.

Data collection

Classes were conducted twice a week depending on the schedule for approximately 6 weeks. Each lesson, for both the experimental and the control groups, was conducted in the preschool classroom and lasted for 40 minutes. In the first week, the researcher conducted a pretest to estimate the reading skills attribute before they received the treatment. On Week 6, a posttest was undertaken to estimate the attributes after the treatment. Both the experimental and control groups were taught by the preschool teachers and the same teaching instructions were applied. Teachers of both groups were given guidelines on the test requirements. All participants were tested individually and simple instructions were given prior to the test to familiarise them with the testing environment. Their performance was tested and evaluated according to the TOPEL assessment.

Data analysis

Appropriate statistical procedures were used to assess the relationship between the dependent and independent variables. Descriptive and inferential statistics were both applied to organize and analyse the data. Common applications using *t* tests include testing the differences between experimental and control groups, the difference between two teaching strategies, and the difference between a pretest and a posttest (paired *t* test) and comparison of both pretest and posttest (independent *t* test).

RESULTS

Following are the results of the experimental group (Apple Lab) and the control group (Orange Lab). There were a total of 40 participants ($n=40$) with 20 in each group. Firstly, descriptive statistics were used to analyse the results, which included percentages depending on the number of students in their respective classes. This was followed by the mean of the standard score that stated the description or rating of the standard score: *very superior* (> 130), *superior* (121-130), *above average* (111-120), *average* (90-110), *below average* (80-89), *poor* (70-79), and *very poor* (< 70). Secondly, two types of *t* test were used to measure the effectiveness of the intervention: samples that are paired or dependent and independent samples. The analysis was grouped into two groups.

Group 1

These results focused on the overall scores of the pre- and posttest of both the experimental and control groups. The English reading skills emphasised three basic components— print knowledge, definitional vocabulary, and phonological awareness. The three subtest results were combined to determine the composite score, which represented each child's literacy skills, called the Early Literacy Index (ELI).

Regarding the overall reading skills, there were enhancements in reading skills for both groups. In terms of the ELI of the results, both group scored from *very poor* (< 70) and *poor* (70-80) to 80 to 89, which described the rating as *below average* after the intervention. According to the TOPEL by Lonigan et al. (2007), individuals who perform *below average* are likely to have difficulties with early literacy. *Below average* scores on any of the TOPEL subtests indicate that a child is below the expected developmental trajectory on at least one of the key skills that predict success in learning to read and write. The authors also emphasised that different patterns of strengths and weaknesses on the subtests may be indicative of the experience to which a child has been exposed previously, reflecting underlying processing difficulties, or suggests areas requiring focused remediation.

The subtest of print knowledge skills consisted of 36 items that measured print concepts, letter discrimination, word discrimination, letter-name identification,

and letter-sound identification (Wilson & Lonigan, 2010). The results demonstrate only minor improvement. In terms of the ELI, both groups scored between 90 and 110 (*average*) and remained the same after the intervention. Children who score in the *average* range on the Print Knowledge subtest demonstrate familiarity with print materials by holding books upright, turning pages, and pointing to pictures. They recognise common logos for products and services. They are also becoming familiar with letters and can recognise their own name when it is printed. They enjoy participating in shared book reading and storytelling activities.

The Definitional Vocabulary subtest consisted of 35 items measuring children's single-word spoken vocabulary and their ability to formulate definitions for words (Wilson & Lonigan, 2010). The results of the pre- and posttest demonstrated only a slight improvement. In terms of the ELI, both groups still scored lower than 70, in which the rating was described as *very poor* before and after the intervention. According to the TOPEL, children who score *below average* on the Definitional Vocabulary subtest have difficulty naming common objects and explaining their purpose. Deficits in oral language, including vocabulary, may reflect suboptimal environmental stimulation of language, hearing difficulties, a verbal processing deficit, or general intellectual impairment. These children may perform poorly on games involving naming objects, or pictures of objects.

The Phonological Awareness subtest included 27 items, both multiple-choice and free response along the developmental range of phonological awareness from word awareness to phonemic awareness (Wilson & Lonigan, 2010). The results of the pre- and posttest demonstrated a major improvement. In terms of the ELI, both groups scored 'very poor' (<70) and 'poor' (70-80 to 90-110), in which the rating is described as *average* after the interventions. According to the TOPEL, children who score in the *average* range on the Phonological Awareness subtest demonstrate an average ability to manipulate the sounds that form common words. These children can add sounds to form real words and delete sounds from words at a level typical for children of their age. They are likely to participate in games that require them to mimic an adult's sounds. They learn to produce new and unfamiliar words like other children.

Table 1 Paired t test for Pre- and Posttest

Test	Experimental Group			Control Group		
	<i>M</i>	<i>SD</i>	Mean diff / <i>p</i>	<i>M</i>	<i>SD</i>	Mean diff / <i>p</i>
Overall Reading Skills						
Pre	68.85	8.91		72.50	11.12	
Post	92.10	4.32		85.90	9.41	
			-23.25/.00*			-13.40/.00*
Print Knowledge Skills						
Pre	104.10	11.03		106.35	9.49	

Post	114.00	2.41	110.00	5.63
			-9.90/.00*	-3.65/.00*
Definitional Vocabulary Skills				
Pre	55.00	0.00	57.80	11.83
Post	65.35	8.49	58.10	12.27
			-10.35/.00*	-0.30/.11
Phonological Awareness Skills				
Pre	68.25	13.47	71.65	13.77
Post	103.20	6.83	99.35	10.87
			-34.95/.00*	-27.70/.00*

Note. * = indicates a significant differences, $p < .05$; $n = 20$ each group.

Several paired t tests were conducted to compare the overall English reading skills and the three subtests (Print Knowledge, Definitional Knowledge, and Phonological Awareness skills) before and after the intervention of the experimental and non-intervention activities of the control group (see Table 1). In overall reading skills, the difference of the pre- and posttest showed an extreme significant difference in the scores ($p = 0.00$). The results suggest that music and movement as well as lessons without an intervention did impact upon the reading skills of five-year-old preschoolers.

On the other hand, the differences of the pre- and posttest mean of each the subtests showed an increase in both groups. There was also an extremely significant difference ($p = 0.00$) in the scores for print knowledge of both groups; extreme significance ($p = 0.00$) on the definitional vocabulary of experimental group. The control group showed no significant difference ($p = 0.11$) in the vocabulary subtest. The third subtest, Phonological Awareness, of both the groups also showed an extreme significant difference in the scores ($p = 0.00$). These results suggest that both music and movement impacted the overall English reading skills as well as all three subtests in the pre- and posttest while the control group without intervention also impacted upon the overall reading skills followed by only two subtests of the TOPEL after Week 6.

Group 2

This group consisted of independent t tests that were used to answer the five research questions regarding the impact of music and movement activities on reading skills and on each subtest. The t tests were analysed for (a) both pretests of both groups score and (b) both posttests of both groups (see Table 2).

Table 2 Independent t Test for Experimental and Control Groups

Group	Pre-test			Post-test		
	<i>M</i>	<i>SD</i>	Mean diff/ <i>p</i>	<i>M</i>	<i>SD</i>	Mean diff/ <i>p</i>
Overall Reading Skills						
Experimental	68.85	8.91		92.10	6.65	
Control	72.50	11.12		85.90	9.41	
			-3.65/.25			6.20/.02*
Print Knowledge Skills						
Experimental	104.10	11.03		114.00	2.41	
Control	106.30	9.49		110.00	5.63	
			-2.25/.49			4.00/.005*
Definitional Vocabulary Skills						
Experimental	55.00	0.00		65.35	8.49	
Control	57.80	11.83		58.10	12.27	
			-2.80/.29			7.25/.03*
Phonological Awareness Skills						
Experimental	68.25	13.47		103.20	6.83	
Control	71.65	13.77		99.35	10.87	
			-3.40/.43			3.85/.18

Note. * = indicates a significant differences, $p < .05$; $n = 20$ each group.

Research Question 1

What is the impact of music and movement activities on the reading skills of preschoolers measured by the TOPEL? An independent t test was conducted to compare both the pretest and the posttest of the overall reading skills between the experimental and control groups. The pretest is considered to not be statistically significant following the scores of $p = 0.25$, which revealed that there were only slight differences between the experimental and control group's pretest scores in the overall reading skills of the preschoolers. The difference of the posttest was considered to be statistically significant following the score of $p = 0.02$.

This result suggests there were large differences between the experimental and control groups' posttest scores in the overall English reading skills. This outcome demonstrates a higher mean difference in the posttest of the experimental group, which indicates that music and movement activities did impact the five-year-old preschoolers on reading skills of the three subtests, Print Knowledge, Definitional Vocabulary, and Phonological Awareness, compared to the control group.

Research Question 2

What is the impact of music and movement activities on preschoolers on Print Knowledge skills as measured by the TOPEL? An independent *t* test was conducted to compare both pretest and posttest of the print knowledge skills between the experimental and control groups. The pretest was considered to be not statistically significant following the scores of $p = 0.49$. The posttest was considered to be very statistically significant following the scores of $p = 0.005$. This result suggests that there were major differences between the experimental and control groups' posttest in the print knowledge skills. This result demonstrates a higher mean difference in the posttest of the experimental group, which proves that music and movement activities did impact the preschoolers on Print Knowledge skills after the intervention compared to the control group.

Research Question 3

What is the impact of music and movement activities on preschoolers on vocabulary skills as measured by the TOPEL? An independent *t* test was conducted to compare both the pretest and posttest of the Definitional Vocabulary skills between the experimental and control group. The pretest was considered to be not statistically significant following the scores of $p = 0.29$. The posttest was considered to be very statistically significant following the scores of $p = 0.03$. This result suggests that there were major differences between the experimental and control groups posttest in the Definitional Vocabulary skills. This result demonstrates a higher mean difference in the posttest of the experimental group, which demonstrates that music and movement activities did impact the preschoolers in vocabulary skills after the intervention, was compared to the control group.

Research Question 4

What is the impact of music and movement activities on preschoolers on the phonological awareness skills measured by the TOPEL? An independent *t* test was conducted to compare both the pretest and the posttest of the phonological awareness skills of the experimental and control group. The pretest was considered to not be statistically significant following the scores of $p = 0.43$. The posttest was also considered to not be statistically significant following the scores of $p = 0.18$. This result suggests that there were minor differences between the experimental and control groups' posttest in phonological awareness skills. Although, this result

demonstrates a higher mean difference in the posttest of the experimental group, it demonstrated that there was less impact in phonological awareness skills on preschoolers with or without the intervention of music and movement activities.

DISCUSSION

The research findings indicated that music and movement impacted upon the reading skills of preschoolers compared to the non-musical and non-movement activities. The data analysis answered the five research questions:

The research findings relating to the first question demonstrated a negative impact on the difference between the pretest score of both the experimental and control group, but showed a significant difference in the posttest. These results demonstrated that the music and movement activities, which included singing nursery rhymes and body movements, impacted upon five-year-old preschoolers in terms of enhancing their English reading skills. This study demonstrated that music does affect English reading skills in a positive way although this study was conducted over a short term of six weeks. These results support the concept of Register et al. (2007) who indicates that music is a powerful channel, which has the capacity to engage and motivate most children to learn any subject matter, for example in reading skills. Register's study also indicates that a music/reading programme improves basic reading skills even if it is conducted over an intensive short term. Similarly, Li and Brand (2009) found that students who were exposed to music attained higher posttest scores after the immediate musical intervention and also on the delayed posttest of three weeks after the intervention. This indicates that even minimal music exposure assists children in linguistic functions (Milovanov & Tervaniemi, 2011) and pre-literacy skills (Moreno, Friesen & Bialystok, 2011). According to Pica (2010), explicit learning may exceed learning through physical experience but the physical experience has a greater effect and impact on children than adults. She also highlights that body language is an exceptional way of communication and strongly believes that thoughts and feelings expressed in words begin in the body through movement. In terms of a second language, music also impacts on child English language learner by incorporating music into their daily activities to promote literacy development (Paquette & Rieg, 2008).

The research findings related to the second question showed a negative impact on the difference between the pretest score of both groups, but demonstrated a positive result in the posttest. This finding clarified that children in the experimental group developed print knowledge skills better than children who were not exposed to music at all. This study demonstrates that music plays a significant role in enhancing children's print knowledge. Corrigan and Trainor (2011) and Edwards et al. (2009) mention that music is the best way to explore words and print concepts. When children listen and sing, they will comprehend that the print has meaning and that both are related to each other. Corrigan and Trainor found that length of training had an effect on children's reading skills. Their study revealed that when bright children start their music lessons early and continue to develop reading, the amount of formal music experience also impacts on their reading ability.

Another study conducted by Piasta, Justice, McGinty and Kaderavek (2012) found that increasing children's early print knowledge may be an access point to a range of literacy accomplishments in pre- elementary school. Later, the gains of early print knowledge will be transferred to other skills such as early reading, spelling, and comprehension. Lynch (2010) cites SES factors related to parental involvement in children who are not read to at home and are further behind academically than other children. The current findings indicate that the majority of the children's parents and or guardians were working in medium SES families. Although the intervention had a positive impact on the experimental group, Lynch emphasised that whether the parents are from high- or low-SES areas, parental involvement with children at home, particularly reading to children or discussing storybooks is important for children's school success.

The research findings related to the third question demonstrated a negative impact in the pretest of both groups, followed by a positive result in the posttest. These findings indicated the highest score among all three subtests. The result showed that children in the experimental group developed definitional vocabulary skills far better than children who were not exposed to music at all. The findings of Ahmad et al. (2004) on language barriers are consistent with the current findings as the preschoolers could understand spoken English but were unable to respond accurately. According to Nevills and Wolfe (2009), vocabulary development initially happens through speaking. Discussions on the meanings of words provide opportunities for students to converse which develops their spoken language and vocabulary for long-term accessibility. Vocabulary development is enhanced when children have adequate exposure to the language (Coppola, 2005). Cooper (2010) and Edwards et al. (2009) stressed that early childhood educators are aware that music, language, and reading are connected with each other. As children learn more songs, they have the opportunity to widen their vocabulary and their pronunciation becomes more accurate. As they understand the words of a song, they also improve their language skills and sing with great interest.

The research findings related to the final question had a negative impact on the pretest score as well as the posttest. It showed that the experimental group scored higher than the control group; however, the intervention of music and movement activities had less impact where there was no significant difference on the phonological awareness skills of preschoolers. Griffith et al. (2008) stated that phonological awareness plays a critical role because it is the foundation of children's literacy development. Children with well-developed phonological awareness have the ability to rhyme, blend, manipulate, and segment the sounds in spoken words. Although there were many studies indicated that music enhanced phonological awareness skills, such as Bolduc and Lefebvre (2012), Griffith et al. (2008), and Baleghizadeh and Dargahi (2010), the results of the subject study did not match the previous findings. Yazejian and Feinberg (2009) revealed similar results in their study where there were no differences between the intervention of music and movement and the comparison group in language skills in terms of receptive language ability and phonological awareness but significant differences were found in communication skills. Moreno et al. (2011) found that music training did not impact upon children in their phonological awareness of the representations of

words. Moreno et al. and Yazejian and Peisner-Feinberg believed that short-term intervention, such as 20 days of training, or 30 minutes twice a day, was not tangible to develop an effect in this area of literacy skills. Runge and Watkins (2006) explained that letter name recognition or print knowledge was the easiest task for preschoolers while segmentation of orally presented words was the hardest.

CONCLUSION

We acquire language from birth throughout our lifespan (Griffith, et al., 2008). A child uses language to interact with others, learn about the world, and solve problems. One way to develop language acquisition is to include music and movements in the learning instruction. Teachers should encourage children to participate actively in music activities but they must also ensure that the activities are incorporated equally in the educational process (Denac, 2008). The research findings in the present study indicated the majority of preschoolers only used one language, Malay, and moreover the second language was not emphasised very much. Because the English and Malay languages use an identical alphabetic system, the participants were able to score well in their overall reading, including print knowledge and vocabulary skills, at the end of the intervention within only six weeks. As Coppola (2005) mentions, the knowledge acquired in one language is accessible in another language. Overall, the evidence from this study suggests that more musical and movement activities should be included in daily teaching instructions. Bolduc and Lefebvre (2012) mentioned that teachers should stimulate their lessons beyond the use of nursery rhymes. Using motivating language activities aiming at reading skills of phonological awareness, vocabulary, and inference skills would help children to learn more effectively and reach their goals. A long-term intervention would probably have better impact because a short-term of six weeks produced a progressive result on preschoolers' reading skills. As the connection between music and reading skills is very strong, various strategies can be used to boost the development in all learners. It can therefore be concluded that deliberate literacy activities intertwined with music and movement should be planned wisely with the aim that every child can become involved in the process towards developing his or her language knowledge naturally.

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