

The Effectiveness of "Brainy Games" on the English Language Ability of Children Aged 5-6 Years

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Abstrak

Masa usia dini adalah masa yang sangat penting, karena semua aspek perkembangan dalam diri anak dapat berkembang dengan sangat cepat terutama perkembangan bahasa anak. Namun perkembangan Bahasa ini dapat semakin dioptimalkan dengan pemberian stimulasi diantaranya menggunakan media permainan edukatif "Brainy Games". Melalui permainan edukatif "Brainy Games" tidak hanya mengembangkan kemampuan anak dalam berbahasa melainkan juga untuk mengenal teknologi serta keterampilan berbahasa Inggris, sehingga anak mampu mengenal kosakata dan kalimat perintah dalam Bahasa Inggris. Penelitian ini menggunakan jenis penelitian kuantitatif *pre-experimental* dengan *one group pretest-posttest design*. Subjek penelitian dalam penelitian ini adalah anak usia 5-6 tahun sebanyak 15 anak. Adapun pemilihan subjek dengan mempertimbangkan penerapan bahasa asing utamanya Bahasa Inggris dalam kegiatan belajar mengajar di TK. Teknik pengumpulan data menggunakan observasi dan dokumentasi. Untuk menarik kesimpulan dari hasil penelitian, dilakukan uji hipotesis dengan menggunakan uji-t. Sebelum melakukan uji-t, terlebih dahulu dilakukan uji normalitas dan uji homogenitas terhadap hasil penelitian. Sedangkan uji hipotesis dilakukan untuk mengetahui pengaruh permainan kosakata dan perintah Bahasa Inggris melalui permainan edukatif "Brainy Games" terhadap perkembangan bahasa anak usia 5-6 tahun. Hasil dari penelitian ini adalah permainan edukatif "Brainy Games" dapat digunakan untuk mengembangkan perkembangan bahasa anak dengan baik terutama dalam hal mengenal kosakata dan kalimat perintah Bahasa Inggris pada anak usia 5-6 tahun.

Kata Kunci: Permainan Edukatif "Brainy Games", Kemampuan berbahasa Inggris, Anak usia 5-6 tahun.

Abstract

Early childhood is a very important period, because all aspects of a child's development can develop very quickly, especially the child's language development. However, the development of this language can be further optimized by providing stimulation, including using the educational game media "Brainy Games". Through the educational game "Brainy Games" it is not only possible to develop children's language skills but also to become familiar with technology and English language skills, so that children are able to recognize vocabulary and command sentences in English. This research uses a pre-experimental quantitative research type with one group pretest-posttest design.

The research subjects in this study were 15 children aged 5-6 years. The selection of subjects takes into account the application of a foreign language, especially English, in teaching and learning activities in kindergarten. Data collection techniques use observation and documentation. To draw conclusions from the research results, a hypothesis test was carried out using the t-test. Before carrying out the t-test, a normality test and homogeneity test are first carried out on the research results. Meanwhile, hypothesis testing was carried out to determine the effect of English vocabulary and command games through the educational game "Brainy Games" on the language development of children aged 5-6 years. The results of this research are that the educational game "Brainy Games" can be used to develop children's language

development well, especially in terms of recognizing English vocabulary and command sentences in children aged 5-6 years.

Keyword: Educational game "*Brainy Games*", English language skills, Children aged 5-6 years.

INTRODUCTION

Playing is the child's world. A child finds joy in playing, whenever or wherever. All objects around them will turn into toys. As they play, children are naturally trained to learn something and gain skill to be used in their future (Lestari, 2020). New experiences that are obtained by those young minds include in the ability to solve problems, again as their reference being a problem solver in the future (Utami et al., 2017). The ideas are aligned to Akman and Guchan (2015) suggesting that children obtain benefit from active playing. To engage more interest in playing, the games should be presented in the most attractive way possible.

As the children gain new knowledge from active playing, their mental is stimulated optimizing their development. The active playing should use educational toys (Prima et al, 2019). Technology-based educational toys are also best to be introduced in the children's early years to initiate their understanding towards technology in this 5.0 society (Kurniasih, 2019). Nikiforidou (2018) supports her idea of introducing technology-based educational toys since children's early years. By having such early exposure, those young minds are expected to be used and better trained in applying technology into daily learning.

Society era 5.0 requires its habitants to also refine their communication skills, in English, that would benefit internationally. The condition is inevitable as most recent technology operates in English. In Indonesia, English is a foreign language and introduced in primary years. However, more and more early education institutions have started introducing English to their students. It is then agreed by Widyahening et al (2022) that English is the first foreign language to be acquired by a Indonesia student, from his young age until his higher education level. The simplest way is exposing young children to common nouns, parts of the body, and else (Firdaus & Muryanti, 2020). The more vocabukary a child acquires, the better his language skills will be (Asmin, 2013).

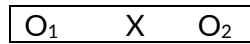
Children vocabulary rapidly grows as they are stimulated through consistent plays, reflected in their optimum language skills (Anggraini, dkk., 2022). Rahmawati (2012) supports the idea of how important a play is to enhance a child's vocabukary. "*Brainy Games*" is one educational games aimed to improve children's vocabulary, particularly in specific vocabulary and imperative sentences. Intended for children of 5-6 years old, "*Brainy Games*" is compilation of a few graded games, packed in bright catchy colours and distinct audio. As young minds have different concentration span, the games variety facilitate the children's freedom of choosing and trying.

Prior to "*Brainy Games*" development, the writers had conducted observation in a local kindergarten. Exposure to English vocabulary had been carried out in the respective kindergarten using picture cards and realia. However, such one-way method was not very impactful as children did not seem to memorize the vocabulary being introduced or taught. About two-third of the 15 population were observed as either confused or clueless.

"*Brainy Games*" is then one of an effective educational games to help introduce English vocabulary and imperative sentences in the most pleasant and motivating way possible.

METHODOLOGY

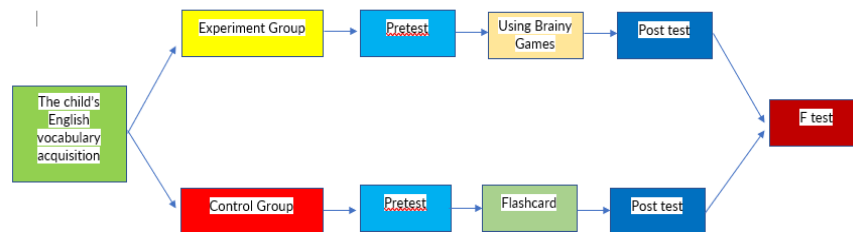
This research applies quantitative method, One-Group Pretes-Posttest Design, focusing to find out the influence of free variable, known as educational "*Brainy Games*" towards 5-6 year olds English vocabulary. The 5-6 year old subjects, the whole research subjects, are to be assessed on their before and after using "*Brainy Games*", in terms of their English vocabulary. The dependent variable in this research is the influence of the game "*Brainy Games*" while the independent variable in the research is English language skills for children aged 5-6 years. The research design is illustrated as follows:



One-Group Pretest-Posttest Design

Information:

- O₁ : pretest in experiment group
 O₂ : posttest in experiment group
 X : treatment with "Brainy Games"



Research flow diagram

Before receiving treatment, a subject is given a *pretest* using a child English observatory page in a form of picture card/flashcard. The child is asked to name the English noun shown on *flashcard*. Following the *pretest*, the subject receives *treatment* known as educational "Brainy Games". During this treatment, the child receives gradual material exposure. At the end of the meeting, the subject receives a *posttest* in a form of picture card/flashcard. Both the *pretest* and *posttest* are analyzed and calculated to see how "Brainy Games" has affected the child's English vocabulary acquisition. The data is then collected through test and documentation. Grade instrument is as follows:

Table 1. Research Variabel

research variables	Indicator	Result			
		1	2	3	4
English Vocabulary	Children understand the vocabulary they hear				
	Children understand the command sentences they hear				
	Children remember the vocabulary they hear				

To draw the conclusion, hypothesis test was conducted with *t/ Paired Sample T-test*. Before doing it, normality and homogeneity tests were conducted. When alpha score is more than 0.05, the data is considered sufficient and reliable. Hypothesis test was conducted to see if "Brainy Games" affects the the young children's English acquisition

FINDINGS AND DISCUSSION

The research was conducted in a private kindergarten in Surabaya, where English has been taught to some extent daily, from January 29, 2024 to Feb, lasted for a month. The population was 15 children aged 5 to 6 years old, known as group B. The conducted analysis showed there is a scoring increase between the *pretest* and *posttest*. The comparison before and after the treatment, using "Brainy Games" educational games, is displayed below

Table 2. Comparison of Pretest and Posttest Scoring

No	Initials	Result	
		Pretest	Posttest
1	AA	7	11
2	DA	6	9
3	FN	9	12
4	GA	8	11
5	HM	6	11
6	KA	9	12
7	MB	6	9
8	MM	6	9
9	MS	6	11
10	MF	6	11
11	MH	6	11
12	NA	7	12
13	N	6	9
14	NL	8	12
15	ZI	6	9

The normality test of this respective research applies Komolgorov-Smirnov with the following result.

Table 3. Normality Test Result**One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		15
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.89642146
Most Extreme Differences	Absolute	.201
	Positive	.201
	Negative	-.201
Test Statistic		.201
Asymp. Sig. (2-tailed)		.105 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Having significance score 0,000 which means 0.05, the residual score is concluded to be normal distributed.

Table 4. Homogeneity of Variant Test

		Test of Homogeneity of Variances			
		Levene Statistic	df1	df2	Sig.
<i>pretest</i>	Based on Mean	.262	1	28	.613
	Based on Median	.127	1	28	.724
	Based on Median and with adjusted df	.127	1	26.296	.724
	Based on trimmed mean	.302	1	28	.587

The result showing 0.613 is greater than 0.05 means the homogenic data.

Table 5. Paired-Sampe T-test Result

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	Df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	pretest – posttest	-3.800	.941	.243	-4.321	-3.279	-15.638	14	.000

DISCUSSION

Pratiwi (2019) defines young children as individuals starting their lives in beginning and experience this phase as an influential chapter affecting their later stages. Nai'mah, Widyasari, and Herdian (2020) also explain that young children require supervision and care-taking to maximize their growth and development. These all statements underline the importance of early assistance during the critical growing years of those young children.

Young children have their own uniqueness and specific characteristics, similar to the other distinctive development stages. Khairi (2018) signifies the young children characteristics of being: 1). Unique, that each child has his/her own innate capability and interests, as well the personal background., 2). Egocentric, a child will see and judge the world from her/his own personal perspective due to his/her own sake. Every child considers himself important, so does his own needs and matters. , 3). Active and energetic, as most children enjoy doing activities, especially when they are exposed to new and challenging circumstances, 4). Curious, a child is naturally curious as s/he will see, observe, listen, and question everything seen and heard, particularly the situations or items are new, 5). Explorative and adventurous, a child is always seeking for adventure, 6). Spontaneous, a child is usually genuine in sending off his/her feeling, emotions, reflected in the facial expressions and gestures, 7). Imaginative, a child enjoys listening and telling imaginative tales, not only to himself but also to others, 8). Prone to frustration, a child in his/her young age has, still, limited control towards his/her own emotion, thus crying and throwing tantrum is not something rare.

Early Childhood Education Concept

Education is crucial in improving one's life for the better. In this case, early childhood education is needed to optimize child's growth and development. Initiated since birth until a child is 6 years old, early childhood education aims to stimulate child's growth in terms of physical and

spiritual, preparing him/her to embark future process of education (Sugian et al., 2021). Dewi (2017) states that early childhood education varies into 2, formal and non-formal. Formal education is conducted at play group and kindergarten level. Both are equally important to maximize the children's growth.

Early Childhood language Development

Language is an ultimate means of human communication. Safitri (2017) even states that a child's language capacity is his/her development indicator, as it is closely related to one's fine and gross motoric skills, language, cognitive, and also the social capacity. Julianti (2018) states that a child's language development includes his/her ability to respond to instructions, to articulate thoughts, and talk spontaneously. All is shown when a child responds to stimuli in the surrounding environment. The interactive responses cue the use of language that, when it is stimulated, lead to language progress and development.

The language development starts when a child is born and the process is reinforced during environmental engagement (Karimah and Komalasari, 2019). As the initial language capacity is naturally low, child's language acquisition grows over time along with the provided exposure from the environment. One's language capacity is not merely observed from his/her literacy but also from other capacity of vocabulary, and communicative ability and comprehension (Suryana, 2018). Vocabulary is a key factor related to a child's language development, potentially trained to any child relevant to his/her immediate environment (Firdaus and Muryanti, 2020). Rich vocabulary supports one's ability to verbalize or to communicate ideas. Thus, enriching a child's vocabulary is always a strategic and efficient way to make him/her fluent.

Early Childhood English Acquisition

Young children are the most observant creatures. They naturally observe their immediate surrounding, be it a green plant growing on a stem or rustling green objects on the ground called grass. The first vocabulary obtained would be the one(s) in child's mother tongue. When English, as a foreign language, needs to be introduced to any children, it has to take forms in a most concrete and enjoyable way possible as young children do not feel any necessities to speak a foreign language in their immediate context. In Indonesia, where Indonesian is a means of communication, children do not feel any *force* to use English to get what they need or want.

An effective way to get those young children get to know English is by immersing the target language into their world: playing. Playing is children's natural world where they observe the world and learn the nature of life from it. At the age of 5-6 years old, known as the golden age period, children are at the peak of synchronizing their acquired mother tongue with the targeted foreign language, in this case English. During this age, their brains function as sponges that effortlessly absorb new exposure of vocabulary.

The Influence of *Brainy Games* towards Young Children's English Acquisition

Games, known as playing tools, are set of computer animation, supported by technology (Natwan, 2014). Commonly used as entertainment, games are also benefited for learning, known as educational games. When games are used for learning, they function to refine one's ability, skill, and knowledge. Rahman and Tresnawati (2016), educational games support children to learn and master a certain skill.

There are several researches focusing on media use in children's learning as follow "*Pengaruh Permainan Edukatif Edu-Games Bobby Bola terhadap Kemampuan Kognitif (Pengenalangan Angka, Huruf dan Bentuk) Anak Usia 4-5 Tahun*", published by Putra (2015). Anggraini et al (2022) also talked about how technology-based learning media affects young children's English acquisition in "*Pengaruh Permainan Kosakata Bahasa Inggris melalui Digital Smart Board for Kids terhadap Perkembangan Bahasa Anak Usia 5-6 Tahun di Era Merdeka Belajar*". Yuliana et al (2023) also published their work entitled "*Peningkatan Kualitas Pembelajaran Melalui Sosialisasi Alat Permainan Edukatif Puzzle Digital bagi TK Kartini Desa Sentul Kabupaten Jombang*". The conducted researches confirmed how educational games are efficient tools to optimize young children cognitive development, leading to other development aspects.

The use of English in the respective educational games does improve young children's vocabulary as they expose those young learners in the most attractive way possible through games and children-related world and experiences. All these considerations are to be integrated to make foreign language a pleasant encounter of learning.

Conclusion

The data analysis of the research discussion concludes that young children's English vocabulary gained an increase, in *high* category, after the respective treatments were given. The data calculation applied SPSS 23 through *paired sample t-test*, known to have Sig result (2-tailed) of 0,000, meaning that H_a is accepted and H_0 is rejected. It is then concluded that educational "Brainy Games" leave positive impacts on young children's English vocabulary acquisition.

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