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The Impact of the *SEMAGI* Programme on Learning Concentration in Early Childhood

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Abstract
SEMAGI is a breakfast habituation program given to early childhood as an effort to provide children with an understanding of the importance of breakfast in the morning to improve concentration in learning at school. The purpose of this study was to determine the impact of the SEMAGI program habituation on learning concentration in early childhood at SPS Kamboja 4 School, Sukowono District, Jember Regency. This study used a pre-experimental research approach with one group pretest-posttest design. Data analysis used in this study used t-test analysis to determine the impact of breakfast habituation on learning concentration in early childhood as seen from the significance of the difference in learning concentration before and after being given the SEMAGI program. The pre-test results showed that out of 25 samples, 16 (64.0%) respondents had poor learning concentration and 9 (36.0%) respondents had good learning concentration, while in the post-test, 7 children (28%) still had poor learning concentration, while 18 children (72%) had good concentration. The results of the t-test analysis showed a significant difference in learning concentration before and after the SEMAGI program with a t value of 2.736 and a p value of 0.012. These results show a significant number because the p value <significance level (α) = 5% (0.05). Based on these results, it can be said that the SEMAGI program has a positive impact on learning concentration in early childhood at SPS Kamboja 4 School, Sukowono District, Jember Regency. Based on the research that has been conducted, students are accustomed to having breakfast to support children in concentrating when receiving learning at school.

Keywords: *Concentration on learning, Early Childhood, SEMAGI*

INTRODUCTION

Eating breakfast or breakfast has an important role for school children, namely to fulfil nutrients in the morning, where children go to school and have very busy activities at school. If accustomed to breakfast, it can affect brain intelligence, especially memory so that it can support learning achievement in a better direction (Mawarni, 2021). Breakfast can be done in various places, both at home, work, eating places, etc. the habit of having breakfast is very important because the body needs glucose intake, because it has not consumed food overnight and if you skip breakfast it can cause a decrease in learning concentration, lethargy, drowsiness and disrupted daily activities (Masleni, Siringo-Ringo, & Yemina, 2021).

Concentration is the concentration of attention on an object such as concentration of mind, concentration of attention and others (Luthfillah & Aryanto, 2022) states that learning concentration allows students to concentrate on the lesson and ignore other things besides the lesson itself. If concentration is reduced, it will be difficult to follow lessons in class and study privately. Based on the results of a food consumption survey conducted by the Basic Health Research (Riskesdas) 2018, 33.4% of children aged 4-6 years consumed energy below the minimum needs (Kemenkes, 2018). The types of foods that are good to consume for breakfast are also very limited, including rice, root stew, noodles, biscuits, and cereals (Said, Latersia, & Muniroh, 2024). Rice and tuber stew are not balanced with side dishes that contain protein and vitamins. The types of drinks most often consumed at breakfast are mineral water, syrup, milk with high sugar content, and milk with low sugar content (Said et al., 2024).

(Karissa, 2017) says that a lack of learning concentration can lead to low academic achievement. One of the factors causing children's lack of learning concentration is not eating breakfast, also known as breakfast, because eating breakfast can improve children's concentration and help them absorb lessons at school better. (Rohmah, Rohmawati, & Sulistiyani, 2020) Says that lack of concentration in students during learning can hinder the learning process. Breakfast has an important role in meeting the energy needs of school children, a good breakfast is a food that contains carbohydrates because it will stimulate glucose and micronutrients in the brain that can produce energy besides that it functions to spur the brain to help focus the mind or concentration to learn and facilitate the absorption of lessons (Purnawinadi & Lotulung, 2020). Children who diligently eat breakfast have better retention than children who do not eat breakfast (Karissa, 2017).

The impact for students who leave breakfast includes not concentrating on learning in class, because the body does not get enough nutrients. Instead, students choose snacks at school to fill their stomachs. But the quality of snack food is not balanced. Therefore, the habit of breakfast is maintained in every family. In addition, breakfast plays an important role, especially to provide energy and passion for learning and work at the beginning of a new day (Rohmah et al., 2020). Lack of breakfast intake causes students to lack energy intake, which can cause weakness, lack of concentration, and even fainting. So good breakfast habits are very important for the learning process and student activities at school (Rohmah et al., 2020). Based on the existing problems, researchers conducted research to determine the impact of the SEMAGI program on learning concentration in early childhood at SPS Kamboja 4 school, Sukowono District, Jember Regency.

Several studies from international scientific journals relevant to the topic of the impact of breakfast programs on learning concentration in early childhood have shown that breakfast has a positive effect on cognitive function and academic performance. A study by Rampersaud et al. (2005) in the Journal of the American Dietetic Association found that breakfast habits are associated with improved cognitive function, including better concentration during learning. Similarly, Adolphus et al. (2013) in Frontiers in Human Neuroscience revealed that breakfast contributes to enhanced attention, memory, and other cognitive aspects essential for academic success. Meanwhile, a systematic review by Hoyland et al. (2009) in Nutrition Research Reviews indicated that breakfast can improve cognitive performance, particularly in tasks requiring attention and short-term memory.

Although previous studies have demonstrated the benefits of breakfast on learning concentration, several gaps need to be addressed. Most studies were conducted in Western countries with different cultural contexts and eating habits from Indonesia, making research on breakfast programs like SEMAGI in the local context still limited. Furthermore, many studies focus on school-age children and adolescents, while research on the impact of breakfast programs in early childhood remains scarce. Given that early childhood is a crucial period for cognitive development, the SEMAGI study provides an important contribution to understanding the effects of breakfast on this age group. Additionally, the SEMAGI program emphasizes breakfast habituation through a specific approach that has not been widely explored in previous studies.

Therefore, this study fills a gap in the literature by presenting empirical data on the effectiveness of a breakfast program tailored to Indonesia's cultural context, with a specific focus on early childhood. This study aims to describe how the impact before and after the SEMAGI program was held at SPS Kamboja 4 school in Sukowono District, Jember Regency, and later, we will know what causes decreased concentration in children at school. The researcher hopes that this research can be useful as a provider of information or additional knowledge to teachers and guardians of SPS Kamboja 4 students in Sukowono District, Jember Regency, regarding the impact of the SEMAGI program on learning concentration in early childhood by implementing improvements in nutritional values and children's provisions.

METHODOLOGY

This study used a pre-experimental research approach with a one group pretest-posttest design (Riyadi et al., 2023). This study was conducted on 25 early childhood in SPS Kamboja 4 Sukowono District, Jember Regency as respondents of this study. This design was carried out by giving a pretest before treatment and posttest after treatment as shown in Figure 1 below.

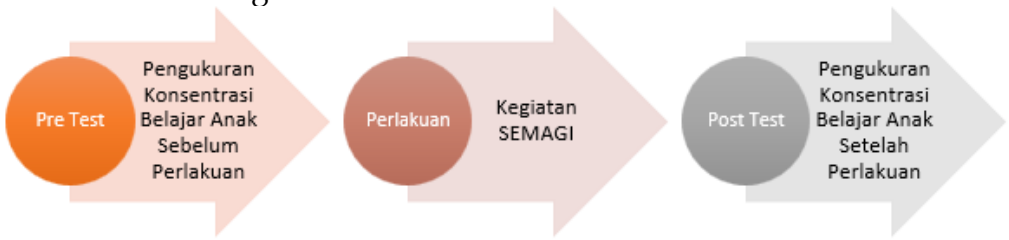

Figure 1. ***One Group Pretest-Posttest Design***

The data analysis used in this study used t test analysis to determine the impact of breakfast habituation on learning concentration in early childhood as seen from the significance of differences in learning concentration before and after being given the SEMAGI programme. The t-test analysis is calculated using the formula:

$$t = \frac{\overline{D}}{SD/\sqrt{n}}$$

Description:
D : Average difference between pre and post scores
SD : Standard Deviation of the score difference
N : Amount of sample
The research hypothesis can be formulated as follows:

H_0 : there is no significant difference in children's learning concentration between before and after the SEMAGI Programme
H_a : there is a significant difference in children's learning concentration between before and after the SEMAGI Programme.

RESULTS AND DISCUSSION

The results of the research conducted by the researcher found that before being given the SEMAGI Programme, children had a habit every morning of not being enthusiastic about doing gymnastics together, being spoken to only nodded, pouted, did not want to go to class, and some even cried, always wanting to buy snacks in the school canteen. Based on initial observations, this problem is caused by students who do not eat breakfast. In fact, good nutritional intake is needed to support children's growth and development, supporting the growth of children's brain, physical and emotional development. In addition, children also need a good diet to be able to concentrate in class, learn well, and have a strong immune system. The following is a recapitulation of data on children's breakfast habits at SPS Kamboja 4 in Table 1.

Table 1. Breakfast Habits at SPS Kamboja 4

Breakfast Habits	Frequency (n)	Percentage (%)
No Breakfast	19	76.0
Breakfast	6	24.0
Total	25	100.0

Based on table 1. Overview of morning eating habits at SPS Kamboja 4 Year 2024, it is known that out of 25 respondents, 19 (76.0%) respondents with the habit of not eating breakfast and 6 (24.0%) respondents with the habit of eating breakfast. Based on the results of interviews with parents, the habit of not eating breakfast is caused by several factors including; children waking up late, children do not want to have breakfast because the food menu is less varied, and parents do not prepare breakfast. The impact of children who do not eat breakfast on learning concentration can be seen in Table 2 below.

Table 2. Overview of learning concentration before the SEMAGI programme at SPS Kamboja 4

Learning Concentration	Frequency (n)	Percentage (%)
Lack Concentration	16	64.0
Good Concentration	9	36.0
Total	25	100.0

Based on table 1.2 Overview of Learning Concentration before the SEMAGI programme at SPS Kamboja 4 in 2024, it is known that out of 25 respondents, 16 (64.0%) respondents had poor learning concentration and 9 (36.0%) respondents had good learning concentration. A total of 64% of children have a low level of concentration, it can be seen that children look lethargic, anxious, not eager to learn, and do not focus when given assignments or given questions. The low concentration of students' learning is caused by several factors, one of which is not eating breakfast before going

to school. The condition of students who do not have breakfast results in students not focusing on learning, rushing to buy food (snacks), drowsiness during the learning process in class, nosy disturbing their friends who are focusing on learning, and there are also children who always ask permission to leave the class because they feel bored as shown in Figures 2 and 3.

Figure 2. School activities are lacklustre and the child looks lethargic

Figure 3. Activities at School children lack concentration and do not focus on tasks

This habit of not having breakfast has a huge impact on children's concentration in learning, so that this habit can be overcome by habituating breakfast through the SEMAGI Programme. The SEMAGI programme implemented at SPS Kamboja 4 is carried out periodically every week. This habit is expected to give children an understanding of the importance of breakfast in the morning to improve learning concentration at school. The following description of the SEMAGI programme can be seen in Figure 4.

Figure 4. Morning meal habituation through the SEMAGI programme at SPS Kamboja 4

Breakfast is included in the balanced nutrition guidelines. Eating breakfast with a variety of foods will fulfil nutritional needs to maintain the body and increase productivity at work. In school children, the habit of eating breakfast facilitates concentration on learning at school (Said et al., 2024). The habit of eating breakfast is very beneficial for everyone. For adults, the habit of eating breakfast can maintain physical endurance, maintain endurance at work and increase work productivity. For school children, the habit of eating breakfast can improve learning concentration and facilitate the absorption of lessons so that learning achievement is better (Ferawati, 2016; Khalida, Fadlyana, & Somasetia, 2016). After the SEMAGI programme became a sustainable habit at SPS Kamboja 4, children's learning concentration improved as shown in Table 3.

Table 3. Learning Concentration Overview after the SEMAGI programme at SPS Kamboja 4

Learning Concentration	Frequency (n)	Percentage (%)
Lack Concentration	7	28.0
Good Concentration	18	72.0
Total	25	100.0

Based on table 1.3 Overview of Learning Concentration after the SEMAGI programme at SPS Kamboja 4 Year 2024, it is known that out of 25 respondents, 7 children (28.0%) still lack learning concentration and 18 children (72.0%) have good learning concentration. The average learning concentration before the SEMAGI programme is lower than after the SEMAGI programme, this shows that the SEMAGI programme has a positive impact on improving students' learning concentration.

The results of the t-test analysis showed a significant difference in learning concentration before and after the SEMAGI programme with a t value of 2.736 and a p value of 0.012. These results show a significant number because the p value < the significance level (α) = 5% (0.05). Based on these results, H0 is rejected, and Ha is accepted, which indicates that the habituation of the SEMAGI programme has a positive impact on learning concentration in early childhood at SPS Kamboja 4 school in Sukowono District, Jember Regency.

This study is in line with research conducted by (Luthfillah & Aryanto, 2022) which shows that there is a significant relationship between breakfast and learning

concentration. The most important benefit of the morning meal habit for the body is that it can help maintain blood glucose levels. Considering that the distance between dinner and morning is very long, which is approximately 10 hours, blood glucose levels, which are the source of energy in the body, decrease in the morning. Therefore, leaving the habit of eating breakfast will cause the body to lack glucose, resulting in all body activities such as thinking ability and concentration can be disrupted (Al-Faida, 2021). The habit of eating breakfast should ideally be done between 06.00-09.00 and the preparation of a balanced breakfast menu. The amount of food consumed is approximately 1/3 of a day's diet. Breakfast will provide enough glucose for the brain so that brain function can run well, especially the functions needed when studying at school, which requires good learning concentration (Mustikowati, Rukmana, & Karim, 2022).

Concentration can be maximised if the body has sufficient energy intake for the brain. One of the good energy intake for the brain is nutrients obtained at breakfast (Putri Yuniarsih, 2021). Food consumed in the morning is responsible for boosting blood sugar levels, while blood sugar is the main source of energy for the brain and blood cells. Therefore, breakfast serves to restore energy reserves and blood sugar levels. Skipping breakfast will cause the body to lack glucose (blood sugar), which causes the body to weaken due to the absence of energy supply. If this happens, it can cause stomach emptiness, which will certainly interfere with learning concentration (Andriati & Nuraini, 2020). The positive impact of the SEMAGI programme is the increase in children's learning concentration during learning at school as shown in Figure 5.

Figure 5. Positive impact on children's concentration through the SEMAGI programme at SPS Kamboja 4

The success of the learning process is influenced by the ability to concentrate on the object being learnt. Concentration is an important aspect for successful learning. Breakfast is the first meal that provides energy for brain function in learning, especially learning concentration (Dwi, Falah, & Putri Sahari, 2022).

The findings from the SEMAGI Programme study at SPS Kamboja 4 align with previous research on the positive effects of breakfast on learning concentration. The results demonstrate that before the implementation of the SEMAGI Programme, a

significant proportion of children (76%) did not have breakfast, leading to low learning concentration in 64% of students. However, after the SEMAGI Programme was implemented, the percentage of students with good concentration increased to 72%, with statistical analysis confirming a significant improvement in learning concentration.

These findings support the studies by Rampersaud et al. (2005), Adolphus et al. (2013), and Hoyland et al. (2009), which highlighted the cognitive benefits of breakfast, including better attention, memory, and overall learning performance. The SEMAGI study reinforces the notion that breakfast positively influences cognitive function, as demonstrated by the improved focus, reduced lethargy, and increased classroom engagement among children post-intervention. Additionally, the results align with research by Luthfillah & Aryanto (2022) and Al-Faida (2021), who emphasized the role of breakfast in maintaining blood glucose levels, which is essential for cognitive performance. The study also echoes findings from Mustikowati et al. (2022) and Putri Yuniarsih (2021), which stressed that skipping breakfast leads to decreased energy availability, ultimately affecting concentration and learning outcomes.

CONCLUSION

While the SEMAGI study supports existing literature, it also provides new insights by contextualizing the breakfast program within an Indonesian setting. Previous research was mostly conducted in Western contexts, making the SEMAGI study a valuable addition to understanding how cultural and habitual factors influence breakfast consumption and learning concentration. Furthermore, the SEMAGI Programme's structured intervention approach, focusing on breakfast habituation, distinguishes it from prior studies, which primarily observed general breakfast habits rather than implementing targeted programs. In conclusion, the SEMAGI study substantiates earlier research by demonstrating the tangible benefits of breakfast on learning concentration in early childhood. It also extends prior findings by providing empirical data on a structured breakfast program within an Indonesian educational setting, highlighting the need for culturally tailored interventions to promote healthy breakfast habits among young learners.

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