

# “WILL ACTIVE LEARNING EXPERIENCE MAKE YOU BETTER?” THE EFFECT OF ACTIVE LEARNING ON GENERATION Z’S SELF- EFFICACY, SELF-ESTEEM, AND FOOD CHOICE WISENESS AT SCHOOL

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## ABSTRACT

Reaching the age of adolescence, children need sufficient nutrients to grow rightly. Nevertheless, dietary habit in children has been extensively found to be ill-considered as many of them have not been able to distinguish nutritional ingredients in food. Mastering nutrition and growing a habit of healthy eating is imperative regarding their better future. This research aimed to examine whether a particular learning method (active vs. passive) would lead to wiser food choices, better self-efficacy, and higher self-esteem. The study case took the secondary students in LabSchool, Jakarta in 2018. Experimental research with a factorial design is employed in the research design. The experiment involved 227 samples of Generation Z. One group was assigned to a hands-on cooking class model (active learning) while the other half as the control group was assigned to a cooking demonstration (passive learning) class model. The result of this research implied that students who are exposed to hands-on cooking classes (active learning) show a healthier shift in their wiseness towards preferring healthy food. The limitation of the study was time and resources. It is suggested in that the future the researcher may extend the experiment’s duration and give more variations of samples to comprehend larger knowledge.

**Keywords:** *active learning, dietary habit, factorial design, hands-on cooking*

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## INTRODUCTION

Reaching the age of adolescence, Generation Z needs to have sufficient nutrients to grow perfectly (Hasan & Ocviyanti, 2015). There are still many generations of Z who do not have adequate nutrition (Nirmala & Pramono, 2017) Balanced nutrition can have a positive impact on both their physiological and psychological development. Academic success in school and character development are also strongly influenced by the nutritional adequacy of their age (Neumark-Sztainer et al., 1997). Children who have sufficient nutrition are more likely to achieve higher in both social and academic life than those who do not have sufficient nutrition intake (Taras, 2005). Balanced Nutrition can be obtained through good choices of food consumption. Generation Z consumes 35% of their daily food intake at school without direct parental supervision (Briefel et al., 2009). If the choice of food they consume at school is not appropriate, it will adversely affect their long-term health conditions. Children should be wise in choosing their own food choice.

There are many ways that Gen Z can adopt Wiseness in Food Choice. Knowing nutrition can help a person understand what is good and what is not for their wellness. However, research has shown that when dealing with children, active cooking experiences combined with nutrition knowledge instead of solely theoretical nutrition knowledge are more effective in changing dietary behavior (Caraher et al., 1999; Liquori et al., 1998). (Caraher, Dixon, Lang, & Carr Hill, 1999).

The knowledge and experience in understanding of food choice and nutrition can be obtained through the mastery of cooking skills (Anderson et al., 2002). There are a few ways to deliver cooking skills. Mothers and cooking classes are the most important sources to acquire cooking skills (Caraher et al., 1999). Conducting cooking classes using the Active Learning Method (ALM) is proven to have more impact on the student's development of cooking skills and is linked to the improvement of their food choice (Levy & Auld, 2004). Having proven to be effective in the field of formal education such as health and engineering, Active Learning has also been proven to be effective in delivering nonformal education such as cooking skills. Being different from the more traditional approach of learning (Passive Learning), the Active Learning Method requires students to be in the spotlight/student-centric. Students are encouraged to be actively engaged instead of passively learning (King, 1993), while the teacher gives the lecture in front of the class. In the context of cooking classes, an active learning method can be incorporated by letting the students engage through a ‘hands-on’ approach. The research that was conducted by Focus on Food: Development of the Cooking with Kids Experiential Nutrition Education Curriculum Lynn M. Walters, MS; Jane E. Stacey, BS suggested that those who attend cooking classes that adopt the ALM are more likely to retain the healthy behavior and are proven to experience beneficial health condition such as weight loss and stable level of cholesterol and blood sugar. Hands-on experience with food is an engaging and effective strategy to teach healthful eating behaviors (Walters & Stacey, 2009). Having sufficient knowledge and understanding of healthy food choices and nutrition are proven to be beneficial to one’s long-term health-related choices and behavior (Ternier, 2010).

Being healthy and having balanced nutrition is also closely linked to student’s academic achievement (Neumark-Sztainer et al., 1997). One of the concepts that can also predict academic achievement and many other successes in life is Self-Efficacy (Bandura, 1986). defined Self Efficacy as "People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances". Because of the significance of the effect that Self-efficacy brings to the shaping of success, in determining the recipe for success, several psychologists put the factor of self-efficacy above the factor of talent (Akhtar, 2008). In a school setting, students who possess a feeling of confidence in his or her skills will engage deeper in processing the lecture that is being given during the learning process which then leads to a better understanding of the material (Mayer, 2008). ALM-endorsed Cooking Classes incorporate Discussion Groups, Practice by Doing, and Teach Others all at the same time. Using that kind of approach promotes the mastery of content (Bonwell & Eison, 1991) which is the core source of Self-Efficacy. Mastery experience provides the biggest impact on the building of one’s self-efficacy (Bandura, 1986). Completing a task will raise one’s self-efficacy on the matter. Overcoming obstacles through persistence and effort will grant a person with a resilient sense of efficacy. The second source of Self-Efficacy is through vicarious experiences. Vicarious Experience comes from observing the people around us, seeing people that we consider are similar to us, increases our belief in our ability to master the skills that are required to finish that task (Bandura, 1986). ALM supports students to work together and share ideas. In that process, students can observe each other and gain the Vicarious Experience. In having a healthy and accurate level of self-efficacy, students will also tend to be more engaged and active in the classroom therefore resulting in better academic results (Linnenbrink & Pintrich, 2003).

The other important variable in the development of character building in adolescence is Self-esteem. Evidently, through research conducted by Radenbach in 1991, Self-esteem has an important role in the formation of adolescent character, social life, and academic success. Born as digital natives, the generation is exposed to the internet and social media from an early age. Gen Z needs to be equipped with high Self-esteem to be able to cope with the possibility of self-esteem-threatening impulses that they can find on the internet. The development of self-esteem is considered one of the most important developmental processes of adolescence (Sirin & Rogers-Sirin, 2004). Having a healthy body, self-esteem, and self-efficacy is important not only for their adolescent years but also for the future.

The research will test the difference between the group who is exposed to the ALM intervention and the group who is exposed to the Passive Learning Method in the context of their Food Choice Wiseness, self-esteem, and Self-efficacy.

This research is inspired by the previous research written by Joshua Levy, MS and Garry Auld, Ph.D., RD titled “Cooking Classes Outperform Cooking Demonstrations for College Sophomores” which examines the best learning method to influence college sophomore’s dietary behavior through cooking skills delivery. This research will adopt the experimental research method that is being used in Levy’s research. Levy’s research suggests that the intervention group experienced more statistically significant gains in attitudes and appeared to have a better pattern of gains in cooking-related knowledge and behaviors.

Previous research by Scott Freeman (2013) found that Active learning increases student performance in the context of science, engineering, and mathematics. The result of his research suggests that student performance increased when exposed to active learning compared with lecturing. Freeman revealed that students who participate in the typical course (passive learning) own a possibility of 1.5 times failures compared to students who discover their learning through active learning classes. Tatang Muttaqin also researched active learning and cooperative learning using student samples from a primary school in Australia. Muttaqin concluded that there is a positive effect on students’ self-esteem that was caused by exposure to cooperative learning.

The effect of Active Learning is also assessed in (Fook et al., 2015) research on Self Efficacy among students in higher education. Fook proved that in a higher education setting, Active Learning also has a positive influence on the student’s Self Efficacy. The effectiveness of the Active Learning method, which might come in the form of hands-on cooking classes plus nutrition-related understanding, was proven to enhance dietary behavior rather than merely theoretical comprehension. The fact was stated by (Caraher et al., 1999) in their opus: *The British Food Journal*.

Despite the potential and previous successful studies in Active Learning towards health behavior and self-concepts in students from various locations, limited research is found using Indonesian students as samples. This research will use actual Indonesian seventh-grade students who are a part of the Generation Z cohort as the samples.

Therefore, this study will address the question of whether certain learning methods (active vs. passive) would lead to wiser food choices, better self-efficacy, and higher self-esteem. This study will examine the effects of different methods of cooking skills delivery (active learning vs. passive learning) on Indonesian Generation Z student’s food choices at school, self-efficacy, and self-esteem.

## **METHOD**

### **Proposed Method and Approach**

Based on the approach, research can be divided into two groups: qualitative research and quantitative research. The quantitative research approach is used when the researcher starts with a theory or a hypothesis and then intends to test the hypothesis (Benz & Newman, 2008). Causal research is a study aimed at finding or proving a causal relationship (Zikmund and Babin, 2013). Based on the explanation, this research will be defined as quantitative research with a causal research design.

### **Research Design and Variables**

Due to the causal approach of this research, one of the preferable data collection methods is through experiment. Furthermore, this research is an experimental research with a factorial design used as its research design. Sekaran (2003) explained in her book *Research Method for Business - A Skill Building Approach* that an experimental group that is established without a control group might be given a pretest, presented with a treatment, and afterward given a posttest to quantify the impacts of the treatment (Sekaran, 2003).

There were six experimental groups from grade 7 which consisted of 227 students that were divided into six class A, B, C, D, E, and F in SMP Labschool Kebayoran which then divided into two groups that each consisted of three classes, where the first group was given the treatment of Active Learning while the other group experienced the treatment of Passive Learning. The Active Learning Group engaged in a ‘Hands On’ cooking class where they directly cooked their food whilst being directed by the lecturers. The Passive Learning group engaged in a Demo Class where they watched the lecturer cook in front of the class.

For the Active Learning classes, each class consisted of 38 students that were divided into six groups where they worked cooperatively in each active learning class. The students were given a pretest before the treatment to test the validity and reliability of the measurements and were given a posttest after every treatment to validate the cause of the independent variable.

### **Data Analysis**

This research uses Analysis of Variance (ANOVA) as the data analysis method. Specifically, the one-way ANOVA. ANOVA is an analysis that involves examining the effect of a variable treatment on the interval variable as a dependent variable. It is a hypothesis-testing technique to prove whether there is a significant difference between two or more groups (Zikmund, Babin, Car, Griffin; 2003).

ANOVA analysis is an analytical method used to measure the effect of an independent variable on the dependent variable, through different tests. Most experimental studies involving more than 1 independent variable will use ANOVA's n-way analysis as a statistical method to test the significance of a variable's effect on other variables.

## **RESULTS AND DISCUSSION**

### **H1: Active Learning Towards Self-Esteem**

The result of this research suggests that respondents who experienced active learning cooking classes proved to have a significantly positive effect on their self-esteem instead to those who experienced passive learning cooking classes. The acceptance of this hypothesis

proves the positive influence of ALM on Indonesian Generation Z as student’s self-esteem. This result is also aligned with the research done by Tatang Muttaqin (2016) that proved that Cooperative Learning which is the subset of Active Learning has a positive effect on seventh-grade students in Beckenham Primary School, Australia. (Porter et al., 2012) suggest that the key to mental health is the combination of achievement of knowledge and improvement of self-esteem. The social interaction that befalls during the process of cooperative learning can have positive effects on students’ self-esteem and students’ perception of their classroom environment (Sharan, 1980). Students’ self-esteem is mostly a function of how successful they are in school, regardless of all other variables, even disadvantaging home backgrounds (Chapman et al. 1990, in Porter, 2000).

Muttaqin proposed the cooperative learning method to be applied in Indonesian schools as it may develop students’ attitudes and students’ self-esteem. Active Learning also promotes peer-to-peer teaching. Each student can share experiences as well as tutor each other on the collective subject. As aforementioned earlier, explaining something to others may improve one’s understanding (Webb, 1989). Furthermore, cooperative learning might also enhance self-concept, race relations, acceptance of disabled students, and add more enjoyment regarding the school (Slavin 1990).

## **H2: Active Learning Towards Food Choice Wiseness**

The result of this research suggests that respondents who experienced active learning cooking classes proved to be wiser in their choice of food instead of those who experienced passive learning cooking classes. This is shown by the descriptive analysis that shows the increasing mean in the Food Choice questionnaire item number two (3.56 – 3.77) that states which describes how much the samples view Nutrition as an important variable when choosing food. The active learning group chose better food and developed better judgment towards the choice of food that they consumed at school. A supporting survey has been conducted one month after the intervention. Based on the interview that was conducted in the Active Learning class one month after the intervention, out of 15 students that were interviewed, 7 of them who used to not bring food from home have now brought home-cooked school lunches instead of buying food from the vendors. This study revealed that there are three main reasons why students are urged to bring lunch boxes instead of buying a meal from the vendors: (1) more economical, (2) more healthy and clean, and (3) Time-saving. These insights show the results of the values inculcated through the cooking class interventions they experienced last month influenced their behavior in their wiseness of choosing food. The argument is also supported by the findings that have been found in interviews among Active Learning students.

“After the lesson, I became more attentive to the food in the canteen and its cleanliness. I think the food from home is cleaner. By bringing lunch from home, it also decreases the amount of eating time during lunch breaks.”

- Gentza Rahandra, 11 years old.

“Now I bring homemade lunches. by bringing my homemade lunches to be more efficient and healthy. Mama now sends lunch via Gojek every second of break time. So the food is still warm and I do not have to carry heavy all day.”

-Mizra Mula Althaf, 11 years old.

Knowledge about healthier food options began to grow and proved to have a good impact on their food wiseness. This result is aligned with previous research done by (Levy & and Auld, 2004) who proved that the intervention (Hands-On Cooking Class) had a steady implication in gaining attitudes as students enhanced their cooking–related behavior and nutritional consciousness. A steady implication in gaining attitudes emerged as students enhanced their cooking–related behavior and nutritional consciousness. Similar to those that occurred in Levy's research, both groups experienced an increase in cooking-related knowledge and behavior, but the Demo Cooking Class group (passive learning) received less impact than those who attended the Hands-On Cooking Class (Active Learning). That proves that Active Learning is more effective in delivering cooking skills and shifting healthful behavior and it is aligned with the statement by (Caraher et al., 1999) that claims that experiences of active cooking blended with the cognition of nutrition is more effective in altering dietary behavior rather than solely theoretical nutrition cognition

The acquaintance with cooking activities, the skill to develop nutritional consciousness, and the capability to arrange meals, can affect the dietary quality. Competence in cooking might enable a consumer to extend their food choice better (Larson et al., 2006). Thus, being able to cook increases the possibility of having a healthier future for Generation Z.

### **H3: Active Learning Towards Self-Efficacy**

The result of this research suggests that respondents who experienced active learning cooking classes proved to have an insignificant effect on their self-efficacy with those who experienced passive learning cooking classes. Therefore, this hypothesis is rejected. There is no existing journal that supports this finding. The writer interviewed to find the root of the rejection and found that the hypothesis is not proven because cooking is best learned from experience (Caraher et al., 1999). Due to the limited time in this research, the mastery experience experienced by the respondents is still lacking. According to Bandura, the main source of self-efficacy is Mastery Experience. Due to the limitation of time in this research, the chance for the students to experience mastering the skills is also limited.

The writer argues that due to the lack of mastery experience, the efficacy was not significantly affected. The argument is also supported by the findings that have been found in interviews among the Active Learning students which suggest that the students are not yet confident in their cooking skills if are told to engage in their cooking activities because they feel they need more time to learn and practice with the help of teachers before they cook by themselves.

This is an example of a student coming from a class exposed to Active Learning methods explaining why he is not confident in his abilities.

“The first time I learned to cook was when you were teaching here. You only teach four times here. I think I have to try to cook with you some more before I cook by myself.”

(Aryabima, 11 years old).

Out of 15 Active Learning students that were interviewed about the matter, 8 of them answered a similar reason on why are they not confident in their skill while the other claimed that they have high efficacy in their skill.

From the insight gathered from the interviews, we can conclude that the lack of mastery experience is the source of the insignificance. Referring to the previous chapter, due to the limited time in this research, the mastery experience that is experienced by the respondents is still lacking. According to Bandura, the experience of mastery of skill is the main source of self-efficacy, so it can be concluded that the difference in mean in the variable of self-efficacy between Active Learning and Passive Learning classes is not significant because of the lack of mastery experience experienced by respondents.

## **CONCLUSION**

Active Learning method has been proven to be beneficial in many fields of learning. In the field of cooking, learning how to cook using the method of active learning is proven to be more effective than using the method of passive learning. Students who are exposed to hands-on cooking classes shows a healthier shift in their wiseness towards choosing healthy food. 13 out of 38 students in one of the Active Learning class started to bring their homemade lunches a month after the intervention. Active Learning also has a positive impact on the student’s self-esteem. Making them more confident therefore mentally more stable (Atherton et al., 2016).

Unlike other results in previous research, in this experiment, the students who are exposed to active learning do not experience a significant difference in behavior in the context of self-efficacy compared to the students who are exposed to Passive Learning. This is due to the lack of mastery experience which is the main source of self-efficacy due to the limitation of time that this experiment has.

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