Students' Level of Attention Span in Cookery: Basis for Proposed Innovative Teaching Strategies

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Abstract

Aim: This study aimed to determine the level of attention span in Cookery of Grade 10 students.

Methodology: This study used a descriptive, evaluative design using a survey checklist to determine the relationship between the variables. This study was conducted at the largest public high school in Sariaya, Quezon with 162 respondents. Stratified random sampling was employed to ensure that each section of the population receives proper representation within a sample.

Results: The level of attention span of the learners in Cookery was less attentive after obtaining the grand weighted arithmetic mean of 2.02. The following indicators obtained average weighted arithmetic means: In activity 1.99, analysis 2.12, abstraction 2.02, and application 1.93. All indicators obtained a verbal description of less attentive. In terms of age, there is no significant difference in the students' level of attention span. Additionally, in terms of sex, there is a significant difference in the students' level of attention span.

Conclusion: The attention span of Grade 10 students in Cookery was less attentive during activity, analysis, abstraction, and application. Further, there is no significant difference in the students' level of attention when grouped according to age. Moreover, there is a significant difference in students' level of attention span regarding sex.

Keywords: attention span, innovative teaching strategies, Cookery

INTRODUCTION

As the world is changing at an exponential rate, teachers struggle with maintaining the attention span of their students (Regala, 2023; Salendab & Dapitan, 2021a; Salendab, 2021; Salendab, 2023). Over the coming decade, all will be called upon to do something about the many individuals who have trouble learning and performing effectively at school. In responding to this call, it will be essential to have a broad understanding of what causes attention problems and what schools need to do to address such problems (Delgado & Kassim, 2019; Sanchez, et al., 2022).

Statistics from the National Center for Biotechnology Information, US, as stated by Brenner (2014), show that students' attention spans were twelve seconds in 2000 and eight seconds in 2013. Although classes endure between 50 and 90 minutes, some psychologists assert that the average students' attention span is only about 10 to 15 minutes. The amount of student attention fluctuates greatly depending on motivation, feelings, enjoyment, and the time of day. The teachers constantly try their best to keep students interested and focused, whether through examples or visuals in class or by requiring student participation.

D'Silva (2016) posited that Singapore Marketers must rethink as research shows that attention spans are shrinking in Southeast Asia. In evidence, the researchers cited a meta-analysis of cross-media studies done by Brown in Asian markets, which revealed that Indonesians spend 33 minutes more per day on their mobiles than they do watch TV, a trend that is reflected in much of Southeast Asia. Further, according to data from the Statistic Brain Research Institute, the average human attention span has decreased by 33% since 2000 to just 8.25 seconds in 2015. Coincidentally, ten seconds is the ideal length for video ads on Facebook – significantly shorter than a 30-second TV commercial.

Valeriano (2016) asserted that when it comes to entertainment, millennials in the Philippines are usually seen spending time online and watching YouTube videos. Millennials usually have the latest apps, watch the newest TV series, and are into the latest hits.

In the Philippines, a teacher typically wakes up early to prepare for the day's lesson. They spend six to seven hours talking in front of a classroom full of children with short attention spans. Unlike students, a teacher's day does not end when the last bell rings. After-school hours, even at home, are spent on papers, exams to check, and effective lesson plans to prepare to increase their learners' attention span and engagement (Natividad, 2016; Amihan & Sanchez, 2023; Dizon & Sanchez, 2020; Muńoz & Sanchez, 2023; Salendab & Akmad, 2023; Salendab & Cogo, 2022).

Lutucan National High School is located at Brgy. Lutucan Malabag, Sariaya, Quezon, a school in a municipality with a huge student population that can lead to students' distraction and out of focus. According to the TLE teacher at Lutucan Integrated National High School, students' attention span varies depending on what teaching approach she uses. The students can only focus on the first 10 minutes of discussion during the lecture, but when technology is integrated into the lesson, interest and attention increase.

Grieco (1987), as cited by Philp (2008), pointed out that twenty minutes is probably the maximum time that most people can stay in a positive learning state without a change of stimulus. Above all, the first and most important advantage of interactive teaching methods is the ability of the educator to assess whether or not the students are paying attention. The new classroom environment imposes interactivity as the only technique that enables students to participate actively in the learning process (Burns, 2015).

Motivating students to learn is one area that all educators are constantly trying to achieve (Salendab & Dapitan, 2020; Sanchez, 2023a; Sanchez & Sarmiento, 2020). Many teachers who do not have today's technology at their fingertips and are not privileged to work in schools equipped with technological resources are often at their wit's end to motivate learners. Technology can increase student motivation and class attendance (Brand, 2010).

Lucas (2009) agreed that when it comes to attention, students have short attention spans, especially when things become boring. Additionally, during sessions with lectures and lengthy discussions in far-flung areas, students listen to them only in the first 15 minutes.

Carrido (2014), as cited by the Department of Education Camarines Norte (2014), stated that teachers would need to utilize more attractive alternatives and innovations in competing for student attention to let them focus and perform well in class. DepEd Order No. 42, s. 2016 noted that the teacher should provide guidelines for preparing daily lessons considering students' attention spans and learning styles.

The researchers were triggered by the fact that today's generation of students are inattentive, distracted, and unfocused in teaching and learning. Thus, the study's main objective was to determine the level of the attention span of Grade 10 students in Cookery that would serve as a basis for developing innovative teaching strategies.

Research Questions

This study aimed to gather information about the attention span of Grade 10 Cookery students in Lutucan Integrated National High School (LINHS). Specifically, it sought to answer the following research questions:

- 1. What is the demographic profile of the Grade 10 students of LINHS in terms of:
 - 1.1. age; and
 - 1.2. sex?
- 2. What is the respondents' level of attention span in Cookery class during:
 - 2.1. activity;
 - 2.2. analysis;
 - 2.3. abstraction; and
 - 2.4. application?
- 3. Is there a significant difference in the respondents' level of attention span when grouped according to the demographic profile?
- 4. What innovative teaching strategies can be proposed to LINHS to improve the students' level of attention span during Cookery class?

Hypothesis

Given the stated research problem, the following hypotheses were tested on a 0.05 level of significance: Hypothesis 1: There is no significant difference in the students' level of attention span when grouped according to age.

Hypothesis 2: There is no significant difference in the students' level of attention span when grouped according to sex.

METHODOLOGY

Research Design

This study used a quantitative approach to determine the relationship between one thing and another within a population. Specifically, this study employed the descriptive, evaluative method of research to appraise the current study's worthiness and to describe and evaluate the level of the attention span of the Grade 10 respondents in Cookery.

Population and Sampling

This study was conducted at the largest public high school in Sariaya, Quezon with 162 respondents. Stratified random sampling was used to ensure that each section of the population received proper representation within the sample. This technique was helpful to the researchers because it provided the presence of the key subgroup within the sample.

Instrument

The main instrument used by the researchers in this study was a semi-structured questionnaire. The questionnaire was divided into two parts. The first part was in the form of a checklist which included the demographic profile of the respondents. The second part was in the form of checklist grouped into four categories, namely: (a) activity; (b) analysis; (c) abstraction; and (d) application. Taking everything into account, the four categories in the second part were composed of ten (10) items and the participants answered each item by putting a check mark.

Data Collection

After the validation of the instrument, the researchers sought the permission of the authority to allow the researchers to conduct the study. Upon approval, the researchers started to administer the questionnaire to the respondents. After retrieving the instrument, the researchers tabulated and processed the data.

Treatment of Data

Statistical analysis was used to analyze the demographic profile of the respondents, determine the level of students' attention span in Cookery class, and to confirm if there is a significant difference in the respondents' level of attention span when grouped according to their demographic profile.

Ethical Considerations

To protect all individuals and organizations engaged in the study's conduct, the researchers ensured that all research protocols, including ethics in research were followed.

RESULTS and DISCUSSION

The average age of the learners was 15-17 years old, with 150 students or 93% of the respondents. On the other hand, 12 students, or 7% of the respondents, were 18 years old and above age bracket. The demographic profile displayed that age of the respondents in Grade 10 was precise to their year level, which was 15-17 years old.

Stewart (2014) asserted that digital classroom tools like computers, tablets, and smartphones offer exciting opportunities to deepen learning through creativity, collaboration, and connection, but those devices can also be distracting to students who are 15 to 17 years of age, As cited by Stewart (2014), Goleman stated, "The attentional circuitry needs to have the experience of sustained episodes of concentration -reading the text, understanding and listening to what the teacher is saying -to build the mental models that create someone who is well educated."

As to the distribution of the respondents by sex, 122 students, or 69% of the respondents, were female. On the other hand, 50 students, or 31% of the respondents were male. This showed that the majority of the respondents were female.

Level of Attention Span in Cookery Class of the Grade 10 students

Considering that students are more actively engaged at the beginning of the class, aside from the first few minutes when they settle in, it may be more effective to begin classes with lectures and shift to activity about 20-25 minutes into the class period. Table 1 demonstrates the students' level of attention span in Cookery during the activity.

Students' Level of Attention Span in Cookery During Activity

	Activity	Weighted Mean	Verbal Description	Rank
During t	he activity, I can pay attention when			
1.	The teacher makes the whole class an active participant.	2.28	Less Attentive	1
2.	There are situations relevant to Cookery.	2.09	Less Attentive	2
3.	The teacher promotes easy and possible routines that are appropriate in Cookery.	1.91	Less Attentive	7
4.	There are learning opportunities that allow me to participate in activities.	1.98	Less Attentive	5
5.	I use materials that clearly show the content of the lesson.	1.91	Less Attentive	7
6.	The teacher clarifies the learning objective/target and criteria for success.	1.91	Less Attentive	7
7.	The teacher offers different activities in cooking.	1.89	Less Attentive	9
8.	21st-century learning skills are incorporated that prepare students before the formal discussion.	1.86	Less Attentive	10
9.	The teacher helps me to motivate myself.	2.00	Less Attentive	4
10.	The teacher imposes proper discipline and is not strict in following rules.	2.04	Less Attentive	3
OVERA	LL WEIGHTED ARITHMETIC MEAN	1.99	Less Attentive	

1.00 - 1.75	Not Attentive
<i>1.76 - 2.50</i>	Less Attentive
<i>2.51 – 3.25</i>	More Attentive
<i>3.26 – 4.00</i>	Fully Attentive

Table 1 shows the respondents' level of attention span in Cookery during the activity. It was revealed in the table that all the data gathered from the responses of all Grade 10 students had generated an overall weighted mean of "1.99," which was verbally interpreted as "Less Attentive."

The first statement of the activity classification got rank 1, which obtained the highest score of "2.28" with a verbal interpretation of "Less Attentive," which expressed that students can pay attention if the teacher makes the whole class an active participant.

According to Burns (2015), the new classroom environment imposes interactivity as the only technique that enables students to participate actively in the learning process. Consistent with an article published by Stanford Teaching Commons, the student can pay more attention when the teacher incorporates active learning strategies into every component of course design.

Meanwhile, the eighth statement got the lowest mean score of "1.86" which made them hailed as rank 10, with a verbal interpretation of "Less Attentive." This shows that students can sustain their interest, attention and class participation when they experience incorporating 21st-century learning skills during the activity. These skills will help them to prepare and meet future challenges.

An article published in Oxford University Press (2013) pointed out that 21st Century skills are being taught in primary classrooms in many countries. As the world evolves toward greater interconnectedness, students are entrusted with the responsibility of building a better global society (Carvajal & Sanchez, 2023; Regala, 2022; Salendab & Dapitan, 2021b). Stansbury (2011) asserted that an excellent 21st-century educator is one who is aware of the rapidly changing technology trends; one who is in tune with the direction of the economy and future projected needs for business and industry; one who aware of the career opportunities for children in the coming years, and all of the requisite educational skills and talents necessary to allow students to position themselves to compete. Blake (2016) states that 21st-century students focus on a single activity while students commonly lose focus for under a minute before refocusing. Their ability to maintain attention diminishes throughout the class period.

Table 2 Students' Level of Attention Span in Cookery During Analysis

dents Level of Attention Span in Cookery During Analysis			
Analysis	Weighted Mean	Verbal Description	Rank
During analysis, I can pay attention when			
 There is a clear demonstration of all important points/ matters in Cookery. 	2.01	Less Attentive	7.5
Current knowledge and content of topics in Cookery are maintained.	2.01	Less Attentive	7.5
3. The lesson is designed using national standards.	1.97	Less Attentive	10
4. A variety of cooking equipment/tools utilizes properly and supports my learning.	2.13	Less Attentive	4
Content vocabulary is used appropriately.	2.16	Less Attentive	2
6. The teacher has mastery of the subject matter.	2.1	Less Attentive	5.5
7. It was updated with present trends and relevant in Cookery.	2.1	Less Attentive	5.5
8. Lessons are connected to community and society.	1.98	Less Attentive	9
The relevance of the content is quickly demonstrated into personal life.	2.15	Less Attentive	3
The teacher uses differentiated strategies that make instruction accessible to all students.	2.79	More Attentive	1
OVERALL WEIGHTED ARITHMETIC MEAN	2.12	Less Attentive	

1.00 - 1.75 Not Attentive 1.76 - 2.50 Less Attentive 2.51 - 3.25 More Attentive 3.26 - 4.00Fully Attentive

Table 2 illustrates the students' level of attention span in Cookery during analysis which yielded an overall weighted mean of "2.12" with a verbal interpretation of "Less Attentive."

As followed, the tenth statement attained the highest mean score of "2.79," which made them hailed as rank 1 with a verbal interpretation of "More Attentive." It shows that students' attention span highly depends on the differentiated strategies that can make instruction accessible to all of them. In support of this, LeRoux et al. (2009) stated that a great deal of hype had surrounded the use of differentiated instruction as an effective and successful

strategy for educating diverse students within the same setting. An exemplary teacher is not only an expert in their core academic area but has a strong foundation and use of differentiated instructional principles (Salendab & Laguda, 2023; Salendab & Sanchez, 2023; Sanchez, 2022; Sanchez, 2023b). Differentiated instruction focus on diversity, common outcomes, and student-centered. The article by Reif (2012) entitled "Educational Resource Specialist" suggested some tips for getting the students' attention by using differentiated strategies. (1) Arouse students' curiosity and anticipation. (2) Try playfulness, silliness, humor, use of props, and a bit of theatrics to get attention and peak interest. (3) Use storytelling, real-life examples, and anecdotes. (4) Capture their attention at the emotional level if possible. (5) Add a bit of mystery.

However, the third statement gained the lowest mean score of "1.97," placing them in rank 10, which was verbally interpreted as "Less Attentive." It shows that respondents' attention span level doesn't depend on whether the teacher design lesson with or without using the national standard. According to Stronge (2008), teaching is a complex activity that involves careful preparation and planning objectives and activities on a legal basis and national standards to maintain and arouse the learners' interest. Standards make the most difference in which activities the teacher will choose for their students. Students need tasks, assignments, and work that gets them to the standards, not activities that they find easy.

Table 3 Students' Level of Attention Span in Cookery During Abstraction

idents' Level of Attention Span in Cookery During Abstraction			
Abstraction	Weighted Mean	Verbal Description	Rank
During abstraction, I can pay attention when			
There are questions that are personally relevant.	2.11	Less Attentive	1
The questions promote higher-order thinking skills.	2.1	Less Attentive	2
There are integration and application of inquiry skills into learning experiences.	1.93	Less Attentive	10
The question provides meaningful learning.	2.07	Less Attentive	3
 The teacher motivates me and develops compassion and mutual respect. 	1.94	Less Attentive	8.5
 The questions develop the understanding and dealing with different situations. 	1.99	Less Attentive	7
 Concepts and ideas are connected to my prior experiences and understandings. 	2.06	Less Attentive	4
8. Past experience is related to present one.	2.01	Less Attentive	6
The question develops my critical thinking skills.	2.04	Less Attentive	5
There are techniques used to strengthen our prior knowledge and recall.	1.94	Less Attentive	8.5
OVERALL WEIGHTED ARITHMETIC MEAN	2.02	Less Attentive	

<i>1.00 - 1.75</i>	Not Attentive
<i>1.76 - 2.50</i>	Less Attentive
<i>2.51 – 3.25</i>	More Attentive
<i>3.26 – 4.00</i>	Fully Attentive

Table 3 shows the students' level of attention span in Cookery during abstraction, which got hold of "2.02" as the overall weighted mean with a verbal interpretation of "Less Attentive."

Accordingly, the first statement achieved the highest weighted mean of "2.11," which made them hailed as rank 1 was interpreted as "Less Attentive." This revealed that when there are concrete examples and personally relevant questions during the abstraction part, it can help to arouse the interest and attention of the students. In line with this, Llego (2014) stated that students who can attend to the content of lessons and when the teacher gives concrete examples learners are more likely to recall information at a later time. Students can be excited about the course when they view the class as relevant to themselves and connected to their interests and experiences (Sanchez, 2020a; Sanchez, Sanchez & Sanchez, 2023).

On the other hand, the third statement achieved the lowest weighted mean of "1.93, " placing them in rank 10, and was interpreted as "Less Attentive." This revealed that the respondents' attention span does not depend on integrating and applying inquiry skills into learning experiences. In support of this, Gordon et al. (2016) asserted that one way to overcome the hurdle is to embrace inquiry-based learning. This teaching method places students' questions, ideas, and observations at the center of the education experience. The teacher should integrate inquiry skills into learning experiences for the students to participate in the classroom actively.

Table 4 Students' Level of Attention Span in Cookery During Application

Application	Weighted Mean	Verbal Description	Rank
During application, I can pay attention when			
A fairly and equal time is provided to access all equipment during hands-on exercises in Cookery.	2.03	Less Attentive	2
Essential support is provided for students who struggle in cooking.	1.91	Less Attentive	5.5
3. My work is valued, appreciated, and used as a learning tool.	1.93	Less Attentive	4
4. The teacher encourages me to accept responsibility.	1.77	Less Attentive	9
5. The teacher gives importance to the work/output of others.	1.74	Less Attentive	10
6. Real-life situations incorporate my experiences and interests.	1.78	Less Attentive	8
7. I work with others and make collaboration while cooking.	1.96	Less Attentive	3
8. Rubrics and criteria are presented.	1.91	Less Attentive	5.5
9. Multimedia are integrated.	1.88	Less Attentive	7
10. Effective learning activities are suitable for our developmental age.	2.73	More Attentive	1
OVERALL WEIGHTED ARITHMETIC MEAN	1.93	Less Attentive	

1.00 - 1.75 Not Attentive 1.76 - 2.50 Less Attentive 2.51 - 3.25More Attentive 3.26 - 4.00Fully Attentive

Table 4 shows the students' level of attention span in Cookery during application which got hold of "1.93" as the overall weighted mean with a verbal description of "Less Attentive."

The tenth statement achieved the highest weighted mean of "2.73," which got the first rank and was interpreted as "Less Attentive." This revealed that respondents' level of attention span depends on the activities suitable for their developmental age. Consistent with Head Start of Lane Country's Policy and Procedure and Manual (2017), developmentally appropriate, safe materials and equipment should be available to all students. Learning activities that project heterogeneous racial, sexual, and age attributes are selected and used. Learning activities should reflect the diversity in society and avoid stereotyping of any group. Activities are selected to emphasize concrete, experimental learning and to achieve the following goals: (1) foster positive (2) self-concept (3) develop social goals, (4) encourage children to think, reason, question, and experiment, including numeracy skills (5) encourage language development and literacy skills in English and the child's home language, as needed (6) enhance physical development and skills (7) encourage and demonstrate sound health, safety, and nutritional practices (8) encourage creative expression and appreciation of the arts (9) respect cultural diversity

However, the fifth statement gained the lowest mean score of "1.74" with a verbal interpretation of "Less Attentive" and ranked 10. This shows that respondents' attention span does not depend if the teacher gives importance to their work or output. In contrast, Kern et al. (2007) recognized students' needs for self-determination and autonomy and provided opportunities for choice and control. Teacher praise is one tool that can be a powerful motivator for students.

The significant difference in the level of students' attention span in Cookery when grouped according to the demographic profile

The following data describes the significant difference between the students' attention span level and demographic profile. Table 5 presents the significant difference between the students' attention span level and their ages.

Table 5 Test of Significance in Students' Level of Attention Span when Grouped According to Age

z critical value	z value	Level of Significance
1.960	1.143	0.05

Since the computed z value of "1.143" is less than the z critical value of "1.960" at a 0.05 level of significance, the null hypothesis should be accepted. There is no significant difference in students' level of attention span when grouped according to age.

This means that the age of the respondents has no effect in their level of attention span. In support with this, Bhat (2017) confirmed that technology has significantly lowered the average attention span of teens ages 15 to 18. The average attention span of people was 8 seconds in 2013. This is compared to the average attention span of 12 seconds in 2000. Statistics suggest that the average attention span of a goldfish is 9 seconds, which indicates that the average person had an attention span shorter than that of a goldfish in 2013.

In contrast, children between three and five years of age have limited attention spans. A three-year-old has the most difficulty with activities that involve sitting and listening. They need engaging and motivating activities to keep their interest. On the other hand, a four or five-year-old child can sit and listen to a story or be completing a hands-on activity for 10-15 minutes. If the activity exceeds 10-15 minutes, four and five-year-old children will also get fidgety and want to move on to something else.

The following data illustrates the significant difference between students' levels of attention span when grouped according to their demographic profile. Specifically, table 6 shows a significant difference between students' attention span and sex.

Table 6 Test of Significance in Students' Level of Attention Span when Grouped According to Sex

z critical value	z value	Level of Significance
1.960	2.547	0.05

Since the computed z value of "2.547" is greater than the t critical value of "1.960" at 0.05 level of significance, the null hypothesis should be rejected. Thus, there is a significant difference in students' level of attention span when grouped according to sex.

This means that the sex of the respondents has an effect on their level of attention span.

According to Riley et al. (2016), gender differences in cognition have been a source of curiosity and conflict for decades. Sustained attentional control is the ability to maintain selective attention to a task for a prolonged period of time while resisting internal and external distractions. Sustained attentional control is important to daily functioning and has been associated with lapses of attention in everyday life, such as academic performance and driving ability.

Gender differences in sustained attentional control are incompletely characterized. Some studies show no effect of gender on sustained attention, while others suggest that men may have greater vigilance and women may have enhanced inhibitory control. Consistent with a female advantage in inhibitory control, on a continuous performance task, women have been shown to be less impulsive, slower, and more variable than men.

Conclusions

In terms of age, 150 students, or 93% of the respondents, were 15-17 years of age. On the other hand, 12 students, or 7% of the respondents belonged to 18 years old and above age bracket. The demographic profile displayed that the age of the respondents in grade 10 was precise to their year level, which was 15-17 years old.

In terms of sex, 112 students, or 69% of the respondents were female. On the other hand, 50 out of 162, or 31% of the respondents were male. This shows that the majority of the respondents were female.

The level of attention span of the learners in Cookery was less attentive after obtaining the grand weighted arithmetic mean of 2.02. The following indicators obtained the following average weighted arithmetic means: an activity with 1.99, analysis with 2.12, abstraction with 2.02, and application with 1.93. All indicators obtained a verbal description of less attentive.

Further, the data gathered confirmed that there is no significant difference in students' level of attention span when grouped according to age. Thus, the null hypothesis should be accepted. Furthermore, the data gathered established that the null hypothesis should be rejected. Therefore, there is a significant difference in students' level of attention span when grouped according to sex.

Recommendations

The following recommendations were offered by the researchers based on the findings and conclusions of the study.

To the teachers:

- 1. Integrate the application of inquiry skills into learning experiences to arouse the interest and attention of the
- 2. Integrate a variety of learning resources with classroom instruction to increase learning options.
- Design and implement standards-based courses, lessons, or units using state and national standards.
- 4. Give importance to the work and output of students.
- Effectively incorporate 21st Century Learning Skills that prepare students to meet future challenges.
- Use different strategies and approaches to the learners with different characteristics suitable for the needs and demands of the 21st Century.

To the students:

- 1. Know the importance of paying attention to the teaching and learning process.
- 2. Actively participate in the classroom setting to acquire lifelong and meaningful learning.

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