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Students' Perception, Attitude, and Acceptance towards Live Streaming Demonstration Cooking via Google Meet in the Kitchen Class

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Abstract

During the COVID-19 pandemic, online learning emerged as a crucial alternative for schools, colleges, and universities. This study specifically focused on the use of live streaming for demonstration cooking via Google Meet in a kitchen class. Therefore, this study's aims to identify the students' perception, attitude, and acceptance towards live streaming demonstration cooking via Google Meet in the kitchen class for DTA20014 Basic Food Preparation course. Quantitative research using survey method will conduct in this study using perception, attitude, and acceptance instruments. Thirty respondents in this study selected from Politeknik METrO Kuala Lumpur which is first year kitchen students. The instruments were adapted from Alqahtani et al., Lee et al., and Van Wart et al., and modified according to current content. Purposive sampling technique that indicates to achieve research objective using SPSS software were used for data analysis to produce a descriptive analysis. The findings show mean score high for students' perception, attitude, and acceptance towards live streaming demonstration cooking via google meet in the kitchen class. The positive experience among participants in the live streaming demonstration cooking class via Google Meet compared to conventional method. The enjoyment, positive overall impression, active engagement with the lecturer, instructor responsiveness, effective explanation, and high comfort level collectively contribute to a favorable virtual learning environment. In summary, the study conducted at Politeknik METrO Kuala Lumpur attests to a positive experience among first-year polytechnic kitchen students in live streaming demonstration cooking via Google Meet, indicating the acceptance of this online learning approach. The findings suggest that, beyond the pandemic, institutions could benefit from incorporating virtual platforms for practical courses, emphasizing the need for ongoing refinement in instructional strategies to enhance clarity, responsiveness, and explanation, thereby ensuring a favorable and engaging online learning environment.

Keywords **:** *Acceptance; Attitude; Google Meet; Live Streaming; Perception*

I. INTRODUCTION

Amid the unprecedented challenges brought about by the global COVID-19 pandemic in 2020, the educational realm experienced a seismic shift, necessitating a fundamental re-evaluation of traditional teaching paradigms. The conventional face-to-face learning that had long been the cornerstone of educational practices gave way to an accelerated adoption of online formats, compelling institutions worldwide to reimagine the delivery of academic content. At the forefront of this transformative wave was Politeknik METrO Kuala Lumpur (PMKL), an institution quick to recognize the imperative of adaptability in ensuring uninterrupted learning experiences for its student body.

In response to the exigencies of the pandemic, PMKL swiftly implemented online learning mechanisms, leveraging the Curriculum Information Document Online System (CIDOS) to facilitate theoretical courses. This technological integration allowed students seamless access to essential course materials, notes, and information,

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marking a pivotal shift in how educational content was disseminated. However, despite the swift embrace of digital platforms for theoretical instruction, the practical courses at PMKL remained anchored in the traditional workshop settings, highlighting the initial challenges [1] in seamlessly translating hands-on learning experiences to the virtual realm.

PMKL's proactive approach in adopting online learning strategies reflects not only a commitment to educational continuity but also a recognition of the evolving landscape of pedagogy in the face of unforeseen disruptions. As the pandemic necessitated an immediate response, this adaptive transition laid the groundwork for a broader exploration of innovative teaching methodologies [2] setting the stage for the institution's exploration of alternative approaches, such as the integration of live streaming for demonstration cooking via Google Meet in practical courses.

A. Problem Statement

The implementation of online teaching and learning techniques (PdPT) has been totally utilized in an attempt to guarantee that the PdP procedure, particularly practical classes, can be carried out. The Movement Control Order (MCO) prevented face-to-face PdP from being implemented as usual, which prevented PMKL students from attending lectures starting from 18 Mac 2020. As a result, online teaching and learning, including hands-on and practical classes, took the role of face-to-face PdP. Additionally, by referring the *Garis panduan Pelaksanaan Bekerja Dari Rumah - Pekeliling Perkhidmatan bilangan 5 tahun 2020* from Jabatan Perkhidmatan Awam Malaysia [3] PMKL made use of PdPT to guarantee that the curriculum could be taught correctly. However, while putting the PdP approach into practice, teaching staff also face difficulties and hurdles [4] particularly for practical courses. Students at PMKL encounter a variety of issues and difficulties, such as inconsistent internet connectivity, inadequate computer and smartphone resources, and an undesirable learning atmosphere. Where lecturers also encounter issues with their willingness to use cutting-edge technology, reliable internet access, and the amount of time allocated for preparing cooking ingredients. The main purpose is to ensure that the PdPT process continues despite not being able to meet with students face to face. In this study, live streaming for demonstration cooking via Google Meet in a kitchen class has been used as a new approach for PdPT. Therefore, a study needs to be conducted to identify the level of students' perception towards live streaming demonstration cooking via Google Meet in the kitchen class for DTA20014 Basic Food Preparation course. In particular, there are three research objectives:

i. To identify the mean score of students' perception towards live streaming demonstration cooking via Google Meet in the kitchen class.
ii. To identify the mean score of students' attitude towards live streaming demonstration cooking via Google Meet in the kitchen class.
iii. To identify the mean score of students' acceptance towards live streaming demonstration cooking via Google Meet in the kitchen class.

II. LITERATURE REVIEW

A. Students' Perception

In the educational system, the opinions of students are the most important. Online learning might have a role in the future educational system, but only if students are open to it will it be successfully implemented. The comprehension, attitude, and mindset of students about online classrooms are critical components in online education. To boost the students' enthusiasm to learn, it is essential to provide them with opportunities for outside connection with the teachers and institution. Because of its flexibility in terms of time and location as well as its wide range of information for online classes, many students think that online learning has greatly transformed the educational system. However, there are some students who expressed their belief that they are inaccessible to online learning and gave reasons for rejecting it. Students will be more motivated to study the content thoroughly and succeed in their studies when they have positive views about the learning process or activity, but it will be difficult for them to identify their learning interests and will ultimately result in failure if they have negative perceptions about the learning process or the learning activity [5]. Thus, according to Kulal and Nayak [6] students' positive perception toward online classes are derived from their ideas about them, while their negative perceptions are derived from their poor experiences or criticisms of them.

B. Students' Attitude

A key component of the learning environment that online learning technologies assist is the attitude of the students toward online learning. According to Mohammed [7] Positive attitudes among lecturers will encourage students to acquire the necessary skills for implementing technology-based assessments and activities in the online classroom. Previous research shows that there is a correlation between attitudes and academic achievement. Research made by Ninsiana et al. [8] demonstrates how e-learning or online training can greatly support English language acquisition in a variety of settings.

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Online instruction is a great way to enhance traditional classroom instruction. Meanwhile, research findings in Khalid and Abdul Wahab [9] shows that student attitudes towards online learning can change depending on the subject, where the majority of students voiced their concerns about digital or online learning. Some of the major problems they encounter are restricted interaction between students and teachers, inadequate equipment, poor connectivity, and lack of access to internet resources. Thus, the prior attitudes of the students were constituted by their attitudes on the topic matter, online learning, and ICT usage. Students that engage in the online education system need to be more involved in their education since their attitudes toward the courses have an impact on their results [10].

C. Students' Acceptance

According to Concannon et al. [11] and Kim et al. [12] there will be a greater demand for smart technology integration in higher education among the younger student population. One way to define students' acceptance of online learning is as a general measure of their comfort level by participating in the process. A student will be more inclined to participate in online learning if they are happy with the process. Additionally, a reliable measure of satisfaction is user recommendations. Students' willingness to refer other students to an online learning system indicates that they were satisfied and thought the new method of instruction was beneficial [13].

D. Online Learning

According to Lawrence et al. [14] over time, there has been a notable impact on the education sector from the development of modern technologies. For example, teaching strategies have gradually changed to incorporate new technology-focused classes, and further changes are expected soon. Online education confirms that students may regulate their own learning process while also attesting to the flexibility of learning in terms of time and place [15]. However, awareness of and confidence in the newest technology are prerequisites for the successful implementation of online learning. Dhawan [16] highlighted a number of things to take into account when talking about online learning, including pedagogy, policy, cost, flexibility, and accessibility. According to Shanmugam et al. [17], E-learning is an innovative online platform that uses digital resources and communication to increase the effectiveness of teaching and learning. Research findings in Perumal et al. [18] shows that e-learning offers instructors and students a multitude of chances in addition to enabling technology and internet revolutions to transfer data, knowledge, aptitudes, and education. According to Dhawan [16] even in rural and isolated places, internet education is accessible and easy to utilize. Comparing the cost of education to the expenses of travel, lodging, and all other components of institution-based learning, it is believed to be a significantly less expensive method.

E. DTA20014 Basic Food Preparation

DTA20014 Basic Food Preparation provides introduction of foodservice operation which are kitchen rules and regulation, equipment and utensils to cooking technique, the fundamental concepts, skills, techniques and presentation of basic western and pastry cooking. Using the classical cooking approach, this course helps to develop the students' knowledge and skills in food preparation and in all aspects of kitchen operations. Students will also be given hands-on experience on how to prepare western food and pastry products and its derivatives. AT the end of this course, students can apply the principles of food preparation, kitchen rules and equipment. Secondly the students can perform skills in selection, preparation, cooking and presentation of food products and display an ethical behaviour in practising standard recipes in preparation of food products.

F. Live Streaming Demonstration Cooking via Google Meet in the Kitchen Class

Below is the flow of conducting live streaming demonstration cooking via Google Meet in the Kitchen Class for DTA20014 Basic Food Preparation.

i. Supplier directly delivered the raw ingredients to the house.
ii. Prepare *mise en place* (measuring the ingredients, portable stove).
iii. Set up a laptop and tripod (phone holder) and make sure the internet connection is stable.
iv. Create a google meet link.
v. Make sure all the students turn on their cameras.
vi. Communicate and interact with them and be active in keeping them engaged.
vii. For each tutorial, give an introduction in which you will tell your students about the recipe, ingredients, and other things to use.
viii. Make a quick and short tutorial so that the students are not getting bored.
ix. Provide clear step by step instruction.

Figure 1 is the live cooking demonstration at home during pandemic COVID-19 (Online Class) - Vegetable Cutting and Salad. Where Figure 2 is once the live demonstration is done, the video will be edited and published in the YouTube Channel for students' reference.

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Figure 1 Live cooking demonstration at home during pandemic COVID-19 (Online Class) - Vegetable Cutting and Salad

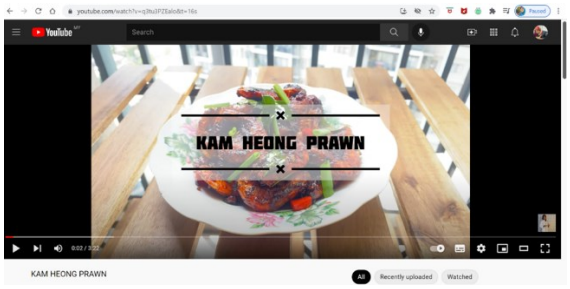

Figure 2 Once the live demonstration is done, the video will be edited and published in the YouTube Channel for students' reference

III. RESEARCH METHODOLOGY

The current study was conducted at Politeknik METrO Kuala Lumpur using a quantitative approach. Thirty respondents first-year PMKL kitchen students, who had been exposed to this live streaming demonstration via Google Meet, participated in study. Purposive sampling technique that indicates to achieve research objective. IBM Statistical Package for the Social Sciences (SPSS) version 26 was used to analyse the data. Descriptive analysis was used in this study. This quantitative study using a questionnaire as the instruments. The instruments were adapted from Alqahtani et al. [19], Lee et al. [20], and Van Wart et al. [21] and modified according to current content. In total, the questionnaire is divided into four sections as shown in Table 1.

Interpretation mean score divided into three shown in Table 2:

Table 2：Interpretation mean score

Mean score	Interpretation
1.00 – 2.33	Low
2.34 – 3.66	Medium
3.67 – 5.00	High

Source: Pallant [22]

Table 1: Items in the instrument

Sections	Items	Description	Scales	Resources
A	3-items	To collect respondents' demographics information	NIL	NIL
B	8-items	To measure students' perceptions towards live streaming demonstration cooking via Google Meet in the kitchen class - DTA20014 Basic Food Preparation	Likert scale with five response options (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = agree, and 5 = strongly agree).	Alqahtani et al. [19]
C	4-items	To measure students' attitude towards live streaming demonstration cooking via Google Meet in the kitchen class- DTA20014 Basic Food Preparation	Ranging from very good to very bad, very foolish to very wise, very unpleasant to very pleasant, and dislike very much to like very much.	Lee et al. [20]
D	6-items	To measure students' acceptance towards live streaming demonstration cooking via Google Meet in the kitchen class - DTA20014 Basic Food Preparation	Likert scale with five response options (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = agree, and 5 = strongly agree).	Van Wart et al. [21]

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IV. RESULT AND DISCUSSION

No.	Items	Mean (M)	Std. Deviation (SD)	Interpretation
1.	I felt stressful during live streaming demonstration cooking via Google Meet in the kitchen class.	3.57	1.478	Moderate
2.	It was easy to perform live streaming demonstration cooking via Google Meet in the kitchen class.	4.03	1.098	High
3.	I was satisfied with my performance in live streaming demonstration cooking via Google Meet in the kitchen class.	4.33	.802	High
4.	The teaching method was helpful to perform in live streaming demonstration cooking via Google Meet in the kitchen class.	4.43	.817	High
5.	The teaching method was adequate for performing in live streaming demonstration cooking via Google Meet in the kitchen class.	4.43	.679	High
6.	The steps in teaching method presented is easy to understand.	4.57	.626	High
7.	I prefer the teaching method that I have received over the teaching method.	4.17	.747	High
8.	The teaching method need further improvement to support my learning.	3.80	1.157	High
	Total mean	**4.17**	**.510**	**High**

Table 3 : Findings of students' perceptions towards live streaming demonstration cooking via Google Meet in the kitchen class - DTA20014 Basic Food Preparation

A. Research Objective 1: To Identify the Mean Score of Students' Perception Towards Live Streaming Demonstration Cooking via Google Meet in the Kitchen Class.

The findings of the study indicated that overall, the mean score of students' perceptions towards live streaming demonstration cooking via Google Meet in the kitchen class - DTA20014 Basic Food Preparation is high with a mean score 4.17 (SD=.510). The highest element is the teaching method was helpful and adequate to perform in live streaming demonstration cooking with a mean score 4.43. The lowest is respondents attained a moderate level of stress during the live streaming demonstration cooking, with a mean score of 3.57 (SD=1.478). The majority of respondents found it relatively easy to perform live streaming demonstration cooking via Google Meet, as reflected by a mean score of 4.03 (SD=1.098).

The study emphasizes a generally high positive perception among students regarding the integration of Google Meet for live streaming demonstration cooking. Despite some reporting moderate stress, the overall manageable experience suggests minimal hindrance to the learning process. Positive feedback on the ease of performance, high satisfaction, and praise for the teaching method underscore the effectiveness of the format, while feedback indicating the need for improvement provides valuable insights for refining the teaching approach and enhancing the virtual learning environment. As like study done by Rossouw [23], students revealed live-streamed classes are welcomed by students as the need for live-streamed classes to be recorded and made available to them afterwards and also as an alternative or as a substitute to physical class attendance. Moreover, study done by Liu et al. [24] stated that with live streaming learning, lab limitations can be overcome and also there are instant interaction between instructors and learners. This means that live streaming can be consider as alternative method of learning for students.

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Table 4: Findings of students' attitude towards live streaming demonstration cooking via Google Meet in the kitchen class - DTA20014 Basic Food Preparation

No.	Items	Mean (M)	Std. Deviation (SD)	Interpretation
1.	1. The idea of using live streaming demonstration cooking via Google Meet is: (very bad to very good)	4.47	.629	**High**
2.	2. The idea of using live streaming demonstration cooking via Google Meet is: (very foolish to very wise)	4.47	.681	**High**
3.	3. Using live streaming demonstration cooking via Google Meet would be: (very unpleasant to very pleasant)	4.33	.802	**High**
4.	4. Using live streaming demonstration cooking via Google Meet is an idea: (dislike very much to like very much)	4.47	.819	**High**
	Total mean	**4.43**	**.688**	**High**

B. Research Objective 2: To Identify the Mean Score of Students' Attitude Towards Live Streaming Demonstration Cooking via Google Meet in the Kitchen Class.

The findings indicate a high level of positive acceptance among participants for live streaming demonstration cooking via Google Meet, with an overall mean score of 4.43. Respondents expressed a positive perception across various aspects, including the idea's goodness, wisdom, pleasantness, and likability, with mean scores ranging from 4.33 to 4.47. The low standard deviations (ranging from 0.629 to 0.819) suggest a consistent and uniform response, highlighting a collectively positive sentiment toward the concept. The findings on students' attitudes toward live streaming demonstrate a widespread positive outlook. The majority of respondents rated the idea as "very good," emphasizing a favorable perception. The assessment of wisdom, emotional response, and overall liking consistently showed positive results, with the cumulative percentages indicating a unanimous agreement on the positivity of the approach.

In the study done by Safar and Alkhezzi [25], which stated that respondents' attitudes toward online streaming are positive because this method can be used as an innovative tool for teaching and learning. In addition, the findings from Law [26] showed that students love the live streams of learning with peers and instructors due to this method not only facilitates the learning needs but also opens up the opportunity for students to take part in the live discussion for real-time clarification. This means that with live streaming class, students can get live feedback and ask questions directly to lecturers.

Table 5 : Findings of students' acceptance towards live streaming demonstration cooking via Google Meet in the kitchen class - DTA20014 Basic Food Preparation

No.	Items	Mean (M)	Std. Deviation (SD)	Interpretation
1.	I enjoy live streaming demonstration cooking via Google Meet.	4.50	.820	High
2.	My overall impression of live streaming demonstration cooking via Google Meet is good.	4.60	.621	High
3.	I often ask questions to lecturer in live streaming demonstration cooking via Google Meet.	4.30	.702	High
4.	The instructor of live streaming demonstration cooking via Google Meet is generally responsive.	4.77	.430	High
5.	Instructor can explain effectively in live streaming demonstration cooking via Google Meet.	4.83	.379	High
6.	I am comfortable with live streaming demonstration cooking via Google Meet.	4.53	.776	High
	Total mean	**4.59**	**.489**	**High**

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C. Research Objective 3: To Identify the Mean Score of Students' Acceptance Towards Live Streaming Demonstration Cooking via Google Meet in the Kitchen Class.

The overall mean score for students' acceptance towards live streaming demonstration cooking via Google Meet in the kitchen class is 4.589 (SD=0.489). Respondents acknowledged the effectiveness of the instructor in explaining concepts during live streaming demonstration cooking via Google Meet, providing a mean score of 4.83 (SD=0.379). The findings indicated that respondents attained score of enjoyment during live streaming demonstration cooking, with a mean score of 4.50 (SD=0.820). Respondents held a favorable overall impression of live streaming demonstration cooking via Google Meet, providing a mean score of 4.60 (SD=0.621). The participant engagement was observed, as indicated by a mean score of 4.30 (SD=0.702) for the statement "I often ask questions to the lecturer in live streaming demonstration cooking via Google Meet." Respondents attained a high level of satisfaction with the instructor's responsiveness during live streaming demonstration cooking via Google Meet, with a mean score of 4.77 (SD=0.430). Lastly, respondents reported a high level of comfort with live streaming demonstration cooking via Google Meet, with a mean score of 4.53 (SD=0.776). This indicates that the participants feel at ease in the virtual learning environment, fostering a positive and supportive atmosphere. The findings collectively point towards a highly positive and engaging experience for participants in live streaming demonstration cooking via Google Meet. The enjoyment, positive overall impression, active engagement with the lecturer, instructor responsiveness, effective explanation, and high comfort level collectively contribute to a favorable virtual learning environment. Students consistently express positive acceptance of live streaming demonstration cooking via Google Meet, with indicators such as high enjoyment, favorable overall impression, and active engagement with the lecturer pointing to a positive and engaging learning environment. The instructor's responsiveness and effective explanation contributes to a clear understanding of the content, while the high comfort level indicates a positive and supportive atmosphere for participants.

In the study done by Ng et al. [27], their findings indicated that only 9.1% prefer to have a live streaming class session but more than half of the respondents prefer to have both the teaching videos and live streaming class sessions due to the recorded teaching videos can be repeatedly learn and revised by students where students sometimes experienced not very smooth on live streaming session. However, Samat et al. [28] stated that live streaming demonstrating authentic experience engages learners with actual learning experience. This means that live streaming can be used as new approach to teach students in cooking class.

V. CONCLUSION

The comprehensive exploration of students' perceptions, attitudes, and acceptance towards live streaming demonstration cooking via Google Meet in the kitchen class for the DTA20014 Basic Food Preparation course has yielded insightful findings. Overall, participants demonstrated a high mean score of perception, indicating that the use of this innovative teaching method was well-received. The manageable stress levels, ease of performance, and high satisfaction with personal performance underscore the effectiveness of this approach.

While the teaching method garnered commendation for its helpfulness, adequacy, and clarity, there remains room for improvement, as indicated by the feedback on the need for further enhancements. These insights highlight the dynamic nature of virtual learning environments and the importance of continuously refining instructional strategies to address specific concerns raised by participants.

The positive perception of live streaming demonstration cooking via Google Meet signifies its potential as an effective pedagogical tool. Organizers and educators can leverage these findings to enhance the learning experience further. The positive emotional responses and widespread acceptance of the approach underscore its viability, particularly in the context of practical courses.

These insights have broader implications for the future of online education, suggesting that virtual platforms can successfully support hands-on learning experiences. Institutions, especially those considering the integration of online methods beyond the pandemic, can draw inspiration from this study's success in providing a conducive virtual learning environment.

Future improvements in live streaming demonstration cooking should focus on refining the teaching method based on identified areas for enhancement, ensuring a more seamless and effective learning experience. Additionally, enhancing instructor training to address queries, explain concepts, and foster participant satisfaction, along with providing technological support for reliable internet connectivity, will contribute to the continued success of virtual learning. Considering the overwhelmingly positive responses, institutions should strategically integrate live streaming demonstration cooking into their long-term

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curriculum, aligning with student preferences and offering flexibility beyond traditional face-to-face learning constraints.

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