UNIVERSITI TEKNOLOGI MARA
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# VIRTUAL SYMPOSIUM ON TEACHING & LEARNING (VSTL) 2020

Redefining the Practice of Teaching and Learning

E-PROCEEDING

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## INTRODUCTION

The very first Virtual Symposium on Teaching and Learning 2020 has been organised by the Academy of Language Studies, UiTM Cawangan Johor Kampus Pasir Gudang in collaboration with Unit Penulisan dan Penerbitan, BPJIA UiTM Cawangan Johor Kampus Pasir Gudang.

This symposium has provided an opportunity for researchers and educators to share their ideas and insights in the name of education. This symposium has also provided a platform for the exchange of knowledge and expertise in relevant fields and promoted exploration of potential collaboration for future research.

This event has the goal to bring academicians and researchers in education together from across the globe.

Researchers and authors have been invited to submit original high-quality extended abstracts. Papers are solicited on, but not limited to:

a. E-Learning

b. Innovation and Creativity in Teaching and Learning

c. Assessment and Evaluation in Teaching and Learning

d. Best Practices in Teaching and Learning

e. Others (related to Teaching and Learning)

All accepted extended abstracts have been presented by participants on the symposium day via Google Meet.

All accepted, registered and presented extended abstracts have been published in this e-proceeding with e-ISBN. Authors of selected extended abstracts will be invited after the symposium to submit a full paper for Scopus-indexed Journals/ a special issue in the Insight Journal UiTM Cawangan Johor. Best Papers and Best Presentations have also been awarded in this event.

## FOREWORD BY ASSISTANT RECTOR

**Dr. Haryana binti Mohd Hairi**

**Assistant Rector, UiTM Pasir Gudang**

Assalamualaikum wbt and good day everyone.

I am pleased to welcome all of you to the Virtual Symposium on Teaching and Learning, VSTL, 2020. Congratulations for your participation, fruitful sharing session and discussion for the symposium.

Today, we have witnessed educators across institutions, disciplines and expertise, coming together to share the insights, experience, and practices in teaching and learning. I bet that everyone has had your fair share of not only getting inputs and ideas from others, but also share your own perspectives in the field of teaching and learning.

Ladies and gentlemen,

VSTL 2020 is one of the many virtual academic get-togethers, which could have been organized in the conventional way, with face-to-face meetings and sessions. However, considering the many aspects in our current situation, with the seemingly unending COVID-19 fiasco, this symposium is successfully done on a virtual platform today without neglecting the ultimate purpose of such programs. I believe that all of us today have gained so many positive inputs for various aspects in teaching and learning even without physically meeting each other, which is no less than if the program is done conventionally.

It is high time that such an event took place to highlight the remarkable contribution, in which “the new norm” of teaching and learning took place in our current education situation. I am proud to know that, through a glance at the list of presentations planned for today, reveals the amazing diversity of these areas. Congratulations to all of you.

COVID-19 pandemic has not only changed our way of teaching and learning, but also forced us to become more creative and innovative. In some cases, we could not meet our students face to face, and had to use virtual methods, as how we met today to carry out our duty as teachers and educators. This can be easy for some of us, but a mounting task for others. However, the responsibility of educating our learners still needs to be carried out, in one way or the other, no matter how challenging it is. Thus, the purpose of this symposium is for us to

not only share the traditional practices but also new methods and techniques in online or distance learning.

I hope that VSTL 2020 has been a good platform to inspire us, the educators to try out new teaching techniques and the experts to share their insight and valuable knowledge in this area. This could also be the route to a unique opportunity to share and exchange with counterparts from different specialties the advancements in your field. I also hope that our meeting will not stop today and can promote exploration of potential collaboration for future research.

Ladies and gentlemen,

On behalf of the committees and UiTM Cawangan Johor, I would like to thank all of you for your support and I hope that you have had fruitful and rewarding exchanges from this program. I would like to also congratulate the Academy of Language Studies, UiTM Cawangan Johor, Kampus Pasir Gudang for organizing the symposium, together with Unit Penulisan dan Penerbitan of BPJIA, UiTM Cawangan Johor Kampus Pasir Gudang. It is my hope to see more programs such as this in the future.

Before I end my speech, I would like to share a quote by Phil Collins;

*"In learning you will teach, and in teaching you will learn".* May all of us here never stop learning, and continue inspiring the learners, and each other in our jihad to share and value the knowledge that we have.

I hereby officiate the closing ceremony and announcement of awards of Virtual Symposium on Teaching and Learning 2020.

All the best to everyone, and may all our effort be blessed. Thank you.

## FOREWORD BY COURSE COORDINATOR

**Sharifah Amani binti Syed Abdul Rahman**

**Course Coordinator Academy of Language Studies, UiTM Pasir Gudang**

Assalamualaikum and good day everyone.

I would like to extend our warmest welcome to everyone to the first Virtual Symposium on Teaching and Learning, VSTL, 2020. For your information, this conference is organised by the Academy of Language Studies, UiTM Cawangan Johor, Kampus Pasir Gudang in collaboration with Unit Penulisan dan Penerbitan, BPJIA UiTM Cawangan Johor Kampus Pasir Gudang.

First of all, Congratulations to all the members of the Organizing Committee and all the staff that had have been working very hard to the accomplishment of this symposium. I would like to thank them for their dedication, time, efforts and of course, months of intensive preparation. I would also like to thank our patrons, individual and organization partners, and volunteers. Without their generosity, we would not be able to create a total environment to support your full participation.

Ladies & gentlemen,

With the theme of *"Redefining the practice of teaching and learning",* we should expect critical challenges ahead in fully realizing the spirit of the theme as we are tested with Covid-19 outbreak. This pandemic however had not stop us from sharing and gaining new knowledge and method especially in teaching and learning. We are very thankful that even though we won't be able to physically meet each other today, we will still be able to get to know each other virtually.

I hope this symposium shall provide a valuable opportunity for researchers and educators to share their valuable experiences and knowledge especially in redefining our way of teaching to suit the current condition.

Once again, thank you all for your presence and participation. Each and every one of you are indeed an important part in ensuring the success of this symposium. I hope that this is not the end of our meeting and networking.

Enjoy the symposium, and may we meet again in the future.

Thank you.

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VSTL01

# i-NPD Board: Innovative and Student-Centered Learning for Marketing Students

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**Abstract**

Innovative and student-centered learning is something that is encouraged and lauded upon in the 21st century classrooms. In this study, New Product Development, which is a theory-based subtopic in several Marketing courses, is injected with innovative elements to increase students' attention and understanding. Prior to this, students often struggle in assimilating all the required information in the 8-step process of the New Product Development. The i-NPD Board serves as an intervention that is both innovative and interactive to guide and nurture students in understanding the New Product Development topic in new lights and perspective. i-NPD Board is trialled out to a group of 12 students who were taking the Marketing courses with New Product Development in the subtopic. A post-interview was conducted after the trial. Based on the findings, respondents unanimously agree that the i-NPD Board is creative and useful in learning the New Product Development topic, helps them in presenting the topic and guiding them in the process of creating products. On the other hand, several respondents perceive the i-NPD Board to be a bit cluttered and needed more guidance in using it. A comprehensive instruction manual on how to utilise the i-NPD Board should be created along with detailed explanation and close guidance for better understanding of the i-NPD Board.

## Background and Review of Research Materials

New Product Development is one of the subtopics offered for Principles of Marketing course and essentially what makes up the entire Product and Service Development course. New Product Development is intended for the learners to learn the steps required in developing new products. New products are the lifeblood of a company. As old products mature and fade away, companies must develop new ones to take their place (Kotler, 2018). New Product Development (NPD) Process consists of eight steps; *Idea Generation, Idea Screening, Concept Development and Testing, Marketing Strategy Development, Business Analysis, Product Development, Test Marketing* and *Commercialisation*. Using structured methods for managing business innovation can be an effective way to improve the ideation process as NPD is a structured topic. Teaching structured methods is a potent way to enhance the innovative capabilities of companies and to develop creative products for the marketplace (Fernandes et al., 2009).

During the teaching and learning process prior to this study, the assessor will explain the process step by step. Learners are then required to prepare and present the new product that they plan to develop via the New Product Development process. More often than not, learners forget what has been taught or skip crucial elements in almost all classes that the assessors have taught before. Consequently, the full potential of New Product Development process was not properly utilised by the learners during the teaching and learning process.

Thus, an intervention in the form of an innovative project was introduced by the assessors to combat this problem and further enrich the teaching and learning activity and make it more student-centered. The innovative project is called i-NPD Board or its full name; Intelligent New Product Development Board. The i-NPD Board is an A2-sized board containing all the information and the necessary details

of all the eight steps in the New Development Process which then the learners merely fill in the necessary and important information.

Based on the researcher's observation and experience, students struggle to develop new product development (NPD) process activity because they take a long time to develop a deeper understanding during the teaching and learning process.

Research tells us that there are many studies indicate that traditional methods are no longer applicable to younger generations and many higher education institutions are moving forward by applying creativity and innovation in their teaching and learning activities (Narayanan, 2017). Some common visual learning strategies include creating graphic organizers, diagramming, mind mapping, outlining and more.

Therefore, Intelligent New Product Development Board (i-NPD Board) helps students to see how ideas are connected and realize how information can be grouped and organized. With visual learning, new concepts are more thoroughly and easily understood when they are linked to prior knowledge. Students can use diagrams and plots to display large amounts of information in ways that are easy to understand and help reveal relationships and patterns.

Creative teaching method is imperative in gaining students' learning interest: the simulation of this system mainly investigates the relationship between creative teaching method and students' learning interest. The use of creative teaching methods can trigger students' learning interest (Tian-SyungLan, 2013).

According to the study, a new teaching method will increase students' learning interest, trigger their learning motivation, develop their scientific attitude, and improve their learning achievements and learning effectiveness (Tian-SyungLan, 2013). Therefore, Intelligent New product model (i-NPD Board) helps students see how ideas are connected and realize how information can be grouped and organized. With visual learning, new concepts are more thoroughly and easily understood when they are linked to prior knowledge. Students can use diagrams and plots to display large amounts of information in ways that are easy to understand and help reveal relationships and patterns.

## Research Questions

This action research is intended to find answers to these pertaining questions:

i. Is the i-NPD Board useful for the learning of the New Product Development topic?
ii. Does the i-NPD Board aid the learners present the New Product Development process successfully?
iii. Does the i-NPD Board guide the students with the product creation process?
iv. What are the recommendations for the future usage of the i-NPD Board?

## Research Objectives

The objectives of this research are as follows:

i. To determine the usefulness of the i-NPD Board in learning the New Product Development
ii. To find out whether the i-NPD Board aids the students in presenting the New Product Development process successfully.
iii. To ascertain if the i-NPD Board guides the student with the product creation process.
iv. To provide recommendations for the future usage of the i-NPD Board.

## Methodology

### Research Design

This innovative project is envisioned to help learners in undertaking the New Product Development process via the i-NPD Board. Qualitative research suits this project the best as it is the study of research problems inquiring into the meaning of individuals or groups ascribed to a social or human problem. It was then equipped with the collection of data in the natural setting and ended with voices of participants and reflexivity of the problem that signals a call for action (Creswell, 2007).

## Methods

### Population (N) and sample (n)

The population of this study are the learners from Kolej Profesional MARA Seri Iskandar, specifically learners of the Diploma in International Business, Diploma in Marketing and Higher National and Diploma in Business (Marketing). The samples for this research are 12 respondents who were randomly selected among students who took the Principles of Marketing and Product and Service Development courses using the convenience sampling method.

### Data Sources and Collection Method

*The Intervention Activity – The i-NPD Board*

Before the intervention activity was implemented, the researchers have taught the topic using the traditional way, which are through lectures and tutorial activities. After the whole syllabus was taught, the researchers randomly selected 12 students from two different courses for this experiment. The respondents were briefed on the i-NPD Board, its components and the usage. The respondents were given two hours to utilise the board in creating one new and innovative product.

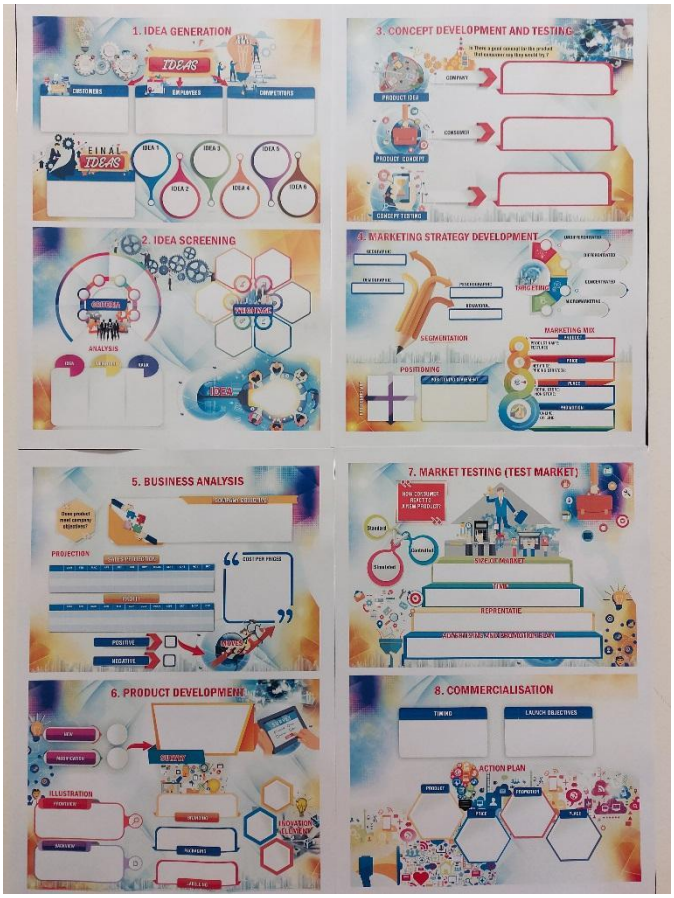


*Diagram 1: The i-NPD Board*

*Interview*

Structured interview questions were used for the purpose of collecting data and feedbacks of this innovative action research project. Structured interview, being one of the qualitative research methods is made up of standardised questions where each respondent gets the same set of questions, in the same way and in the same order. Structured interview is used because of the minimum variation

between interviews (Bryman, 2016). A group of twelve respondents were chosen for this research where the interview was done face-to-face in order to elaborate the questions, prod the respondents for answers and record the feedbacks. For this research, a structured post-interview was done after the intervention activity was implemented. The interview consists of 10 questions where the respondents were asked on their opinions of the i-NPD Board, as well as recommendations for better use of the Board in the future.

## Findings

*Post-Interview*

Post-interview questions had been implemented to the 12 students from different courses.

Based on the post-interview, the findings show that most of the respondents agreed that they have experience problems in learning theory-based course. Majority of students show lack of understanding of NPD theory that should have been understood. They are many reasons why the respondents prefer learning using template/diagram/models. This is because it will help them to understand the theories better. The respondents also prefer visual learning style because it is deemed to be more attractive, interesting and colourful. Innovation in learning is also something they preferred to ensure understanding and nurture creativity.

Respondents agreed that the i-NPD Board helped their teammates in understanding the new product development process better. It also improved their communication and helped them with the presentation. The i-NPD Board is a technique for group project assessment and suitable for presenting New Product Development topic. Majority of the respondents agreed that this model really helped them with the new product creation. It taught them to understand each step in developing new product and easy to be used.

Although the students agreed that they felt i-NPD Board were easy to use and beneficial to them, but they also agreed that their group has faced some challenges, issues and constraints when using the i-NPD Board. The issues with the board are the small size and clutter issue. Some of the proposals for potential use of the i-NPD Board are to increase the size of the board, reduce the elements in the board and include an instruction manual to it.

## Conclusion

### Research Objectives Discussion

The first objective of this research is to determine the usefulness of the i-NPD Board in learning the New Product Development topic. The respondents unanimously agreed that they have problems in learning theory-based courses and needed all the help that they can get in the form of innovation in teaching and learning. The respondents think that i-NPD Board is easy to understand, colourful, interactive and attractive, and helps them to understand the New Product Development topic better.

Next objective is to find out whether the i-NPD Board aids the students in presenting the New Product Development process successfully or not. It can be concluded that the respondents agree that the i-NPD Board helps them to present the New Product Development topic as everything is arranged in the way it is supposed to be in one board.

For the third objective which is to ascertain if the i-NPD Board successfully guides the student with the product creation process, majority of the respondents answered positively. It is an evidence that the i-NPD Board proved to be helpful and can guide students in the product creating process.

Lastly, this research aims to provide recommendations for the future usage of the i-NPD Board. Respondents suggest that the i-NPD Board should be printed on a larger-sized paper that comes with clear explanation on how to utilise it.

### Reflection

As we complete this action research, there are several suggestions and recommendations from post-interview on how to improve i-NPD Board in the future. Most of our respondents suggest that the assessor needs to reduce the icons and provide more space to write in i-NPD Board. The assessor should take that into consideration and come out with the improved design of i-NPD Board. Based on

the post-interview outcomes, another constraint when using i-NPD Board is the students need a clear explanation about this model. The assessors should create instruction manuals on how to use each table in i-NPD Board and detailed explanation, as well as close guidance for better understanding the i-NPD Board.

Based on assessors' own observation, several elements in the i-NPD Board can be excluded to avoid the board from being cluttered with too much information and only focus on the important elements. Overall, the i-NPD Board is proven to be a success and inserts innovative element in the teaching and learning that is fun, saves times, creative and interactive, and at the same time focuses on the students.

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VSTL02

# Clinical Psychiatry Teaching and Learning Goes Virtual

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**Abstract**

COVID-19 crisis has caused severe disruption to teaching and learning activities. One of the recommended steps to prevent further spread of the illness is by physical distancing practice. Therefore, the current model of teaching and learning in psychiatry posting for medical undergraduates in Year 4 and Year 5 need to be enhanced by integrating virtual learning with traditional face-to-face methods. The ordinary bedside teaching and interview techniques were mostly converted into role plays, simulated patients, and recorded interview sessions with real patients via video conferences. Only a few learning sessions with patients were carried in-person, and adherence to strict protocols is compulsory. Case presentations and seminars were conducted via online platforms such as Microsoft Teams, Zoom, Google Meet and Skype. Logbook assessments and end posting evaluations were done through Google Form and viva voce through video conferences. Feedback from students was collected using Google Forms. Overall, students' responses had been positive regarding this new approach in psychiatry teaching and learning. In conclusion, this COVID-19 crisis has unfolded the potential of collaborative pedagogical practice to a virtual teaching and learning environment in psychiatry.

## Introduction

Clinical teaching and learning are fundamental to medical training, especially during the clinical years. Students act as learners who require supervision by lecturers in doing clerkship and role modelling in the real clinical setting (Rose, 2020). Students will undergo the same process in every clinical posting.

In psychiatry posting, students are expected to interview psychiatric patients, do mental state examinations and case presentations. Traditionally, psychiatry teaching involves mostly face-to-face teaching, which was the most highly valued and preferred teaching activity (Lampe et al., 2010). The available evidence suggested that students favoured traditional face-to-face education (Fitzmaurice et al., 2007) even when offered an e-learning environment including video lectures (Guri-Rosenblit, 2006) and reported a greater preference for live psychiatry teaching rather than video lectures (Mullins et al., 2014). However, during the unprecedented times of COVID-19 pandemic, medical teaching has been challenged with new ways of teaching and learning (Rashid et al., 2020). Physical distancing has been viewed as a mandatory step in reducing cases of COVID-19 (Arandjelovic et al., 2020). Hence virtual learning has become the ultimate platform for clinical teaching. This article highlights the experience of converting traditional psychiatry training into virtual teaching.

## Content

Psychiatry posting focuses on the diagnosis and treatment of psychiatric disorders that are seen across different age groups (child, adolescent, adult and geriatric). This 7-week posting in Year 5 and 2-week posting in Year 4 focus on applying the knowledge, skills, attitude and manage patients with psychiatric disorders and introduction in psychological interventions. Students are expected to be able to formulate a provisional diagnosis, differential diagnoses and basic management plan for patients with psychiatric disorders as how they are expected to function as house officers later. They also need to demonstrate effective empathic communication to patient and family members. The clinical clerkship is conducted in the Department of Psychiatry, Hospital Selayang and UiTM campuses. Twenty beds in Psychiatry ward, Hospital Selayang, in-patient liaison cases in CTC UiTM Sg Buloh and outpatient clinics and active community psychiatric service for the population residing in Selayang, Kepong and Rawang.

However, during COVID-19 pandemic, due to Movement Restriction Order, students were instructed to leave campus and stay at home. When they finally allowed to return to campus in July 2020, Hospital Sungai Buloh was still functioning as National COVID-19 Hospital, and medical students were not

allowed to enter the hospital. New rules were implemented in other clinical teaching settings to comply with the standard operating procedure during COVID-19 set by the Faculty of Medicine. Therefore, traditional face-to-face teaching was converted to virtual teaching.

The ordinary bedside teaching and interview techniques were mostly converted into role plays, simulated patients, and recorded interview sessions with real patients via video conferences. The course learning outcome, which is to explain the relationship between psychological, social and physical factors that contribute to emotional and behavioural symptoms and signs was achievable even on virtual teaching. Students can formulate the diagnosis and outline the basic management plan as expected. Only a few learning sessions with patients were carried in-person, and adherence to strict protocols is compulsory. Case presentations and seminars were conducted via online platforms such as Microsoft Teams, Zoom, Google Meet and Skype. Logbook assessments and end posting evaluations were done through Google Form and viva voce through video conferences.

Petrie et al. (2019) suggested that traditional teaching methods in Psychiatry are still of high value as medical students perceived Psychiatry lectures delivered in a face-to-face manner to be more useful than video recordings. However, new technologies are of multiple advantages to both students and universities in terms of cost-effectiveness and accessibility (Nash, 2015). Blended learning is a newly emerging area in medical education whereby both traditional and innovative teaching methods are used as a complementary fusion (Ruiz et al., 2006). Blended learning is defined as a mixed method of face to face teaching and learning mixed with technology-based teaching (Nongmeikapam et al., 2019). A 2013 review concluded a range of pedagogical methods would be most useful to include in psychiatry education, as both methods are valuable (Verduin et al., 2013). Our survey on the overall organisation of the online psychiatry posting was done among the fourth year UiTM medical students showed 97% (n= 65) agree that the open and distant learning were well-organised and 71% (n=48) respondents strongly agree that the time-table was well-organised. With regards to personal development, 91% of respondents agree they achieved the communication and skills required through online learning, while 94% agree to feel stimulated for their learning needs. Our survey was in line with previous studies which reported that medical students prefer both face-to-face learning onsite and video-assisted learning. Both complement one another and do not stand as a substitute (Nongmeikapam et al., 2019).

Feedbacks from the fourth year UiTM medical students undergoing virtual Psychiatry posting stated that if they had a choice, they would prefer blended method rather than entirely virtual classes. Mostly the students yearn for traditional psychiatry bedside teaching during clinical postings, where behavioural manifestations of patients are directly observed. However, in the COVID-19 pandemic where physical distancing is of utmost importance in preventing the spread of disease, the new revolution in medical curriculum is inevitable.

## Conclusion

In conclusion, this COVID-19 crisis has unfolded the potential of collaborative pedagogical practice to a virtual teaching and learning environment in psychiatry. Virtual learning has been an eye-opening experience for all stakeholders but never a disappointing one. The way to move forward would be blended learning where medical students can get the best of both worlds, namely traditional psychiatry learning and synchronous or asynchronous virtual learning.

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VSTL03

# Students' Perceptions on the Use of English Vlog within Youtube to Enhance Speaking Skills

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**Abstract**

Video Blog (vlog) within YouTube is currently one of the most popular daily digital videos among youngsters. This study investigated students' perceptions on the use of English vlog within YouTube to enhance speaking skills. The respondents were 59 fourth-year students from one of the universities in the southern region of Malaysia. Using a mixed method design, the study utilised a set of questionnaire as the main instrument and supported with interview questions. The questionnaire was distributed through Google form and later six of the respondents were randomly selected for interview sessions. The data was examined using descriptive and thematic analysis. The results showed that students have positive perceptions towards English vlog as vlog can enhance their speaking skills. The students perceived English vlog within YouTube offers many positive impacts towards students' speaking improvement in the aspects of language learning and motivation. Interestingly, students perceived that they learn many new vocabularies, correct pronunciation, contextual words, and different slangs. Students also perceive that vlogging increase their motivation to speak in English. It is concluded that students perceive vlog within YouTube enhance speaking skills.

Keywords: Video Blog (Vlog), YouTube, Speaking Skills, Students' perceptions

## Introduction

Vlogging nowadays has become one of the most popular daily digital videos that is being used by all age group. It is a combination of the word 'video' and 'blog' that allows its users to create, upload and watch video to share one's lifestyle (Anil, 2016). Users express thoughts related to many aspects of life by recording and uploading them to the vlogs (Anil, 2016). There are many types of popular vlogs among youngsters; review and unboxing products, pranks and comedies, beauty and fashion, tutorial on how to do certain things, lifestyle, movie and book reviews, travel, pop culture and gossips and click baits (Sam, 2019).

In addition, YouTube is one of the social media platforms that can be easily accessed from all over the world. Clarkson (2015) highlighted that there are abundance of knowledge and information shared by users by vlogging in Youtube. YouTube is also a helpful platform for students to learn skills in ESL because it can be integrated with various lessons inside and outside of the classroom (Jalaluddin, 2016).

Sari (2018) in her study found that majority of the students agreed that vlog help to boost confidence in speaking English and make them comfortable expressing views and ideas to public. Video blogging has a positive impact on the development of students' oral skills (Santamaria et al., 2018). The use of digital technology such as video cameras aid in the development of students' language skills especially speaking skills (Combe and Codreanu, 2016) and encourages students to express themselves and provides more public speaking practicing opportunities to the users (Sulistyo, 2018).

However, it was found that previous studies investigated vlog and YouTube separately, and very little was investigated in the area of speaking skills. Besides, a research looking into the benefits of vlog and

YouTube in enhancing speaking skills from the perceptions of the students is believed needed. Thus, there is a need to investigate students' perceptions on the use of English vlog within YouTube and how it can help the students in enhancing their speaking skills. The findings of this study highlight that educators are encouraged to vary their language teaching activities by integrating English vlog within YouTube for more effective teaching and learning.

This study is a part of a larger scale study which utilizes mixed method research design in which for quantitative data collection, a set of questionnaire adapted from Safitri and Khoriyah (2017) and Balbay and Kilis (2017) was used. In addition, interview sessions were carried out to gain qualitative data. The respondents of the study were 59 fourth-year undergraduate students from School of Education (SoE), UTM. They were selected using random sampling technique. Besides, in order to maintain validity and reliability of the collected data, this study referred to the table of sample size by Krejcie and Morgan's (1970) for decision of the number of respondents for the study. Thus, for a population of 71 fourth-year undergraduates, 59 students were chosen as respondents to answer the questionnaire. Six randomly selected respondents were also involved in the interview sessions until data was saturated.

## Findings and Discussions

In this section, all the findings from the analysis of data are presented. Table 1 displays the students' perception on using English vlog within Youtube towards students' English learning. Data was collected via questionnaire and supported with interview sessions.

Table 1: Students' Perception of Using English Vlog within Youtube Towards Students' English Learning

| Items | Strongly agree | Agree | Disagree | Strongly disagree |
|---|---|---|---|---|
| I learn many new English words. | 24 (41%) | 34(58%) | 1 (2%) | 0 (0%) |
| I am able to know new English terms in certain context. | 27 (46%) | 32 (54%) | 0 (0%) | 0 (0%) |
| I learn how to pronounce English words correctly. | 19 (32%) | 39 (66%) | 1 (2%) | 0 (0%) |
| I learn variety English accents from the native speakers. | 24 (41%) | 32 (54%) | 3 (5%) | 0 (0%) |
| I learn the correct English grammar use. | 12 (20%) | 37 (63%) | 10 (17%) | 0 (0%) |
| I discover many English slangs. | 26 (44%) | 28 (47%) | 5 (8%) | 0 (0%) |

It was noted from Table 1, students perceived using English vlog within Youtube has positive impacts towards students' English learning in which all the respondents (100%) agreed that they are able to learn new English terms in certain contexts from vlog. From the above analysis, all the respondents, in which 46% strongly agree and 54% agree that by vlogging within Youtube they are able to know new English terms in certain contexts. Besides, 24 of the respondents (41%) strongly agree and 32 respondents (54%) agree that English vlog helps them to learn many new English words. Nonetheless, there are 17% of the respondents disagree that they learn correct English grammar when vlogging although 83% have the opposite point of view. In terms of the discovering English slangs, 91% of the respondents agree that by vlogging they discovered a variety of English slangs although 8% disagree with the view.

These findings were also supported with the findings from interview sessions. The excerpts are presented in Table 2 below.

Table 2: Respondents' Excerpts on Students' English Learning

| Respondent | Excerpts |
|---|---|
| 3 | "I'm able to discover many new words and know to pronounce it correctly. Besides, I also get to learn more slangs in English that been used by the vlogger such as 'whadup', that's mean 'what's up'and many more slangs and for that I've been using the slangs in my daily life to greet my friends" |
| 5 | "Vlog helps when I learn English grammar indirectly..emm mainly the usage of noun and the vocab that really really help me.. I'm able to get to know many new vocabulary when I watch vlog videos as well as able to learn different ..aaa.. English accent" |

It was noted that Respondent 3 discovered new vocabularies and the correct way of pronouncing words when she said "I'm able to discover many new words and know to pronounce it correctly". The respondent also added that she "also get to learn more slangs in English that been used by the vlogger such as 'whadup', that means 'what's up' and many more slangs". She concluded by saying she is confident in using these slangs in her (my) daily life to greet her (my) friends". In addition, Respondent 5 expressed her thought that she was able to learn grammar indirectly and with English vlog also, she learned different English accents from the speaker.

The above findings are also aligned with the study by Safitri and Khoiriyah (2017) and Chottsawhas (2016) where they found that watching English vlog helps students to enrich the vocabulary, learn new variety words from certain context and encourage students to understand many terms across the culture. Besides, Riswandi (2016) highlighted that YouTube based videos such as vlog really help students in developing new English vocabularies and they impart ideas of the content of what to speak.

In addition to the findings above, students also perceived that using English vlog has positive impacts towards students' motivation as shown in Figure 1 below.

Figure 1: Positive Impact of Using English Vlog Towards Students' Motivations

| Items | Strongly agree | Agree | Disagree | Strongly disagree |
|---|---|---|---|---|
| I learn many new English words. | 24 (41%) | 34(58%) | 1 (2%) | 0 (0%) |
| I am able to know new English terms in certain context. | 27 (46%) | 32 (54%) | 0 (0%) | 0 (0%) |
| I learn how to pronounce English words correctly. | 19 (32%) | 39 (66%) | 1 (2%) | 0 (0%) |
| I learn variety English accents from the native speakers. | 24 (41%) | 32 (54%) | 3 (5%) | 0 (0%) |
| I learn the correct English grammar use. | 12 (20%) | 37 (63%) | 10 (17%) | 0 (0%) |
| I discover many English slangs. | 26 (44%) | 28 (47%) | 5 (8%) | 0 (0%) |

Figure 1 above presents students' perception on the positive impacts of using vlog within YouTube towards students' motivation. From the survey, more than half of the students (97%) agree that they can practice speaking in English about things they like by vlogging. Besides, 95% students also agree that they feel comfortable to learn English independently from English vlog. Another 82% of the respondents perceived using vlog in YouTube boost their confidence and 84% admitted they speak English freely and comfortably.

During the interview session, Respondent 2 shared that she can "gain new experience and it will give me (her) so much fun…aaa…plus it can give me (her) motivation to speak in English, get new and fun experiences when using English vlog." She perceived that the use of technology motivates her to speak in English. Similarly, Respondent 5 also found that using English vlog is fun and enjoyable. Vlogging can also increase her speaking motivations by speaking in front of the camera freely as she can talk something that she likes as reflected with the findings by Gao et al. (2010).

The findings are similar to the findings by Gao et al. (2010) in which they stated that students can practice speaking about things they like freely as the concept of vlog is to talk and share any content that the speaker wants to share without any regulation or format. In addition, Rahmawati et al., (2018) shared similar view which they discovered that students become more interested, confident and enjoy speaking English by using vlog although they are not used with it.

## Conclusion

This study focused on identifying students' perceptions on the use of English vlog within YouTube to enhance speaking skills. This study has discovered that students obtain many positive impacts from English vlog which can help them enhance speaking skills in the aspects of language learning and motivations. Majority students perceived that English vlog helps them to learn many language aspects which are beneficial in helping the students to gain more new vocabularies and English terms. English vlogs do offer new and entertaining ESL speaking activities which can attract students to learn and practice English speaking skills. English vlog within YouTube has its own potential in exposing students with technology use in ESL classroom especially speaking skills lesson.

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VSTL05

# Investigating Readiness of The Arrival of Industrial Revolution 4.0 Among Students in Higher Learning Institution

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**Abstract**

This study is intended to identify whether the students of higher learning institutions are ready of the arrival of the current worldwide emergence of Internet of Things (IOT) which then leads to the Industrial Revolution 4.0 (IR 4.0). The updated advancement has been identified to bring positive results towards integration of this emergence and the students' learning. This is in turn suggests for the concept of IR 4.0 to be implemented onto them. In order to deal with the challenge brought by IR 4.0, Professor Klaus Schwab, Founder and Executive Chairman of the World Economic Forum has enlightened that university students must enhance their 4C elements which are Critical Thinking and Problem Solving, Communication, Collaboration and Creativity. A total of 50 students from different courses of Diploma level participated in this study. A set of questionnaires was distributed to collect relevant findings. This study reveals that the students are ready for the arrival of IR 4.0 as they are encouraged with various learning styles, interest, motivation and student's engagement in the new norm of the industrial revolution. The outcomes from this study will assist students and also instructors through the implementation of IR 4.0 in teaching and learning process in the classroom.

Keywords: Internet of Things (IOT), Industrial Revolution 4.0 (IR 4.0), Critical Thinking and Problem Solving, Communication, Collaboration and Creativity.

## Introduction

New era has evolved which then lead to the emergence of Internet of Things (IOT) and Industry Revolution 4·0 (IR 4.0). Both have become part of the concepts in order to achieve the exact momentum locally and internationally when they become the core initiative of the government in every aspect in human beings' living. The government has identified the importance of integrating the IR 4.0 in order to keep up with the updated advancements. Back then, the first Industrial Revolution was initiated by the creation of steam engine in the years of 1760-1830, which then followed by the second phase of the revolution that motivated by the invention of electronic power in somewhere around 1870-1914. After that, IR 3.0 was then developed to the excessive usage of computer and information technology in 2000. In order to meet the demand of today's fast changing world, IR 4.0 is developed based on the concept of economic and infrastructural advancement brought about by the automation of human activities through software. These software or applications used are acting as a medium to stimulate business activities yet with less human power needed. In other words, it is a mean of synchronizing the physical and digital world which then leads to industrial efficiency as it enhances the connectivity of humans and machines.

Industry Revolution 4.0 (IR 4.0) is originated from the idea of *Industrie 4.0* proposed in German to be used as a high-tech strategy of a project. *Industrie 4.0* aims to shift German manufacturing into making cyber-physical systems and Internet of Things (IoT) its core as well as to focus more on production, people, environment, and security. Unlike the previous Industrial Revolution, IR 4.0 aims generally to transform industries while assisted by information and communication technology specifically intelligent machines. According to Aida & Norhayati (2018), artificial intelligence and digital-physical frameworks-controlled IR 4.0 as they make the human-machine interface more common.

IR 4.0 demanded that human capital be equipped with not only the high-tech industrial set but also the capability to think critically, innovatively, and creatively. According to the Founder and Executive Chairman of the World Economic Forum, Professor Klaus Schwab, IR 4.0 urged university students to develop 4C elements which are

Critical Thinking and Problem Solving, Communication, Collaboration, and Creativity. This demand has urged the education industry to cater to the future market necessities and make changes based on the design principle of IR 4.0. In 2018, the Ministry of International Trade and Industry (MITI) has produced the National Policy of Industry 4.0. In this policy, MITI addressed its concern on the challenges faced in coping up with the market requirement of the human capital of IR 4.0. MITI stated that Malaysia has a prominent number of required talents, skills, and knowledge shortage for IR 4.0.

To face this upcoming challenge, the Malaysia Ministry of Education (MoE) (n.a) has developed the Malaysian Education Blueprint 2013-2015. Among the outcome stated in the blueprint is to develop thinking skills consisting of life-long learning, critical thinking, reasoning, creative thinking, and innovation. Despite that, Meylind, Faaizah & Naim (2016) expressed their concern that education needs to adjust their method of training students to prepare them for IR 4.0. Even Professor Klaus Schwab (n.a) stated his concern that organization (in this case education) are unable to cope up with changes from IR 4.0. Based on this concern, a hypothesis can be formed stating that there are possibilities that students from higher education are unaware of IR 4.0. Therefore, this study aims to investigate awareness of the arrival of Industrial Revolution 4.0 amongst students in the higher learning institution.

## Literature Review

Education runs in 21st century based on embracing the digital technology as the future generation is expected to cope with the race of the fast-changing world nowadays. As they have to live with the changing times, they are molded to be tech-savvy especially in dealing with the education sector. Higher Education Minister, Dato' Seri Haji Idris Bin Jusoh recently mentioned that higher education institutions have to be prepared to adapt and make changes in their curriculum and the way to teach and deliver the syllabus to the students so that the graduates are eligible to fill in demand jobs which are going to emerge in future. In the Education 4.0 framework, challenges of the fourth Industrial Revolution (IR 4.0) are addressed in relation to the Malaysia Education Blueprint for Higher Education 2015-2025. The future graduates who are equipped with ICT and collaborative skills are also required to possess critical and creative thinking and communication skills. Statistics depict that the number of unemployed graduates in Malaysia is tormenting. Employers are seeking for fresh graduates who are provided with the capabilities to face the industry compared to the passive ones as they are expected to function adequately in their job. In order to meet this demand, educators have to make sure that the education framework provided for the students as well as their way of delivering are relevant in accordance with IR 4.0. Awareness of the students towards this emergence should be enlightened in order to guide the students to lead in the correct path in their learning period. The majority of previous researches on IR 4.0 and education focus on effect/impact and current trend. Meylind, Faaizah & Naim (2016) studied the current trend overview of Malaysian higher education system towards IR 4.0. They explored their data from the perspective of Malaysian and discovered that the Malaysian government is ready for IR 4.0 and Education 4.0 and is making necessary preparation to welcome them. This preparation in education can be seen through the redesigning of the higher education system and the creation of Malaysia Education Blueprint 2015-2025.

Anealka (2018) discussed the nine trends of Education 4.0 to be used as ideas for teaching language classrooms. She revealed that educators need to adopt technologies in their teaching as proposed in Education 4.0 as this idea describes the learning preference of students in the current generation. She suggested that the flipped classroom approach is adapted into learning activities to support students' Social-Emotional Learning. Generally, Anealka (2018) urged educators to welcome the changes proposed by Education 4.0 to build a creative teaching design.

Aida & Norhayati (2018) discusses the repercussion of IR 4.0 in the education system. They revealed that information management is the biggest issue faced by the education industry in Malaysia. They shared their concern on how education organization could manage big data and Artificial Intelligent (AI) ethically. Aida & Norhayati (2018) suggested that Malaysia needs to form a Code of Ethics and Responsible Conduct to monitor IR 4.0 advances.

Benešová & Tupa (2017) wrote their paper on the identification of job roles in companies. They discovered that there will be a requirement for companies to hire educated and skilled workers when it comes to the field of computing, self-learning algorithms, and data analysis. They discussed that in the future there will be needs to create new curricula and disciplines, as well as transforming existing ones.

Puncreobutr (2016) discussed the new challenges of learning from Education 4.0. He stated that learning management needs to transform according to the changing behavior of the learner. Learning management needs to take into account not only 21st Century Skills but also Social & Virtual Learning. However, this proves to be a challenge to learners' ability to discover further.

As mentioned before, the current studies on education and IR 4.0 revolves around effect/impact and current trends. Every study discussed here emphasizes the challenges faced by education industries from IR 4.0 and how to overcome them. These studies support the concern stated by Professor Klaus Schwab (n.a) and specifically explored certain issues of the education for IR 4.0. However, studies do not look at students' perspectives and research on IR 4.0 awareness has become a part of the research instead of the main focus. Thus, this study catered to the lack of studies that involve students' perspective and focuses on the IR 4.0 awareness aspect of education.

## Research Objectives

The main purpose of the study is to inspect the readiness of the arrival of Industrial Revolution 4.0 among Diploma students in a higher learning institution. Hence, the objectives of the study are to:

1. Identify the percentage of Diploma students who are ready for the arrival of Industrial Revolution 4.0.
2. Discover how Industrial Revolution 4.0 can assist the students' learning.

## Research Questions

This study pursued in answering the following research questions:

1. What are the percentages of students' readiness for the arrival of Industrial Revolution 4.0?
2. How can Industrial Revolution 4.0 assist the students' learning?

## Methodology

## Sampling

This study employed cluster random sampling technique in order to gather all the data. In this study, the respondents were 50 Diploma students in a same higher learning institution. The respondents were required to answer three questions which being asked in the questionnaire.

## Research Instrument

This study aimed to explore on the readiness of the Diploma students towards Industrial Revolution 4.0 using a set of questionnaires. Three questions were being asked to 50 Diploma students and this instrument has provided quantitative and qualitative data which then analysed thematically.

## Results

**Research Question 1**

**Are the students ready for the arrival of Industrial Revolution 4.0?**

| Responds | Percentage |
|---|---|
| Yes | 95% |
| No | 5% |

**Table 6.1.1**

Based on Table 6.1.1, 95% of the 50 respondents responded that they are ready of the arrival of Industrial 4.0 meanwhile 5% responded negatively about it. Although majority of the respondents gave positive responds, most of all the respondents did not really understand what 'Industrial Revolution 4.0' is and the researcher had to explain in details of what does the subject matter means. Then only the respondents were able to elaborate their responses in the next question.

**Research Question 2**

**How can Industrial Revolution 4.0 assist the students' learning?**

Based on the responses done by 50 respondents, there are a few areas on how Industrial Revolution 4.0 assists their learning. These responses are analysed thematically and simplified into few themes and projected in Table 6.2.1

| Areas that assisted by IR 4.0 | Percentage |
|---|---|
| Motivation | 15% |
| Student engagement | 15% |
| Interest | 25% |
| Varying learning styles | 45% |

**Table 6.2.1 Areas assisted by IR 4.0**

According to Table 6.2.1, it is exhibited that IR 4.0 has provided the students with various learning styles (45%) where they are able to explore not just in the classroom but in the industry field. One of the respondents (Respondent 19) stated that he experienced a lesson where his lecturer assigned the students to come out with

an innovation which has not been in a normal physical class before. Other than that, Respondent 24 specified there was once when one of her lecturers in English classroom asked the students to think of a product to be marketed to the new millennials and then they have to speak in front of the class about the product, and according to her, it was a fun activity as it initiated their confidence to speak in English besides letting them practice their communication skill and also the students' creativity. Secondly, interest is the second highest factor of all (25%). Respondent 13 claimed that Industrial Revolution 4.0 does attract her to participate in a more active manner as it provides space for her to explore on her creativity by assistance of the internet. Students' engagement and motivation marked the same number (15%) of the total respondents' answers.

## Discussion

This study was conducted to obtain information on the readiness of Diploma students on the arrival of Industrial Revolution 4.0. The participating students' readiness is at high level yet it can be concluded that they are still not aware of the concept of the fourth industrial revolution as they still have to be explained on the subject matter before they can start answering the next subjective question. This means that more works need to be done and more efforts have to be implemented in order to make the students to be ready to learn based on the IR 4.0 requirements. The findings of this study also assist the academicians to discover novel ideas in designing updated lessons in order to meet the students' needs in coping with the demands in IR 4.0 era based on the assistance as stated in Table 6.2.1. These findings suggest that the students are actually ready to learn based on IR 4.0 concept, but they are not exposed to it in a maximum way. They still need to be guided on the importance of current technological development in their learning. On the other hand, the lecturers themselves should also be ready to face this emergence of teaching method. They should practice IR 4.0 elements in their teaching process so that the students' learning process based on the concept of the current industrial revolution is effective and useful for them especially when they are working in the future.

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VSTL07

# The Study of Applying the Six Methods in Forming Chinese Characters (六书) for the Teaching of Chinese as the Third Language at UiTM Terengganu

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**Abstract**

Learning Chinese characters is essential in learning Chinese language, especially in learning Chinese as a foreign language or the third language. However, it is often observed that Chinese characters learning is deemed to be the weakness for non-native Chinese learners. Six Methods of forming Chinese characters (六书) is the most basic and unsophisticated method to study Chinese characters since ancient times. After analyzing the structures of Chinese characters and explaining the rationales of the structures of these Chinese characters, these non-native students were able to learn the Chinese culture which were carried in these Chinese characters. It will certainly enhance the joy of learning in the learning process. By applying the Six Methods of forming Chinese characters (六书) in interpreting and elaborating the explanation on these Chinese characters, the non-native students can have a better and deeper understanding of Chinese cultures. These non-Chinese students who were from different nationalities and races can apprehend and appreciate Chinese culture more. This also can contribute to the building of national unity in Malaysia.

Keywords：Six Methods of forming Chinese characters (六书), teaching Chinese as a foreign language or third language (对外汉语), Chinese characters instruction

## Introduction

There were many benefits and applications on the use of the knowledge of the study of characters or philology language instruction for the teaching of Chinese as a foreign language (Zhang, 2013, pp.316). The issue is on how to heighten the knowledge and understanding of these knowledges in philology.

## THE USEFULNESS OF SIX METHODS OF FORMING CHINESE CHARACTERS（六书）

The Six Methods of forming Chinese characters (六书) is the most basic and unsophisticated method to study Chinese characters since ancient times. The names of Six Methods of forming Chinese characters (六书) adhered to *Shuowen Jiezi* (《说文解字》), the dictionary during East Han dynasty (202 BC–9 AD) (Xu, 1978, pp.314b).

After analyzing the structures of Chinese characters and explaining the rationales of the structures of these Chinese characters, non-native students were able to learn the Chinese culture which were carried in these Chinese characters. Hence, the practicality and the usefulness of using knowledge of Chinese etymology is unquestionable and undoubtedly suitable (Wei, 2018, pp.169).

## APPLYING THE SIX METHODS OF FORMING CHINESE CHARACTERS (六书): USING THE EXAMPLE OF UiTM

The Six Methods of forming Chinese characters (六书) were commonly defined by the current scholars and researchers as pictogram (象形), ideogram (指事), combined ideogram (会意), ideogram plus phonetic (形声), transfer character (转注) and loan character (假借). Learning Chinese characters with animated etymology is hence beneficial to these non-native learners of Chinese (Huang, 2014, pp.65).

### *A. Pictogram (象形)*

Pictogram are the Chinese character derived from a picture. It is sometimes called hieroglyph.

**Table 1: Pictogram in textbooks of UiTM**

| Mandarin level | Chinese characters | Pinyin and meaning | Transcripts on the bones (甲骨文) | Transcripts on the bronze (金文) | Lesser seal character (小篆), adopted c. 213 BC during the Qin Dynasty for the purpose of standardizing the script | Representing |
|---|---|---|---|---|---|---|
| Level 1 | “人” | rén, human |  |  |  | Representing the side view of human being. |

### *B. Ideogram (指事)*

The ideogram is one of the Six Methods of forming Chinese characters (六书). These Chinese characters indicate idea by putting symbols.

**Table 2: Ideogram in textbooks of UiTM**

| Mandarin level | Chinese characters | Pinyin and meaning | Transcripts on the bones (甲骨文) | Transcripts on the bronze (金文) | Lesser seal character (小篆), adopted c. 213 BC during the Qin Dynasty for the purpose of standardizing the script | Representing |
|---|---|---|---|---|---|---|
| Level 1 | “上” | shàng, up |  |  |  | The symbol above horizontal line representing up. |

### *C. Combined ideogram (会意)*

These combined ideograms are associative compounds.

**Table 3: Combined ideogram in textbooks of UiTM**

| Mandarin level | Chinese characters | Pinyin and meaning | Transcripts on the bones (甲骨文) | Transcripts on the bronze (金文) | Lesser seal character (小篆), adopted c. 213 BC during the Qin Dynasty for the purpose of standardizing the script | Representing |
|---|---|---|---|---|---|---|
| Level 1 | “好” | hǎo, good |  |  |  | The combination of the elements of “女”(nü, female )字and |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | “子”(zi, male) representing the meaning of good (好, hao). |

*D. Ideogram plus phonetic (形声)*

These ideogram plus phonetic characters are also called picto-phonetic characters, with one element indicating meaning and the other indicating sound.

**Table 4: Ideogram plus phonetic characters in the textbooks of UiTM**

| Mandarin level | Chinese characters | Pinyin and meaning | Representing |
|---|---|---|---|
| Level 1 | “爸” | bà, father | The sound part is “巴” (bā) and the meaning part is father (父, fu). |

*E. transfer character (转注)*

The transfer characters are mutually explanatory or synonymous characters.

**Table 5: Transfer characters in the textbooks of UiTM**

| Mandarin level | Chinese characters | Pinyin and meaning | Representing |
|---|---|---|---|
| Level 1 | “老” and “考” | lǎo and kǎo, old | Both the shapes of the characters, the semantics of the characters and the sound of the characters are similar and transferable, which representing the meaning of old age. |

*F. Loan character (假借)*

The loan characters are phonetic loan characters; characters adopted to represent homophones.

**Table 6: Loan characters in the textbooks of UiTM**

| Mandarin level | Chinese characters | Pinyin and meaning | Transcripts on the bones (甲骨文) | Transcripts on the bronze (金文) | Lesser seal character (小篆), adopted c. 213 BC during the Qin Dynasty for the purpose of standardizing the script | Representing |
|---|---|---|---|---|---|---|
| Level 1 | “我” | wǒ, I |  |  |  | “我” was a kind of weapon which was loaned to represent the meaning of I. |

## THE TEACHING METHODS OF SIX METHODS IN FORMING CHINESE CHARACTERS (六书)

When teaching pictogram (象形) characters, ideogram (指事) characters and combined ideogram (会意) characters, instructors can use pictures or animations to explain the meaning of the words, because these words are closely related to pictures. During teaching ideogram plus phonetic (形声) characters, instructors can divide this kind of characters into ideogram part (意符) and phonetic part (声符). Majority of ideogram parts (意符) are section headers, while the phonetic part (声符) are mostly

character component(**偏旁**). The instructors can use the term of synonyms to explain the meaning of transfer characters (转注). When teaching loan characters (**假借**), instructors can explain the original meaning first and then elaborate the extended meaning of the characters.

### THE EFFECTIVENESS APPLYING THE SIX METHODS IN FORMING CHINESE CHARACTERS (六书) FOR THE TEACHING OF CHINESE AS A FOREIGN LANGUAGE

It is practical and pragmatic to apply the theory of Six Methods in forming Chinese characters (六书) for the teaching of Chinese as a foreign language, as it eases non-native students to learn and absorb Chinese characters. First, the interpretation of the rationale of Chinese characters had been developed and matured in the pre-Qin period. In the theory of Six Methods in forming Chinese characters (六书), there has been a profound understanding of the structure of Chinese characters, and a rich and accurate analysis for the formation of Chinese characters in *Shuowen Jiezi* (《说文解字》.The theory of Six Methods in forming Chinese characters (六书) is scientific and systematic, Xu Shen put forward the theory of the Six Methods in forming Chinese characters (六书) in *Shuowen Jiezi* (《 说文解字》) and gave a comprehensive and authoritative explanation of the theory. The structure of Chinese characters has formed a complete scientific system since Lesser seal character (小篆) developed (Zhang, 2013, pp.317).

Besides, the interpretation of Chinese characters by the theory of Six Methods in forming Chinese characters (六书) is not only funny and interesting, but also easy to understand and remember. Lastly, the theory of Six Methods in forming Chinese characters (六书) teaching method is very interesting for students.

## Conclusion

The objective and purpose of this study is to discuss and explore a better learning method for non-native learners or students to learn and understand the structure of Chinese characters and to memorize Chinese characters easier. The Six Methods in forming Chinese characters (六书)'s theory is to divide Chinese characters into six categories, so that learners or students can learn the Chinese characters according to different types of characters, so that they can learn Chinese characters easier and understand the structure of Chinese characters better and deeper.

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VSTL08

# Assessment of Psychomotor Domain in Hydraulics Laboratory

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**Abstract**

Graduate students, particularly in engineering courses, are required to have high knowledge in engineering and technical skills. As the technology evolving rapidly, Institutions of Higher Learning should produce qualified graduates to fulfil demand in the engineering industries upon receiving accreditation from the Engineering Technician Education Programme Accreditation Standard (ETAC). A good programme should have proper Programme Outcomes, developed based on three domains from Bloom's Taxonomy that comprised of cognitive, psychomotor and affective. The overall goal of engineering education is to prepare students to practice engineering. Psychomotor domains help students to improve their technical skill. To improve student's technical skills, engineering laboratory courses allow students to apply engineering knowledge and conduct experiment on their own. Their skills will be assessed based on methodology and rubrics. The assessment rubric is a combination of four aspect domains consist of perception, set, guided response and mechanism. The analysis consists of categorizing the students in terms of their performance by comparing between two assessments, Practical Test 1 and 2. The marks obtained by students were evaluated based on four categories; poor, weak, average and good.

Keywords: Technical skills, Engineering knowledge, Psychomotor Domains, Rubrics.

## Introduction

Nowadays, technology in Engineering has evolved rapidly with time. Engineering technology requires high knowledge in engineering and application of scientific activities. Technical skills are also important to apply knowledge and scientific activities. Graduate students are required to have those skills as most of them will be working in the industries as engineering technicians in various fields such as technical operation, site supervisor, test laboratory, quality controls and many more. In order to produce a qualified graduate, institutions of higher learning must receive accreditation from the Engineering Technician Education Programme Accreditation Standard (ETAC). The objective of the accreditation is to ensure that graduates of the programme fulfil the minimum academic and practical requirements for registration as engineering technicians (Engineering Technology Accreditation Council, 2019).

Bloom's Taxonomy describes the classification of learning into various domains (Bhargav, 2015). Programme Outcomes (POs) have been developed in designing curriculum for engineering courses based on three domains from Bloom's Taxonomy which are cognitive, psychomotor and affective. There are twelve (12) POs for Diploma Programme in Civil Engineering (EC110) in Universiti Teknologi Mara. These POs refer to the general attributes of knowledge (cognitive), skills (psychomotor) and behaviour (affective) that students should know and able to attain upon their graduation

The assessment created for all the courses in the programme must be suitable for students to achieve all the POs and the domains. The overall goal of engineering education is to prepare students to practice engineering (Daud, 2018). Psychomotor domains help students to improve and nurture their technical skill. Psychomotor domain is very important as engineering students need to develop their technical skills (Baharom, 2015). The psychomotor domains of perception, setup, response, controlled movement and mechanism should be applied in all teaching methods, teaching strategies and practical workshops. Psychomotor in learning is present in physical skill with the demonstration of equipment or tools in the classroom, workshop and laboratory (Ahmad, 2018).

Previous researches have shown that laboratory experiment helps to encourage student's ability to

practice technical skills. Through laboratory experiments, the student will have the opportunity to experience and practice their practical and hands-on skills (Baharom, 2015). To make sure students achieve the required psychomotor skill, a set of assessment must be created that able to measure student's skill according to different aspects. A complete methodology and proper rubrics for assessment must be developed and planned in order to achieve the programme's outcomes. Thus, the objective of this research is to measure the effectiveness of tools and delivery method of psychomotor assessment for Basic Hydraulics course.

## Methodology

Basic Hydraulics is a core subject for year two students in the Faculty of Civil Engineering (FCE) at the University of Technology MARA, UiTM. This course deals with the laboratory works on fluid and hydraulic areas covered in pre-requisite subject and embedded subject in year two. The assessment on this course covers practical tests, observation on laboratory works and final examination. Psychomotor domain was assessed based on the practical tests. The psychomotor domain on this course measured the ability of students to investigate well-defined problems through experiments conducted following the standard tests and measurements.

Laboratory works for all courses in FCE were conducted based open-ended system. The open-ended system for the laboratory is conducted where the experiments are not fully guided as compared to the traditional method. It enhances students' independent learning through their innovative and creative thinking to solve problems given by conducting experiments. For this course, the open-ended laboratory levels are Level 0 and Level 1, which is suitable for the students' level for year two at the programme level. Level 0 is known as the traditional method for teaching and learning for laboratory class, while Level 1 is an open-ended laboratory with 33% level of openness. For Level 1, students were given preamble, problem statement, and ways and means for students' references before conducting the experiments. However, the data to be obtained and analysed were not guided in the laboratory manual. Students in a group need to explore what data to be obtained and analysed based on the problem statement, objectives and equipment in the laboratory.

Through open ended-laboratory, it helps students to develop competence in executing and applying the experimental work. Students were proposed to acquire the data to be analysed in order to achieve the objectives of the laboratory works depending on the level of openness. The laboratory manual is prepared based on the openness level in OEL for this course.

In the early semester, students were given laboratory briefing on OEL. It is important for students to understand OEL before starting their laboratory works. List of laboratories also was given beforehand based on the level of openness so that students will be prepared every week before conducting laboratory by following the lesson plan. Students worked in a group of a maximum of four students to complete the experimental works and laboratory reports until the end of the semester.

Laboratory reports and observation during experimental works were assessed as a group assessment based on rubrics provided. The group assessment is based on the affective domain while the individual assessment is based on the psychomotor domain. The individual assessment contributed large marks for students and consists of two practical tests. Practical tests were evaluated based on rubrics provided and the same rubric is applied for both tests.

Students' attainments for psychomotor were evaluated for session September 2018 – January 2019. The marks obtained by students were evaluated based on four categories as poor, weak, average and good. The number of students based on the categories achieved was compared and analysed for Practical Test 1 and Practical Test 2.

## Result Analysis and Discussion

Table 1 presented the results of Practical Test 1 and Practical Test 2 of students for September 2018 – Jan 2019 session. The analysis consisted of categorising the students in terms of their performance marks, as shown in Figure 1.

**Table 1**
Performance Marks Categories

| *Marks* | *Category* | *Number of students* | |
|---|---|---|---|
| | | *PT1* | *PT2* |
| **0 – 4** | Poor | 2 | 3 |
| **5 – 8** | Weak | 3 | 1 |
| **9 – 12** | Average | 25 | 23 |
| **13 – 15** | Good | 46 | 49 |

**Figure 1**
Percentage of Student's Performance Marks

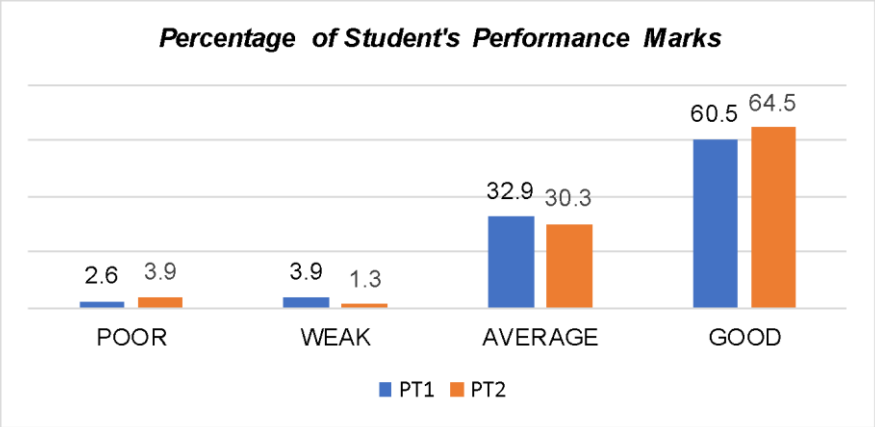


Figure 1 shows the percentage of the student's performance marks for Practical Test 1 (PT1) and Practical Test 2 (PT2). During PT1, about 60.5 % of students were in a 'good' range, 32.9 % were in an 'average' range, 3.9% were in a 'weak' range and 2.6% were 'poor'. Compared to the performance marks during PT2, 64.5% of students were in a 'good' range, where the percentage has increased about 4%. Then, 30.3% were in 'average' range, decreased by 2.6%, 1.3% were in 'average' decreased from 3.9% during PT1 and 3.9% were 'poor' where the percentage increased from 2.6% during PT2. It shows that the students' performance increased because the topics for the PT2 were on Basic Hydraulics. This implies that they learn the theoretical and practical at the same time.

The results also indicated that during the PT1 and PT2, the majority of the students were in 'good' category where they were able to demonstrate almost all the psychomotor skills in order to conduct an experiment. They were able to identify the given problem based on scenario completely, completely displayed the right use of PPE for a laboratory test, set up the equipment within the given time, demonstrate and conduct the experiment with more than 81% completed and demonstrate care and respect for equipment with minor or without guidance.

The 'average' category was the second-highest percentage, shows that some of the students in this range are able to organise and perform experiment well, but the percentage of completed the experiment is less than 81%. They may have skipped one or two steps/procedures while conducting the experiment and required minor guidance during demonstrating care and respect for the equipment.

It needs to be highlighted that 3.9 percent (PT1) and 1.3 percent (PT2) of the students were in the 'weak' category. These students were not able to conduct the experiment well during the practical test. They may have skipped more than three steps/procedures during demonstrating the experiment and need major help to demonstrate care and respect for the equipment. Some of the students were not able to recognise or choose the right apparatus required to conduct the laboratory test depends on the given problem. Lastly, for the 'poor' category, the contributions of the percentage were from the absent students during the practical test. Although this only applied to a minority of students, however, this is

an important issue need to be overcome as soon as possible. The lecturers need to give extra information and guideline to the students on laboratory activities to overcome the problems. Apart from that, the lecturers need to put more effort in conducting the lecture session or show a demonstration video to the students on how to operate the laboratory equipment.

## Conclusion

Psychomotor domain is very important in teaching and learning, especially for engineering students. Assessment on psychomotor domain has been applied in many programmes including Basic Hydraulics courses of Diploma Programme in Civil Engineering (EC110) in Universiti Teknologi Mara. The implementation of methodology for this course has been described. The student's performance marks are divided into four categories; poor, weak, average and good. The analysis shows that more than 50% of students obtained a good category for both practical tests. However, there were a few numbers of students that achieved poor and weak categories. Hence, improvements should be considered to ensure student's performances are in good categories.

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VSTL09

# Blended Learning in Entrepreneurship Education: The Assessments of the Measurement Model using SmartPLS

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**Abstract**

Scholars of blended learning are calling for more empirical research in the area of blended learning in entrepreneurship education. Therefore, the aim of this study is to develop a measurement model that involved student interactions, motivation and student engagement on satisfaction in blended learning among entrepreneurship students. This study was underpinned by the Self-Determination Theory (SDT). The respondents of this study are Universiti Teknologi MARA (UiTM) students who enrolled Fundamental of Entrepreneurship (ENT300) and participated in the flipped classroom module. ENT300 is a university subject, hence massive enrollment is expected every semester. Questionnaires were distributed to the respondents 15 minutes before the class ends in Week 14. The measurements for all constructs were adapted from previous scholars and approved by the ethical committee of the university. Data was analyzed using SmartPLS. The results indicated that the measurement model achieves its reliability and validity thus valid for further analysis. This study contributes to the empirical literature of entrepreneurship education and the practices on handling a massive enrollment using blended learning. The conclusions and recommendations for future research are also presented in this study.

Keywords: Blended Learning, Entrepreneurship Education, UiTM, measurement model, SmartPLS

## Introduction

Blended learning is becoming more important since the pandemic of Covid-19 started. Majority of universities around the world move their learning to the online platform. For the subject of Fundamental of Entrepreneurship (ENT300) in the Universiti Teknologi MARA (UiTM), this pandemic has not affected much. Even though this subject is a university subject with massive enrollment every semester, UiTM can be calm with experience learned since 2012. An article by Noraini, Ramayah and Noor (2020) discussed about the scenario of handling massive enrollment for ENT300 in UiTM Perlis using flipped classroom. However, the discussion does not end there because the need of handling this subject should be improved to align with the students' needs.

Even though blended learning is widely used, but scholars of entrepreneurship education raised their concerns with the use of technology to facilitate teaching and learning in the area. As such, scholars like Ratten and Usmanij (2020) urge more studies to be conducted relating to integrating the technology in teaching and learning activities in entrepreneurship education. Satisfaction has always been used as an indicator of the usage of blended learning (Shen & Ho, 2020; Yeop, Yaakob, Wong, Don, & Zain, 2018). Other factors that have always been used are student motivations (Wong et al., 2019), student interactions (Ahmed, Ahmad, Ahmad, & Zakaria, 2019; Najafi & Heidari, 2018) and student engagement (McCardle, Young, & Baker, 2019; Nasirun, 2017; Zhou, Chen, Fan, & Ji, 2019) and among the important variables that have been identified to give impact to the satisfaction among students who used blended learning. Moreover, student engagement can serve as the mediator in the blended learning setting (Guo, 2018)

Hence the aim of this study is to develop a measurement model of blended learning for ENT300. Satisfaction is used to measure the usage of blended learning among students. While student motivation, student interactions and student engagement have been identified to give an impact on satisfaction. We used Self-Determine Theory (SDT) as the theory to underpin this study. The theory supports the research framework to explain the influence of motivation to promote student engagement and satisfaction among students in the self-regulated learning environment.

## Research Methodology

*Respondents and Data Collection Procedure*

Data were collected from diploma students who enrolled for the Fundamental of Entrepreneurship (ENT300) in the Universiti Teknologi MARA (UiTM) Perlis Branch (UiTM Perlis). In UiTM Perlis, questionnaires were distributed at week 12, after students have completed with the submissions of their assessments.

*Measurement*

The measurement consists of 58 items for measured variables (Student Interactions, Student Engagement, Satisfaction, Efficiency, and Effectiveness), adapted from previous scholars. The items for Satisfaction were adapted from Kuo et al. (2014). Student Interactions was adapted from Kuo et al. (2014), and measured using three dimensions namely Student-Content, Student-Instructor and Student-Student. Moreover, Student Engagement was adapted from Dixson (2010), measured using three dimensions known as Emotional, Participation and Skill. Finally, Motivation was adapted from the revisited measurement of the need for satisfaction by Standage, Duda and Ntoumanis (2005) namely anatomy, competence and relatedness.

## Results

*Respondents Profile*

There were 281 respondents participated in this study. All of them were diploma students at Universiti Teknologi MARA (UiTM) Perlis Branch. The gender distribution is 81 (28.8%) male while 200 remainings were female (71.2%). The age distributions are 207 (73.7%) of age 20 years old, 62 (22.1%) of age 21 years old, 9 (3.6%) of age 22 years old, 2 (0.6%) of age 23 years old and 1 (0.4%) of age 25 years old. A total of 100 (35.5%) respondents were business students, while 181 (64.5%) were non-business students.

*Preliminary Analysis*

In the preliminary analysis, we analyze normality and common method variance. We test the data distribution using the skewness and kurtosis calculator (https://webpower.psychstat.org/) (Cain & Zhang, 2016). The result indicates that the skewness: $\beta = 1.732$, or for kurtosis: $\beta = 44.073$, hence this set of data is qualified for a non-parametric analysis with bootstrapping function. Also, we addressed the issue related to the common method variance by using the full collinearity estimates (Kock & Lynn, 2012). The result indicates that the VIF values for the variables all are below 3.3: Student Interactions (1.856), Motivation (2.269), Student Engagement (2.519) and Satisfaction (1.764) thus confirming that this set of data is free from the common method variance.

*The Assessments of the Measurement Model*

We used SmartPLS version 3.2.9 to test the measurement model for the research framework. This study using a higher-order construct model design and it consists of reflective-formative constructs. We used the disjoint two-stage approach as proposed by Sarstedt, Hair, Cheah, Becker, and Ringle (2019).

There are three constructs for this study formed by the lower order components: namely Student Interactions, Student Engagement, and Motivation. Student Interactions' lower-order components are Student-Content, Student-Instructor and Student-Student. Whereas, Student Engagement was formed by Emotional, Participation and Skill. Finally, motivation consists of anatomy, competence and relatedness. In stage two, these single-item scores were measured the higher-order construct for the model (Student Interactions, Student Engagement, and motivation), while satisfaction is measured using standard multi-item.

The loading for Satisfaction items is between 0.723 and 0.851. The average variance extracted (AVE) is 0.615 and CR is 0.888. The AVE is above the threshold value of 0.5 and the composite reliability

(CR) is above 0.8 (Hair, Risher, Sarstedt, & Ringle, 2019), hence achieve its reliability and convergence validity.

Table 1 exhibits the measurement model for the formative constructs (student interactions, student engagement and motivation). All t-value presented are significant at p<0.001. Except for participation, all VIF values are below 3.3. For participation, the variance inflation factor (VIF) is 3.315 and slightly above 3.3, but we accept this value with the condition if we round up this value to one decimal point, it will be 3.3. The result presented in this table concludes that the second-order constructs are valid for further analysis.

**Table 1**
Assessment of the measurement model
(second-order construct - formative)

| Constructs | Dimensions | Beta | t-Value | VIF |
|---|---|---|---|---|
| Interactions | Student-Content Interaction | 0.835 | 43.736 | 2.213 |
| | Student-Student Interaction | 0.915 | 82.062 | 2.687 |
| | Student-Instructor Interaction | 0.877 | 47.220 | 2.450 |
| Motivation | Anatomy | 0.857 | 51.636 | 2.365 |
| | Competence | 0.845 | 45.353 | 2.708 |
| | Relatedness | 0.734 | 16.906 | 1.331 |
| Engagement | Emotional | 0.909 | 76.071 | 2.785 |
| | Participation | 0.909 | 76.071 | 3.315 |
| | Skills | 0.896 | 65.818 | 3.075 |

We used the Heterotrait-Monotrait Ratio of Correlations (HTMT) to assess the discriminant validity of this model. The $HTMT_{value}$ for all constructs is below $HTMT_{0.85,}$ hence we can conclude this model has achieved its discriminant validity and valid to be the assessment of the structural model and hypotheses testing. See Table 2

**Table 2**
Discriminant validity using Heterotrait-Monotrait Ratio of Correlations (HTMT)

| Constructs | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1. Satisfaction | | | | |
| 2. Motivation | 0.672 | | | |
| 3. Student Engagement | 0.688 | 0.739 | | |
| 4. Student Interactions | 0.697 | 0.746 | 0.802 | |

## Conclusion and Recommendations

The result of this study shows that this measurement confirms its eligibility to use the bootstrapping function offered by SmartPLS and free from the common method variance issue. Moreover, the measurement model achieves its validity and reliability. This research model for this study is reflective-formative constructs. Hence, the use of SmartPLS is appropriate for this research model because of the software ability to analyze the higher-order construct model. With the result presented, this model is ready to be tested for structural model assessment. This research model confirms that the measurement model developed for this study explained the Self-Determine Theory, where student motivation achieves its reliability, convergence validity, as well as discriminant validity when tested together with student interactions, student engagement, and satisfaction. It indicates that motivation through anatomy, competence, and relatedness has the potential to influence the tested research framework. Further studies need to be conducted to test the impacts of these variables on the satisfaction and the possibilities to use student engagement as the mediator in the blended learning setting, particularly in the entrepreneurship education context.

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VSTL10

# Students' Acceptance and Challenges of Online Learning During Covid-19 Pandemic in Higher Education Institution in Malaysia

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**Abstract**

Since March 2020, the outburst of COVID-19 has caused universities in Malaysia to close their operations. Hence, Malaysian universities have to initiate online learning. However, there are some negative effects of online learning towards students' motivation, performance and mental health. Moreover, a crucial point for lecturers is to understand the students' acceptance and challenges of online learning in order to reduce the negative effect of online learning. Thus, this study intended to investigate the acceptance and challenges of online learning among students during COVID-19 pandemic. Responses were obtained from 320 undergraduate students from one of universities in Johor, Malaysia. The findings explained that students faced challenges on social issues, such as lack of communication among them, lack of group discussion and they feel isolated during online learning which affect the learning process. Besides, most of the respondents surveyed reported moderate levels of online learning acceptance. This study recommends universities to improve on their infrastructure and talent capital to improve the online learning acceptance and reduce challenges faced by students.

**Keywords**: COVID-19, online learning, perception, challenges, acceptance

## Introduction

Coronavirus or COVID-19 pandemic has impacted human life in so many ways. It has also impacted the education system especially in higher education. With the implementation of physical distancing, most of face-to-face classes were discontinued due to the pandemic. The COVID-19 pandemic has opened our eyes on the importance of online learning for our students (Agarwal and Kaushik, 2020).

In the normal conventional learning environment, students have the advantages of two-way communication and fast responses from lecturers or instructors (Xu and Jaggars, 2014). Even though online learning can increase the flexibility and remove geographical barriers, there are some disadvantages of online learning such as lack of social interactions, time-inefficiency of developing content materials and the need for flexible tutorial support (Alraimi, Zo and Ciganek, 2015). Moreover, students or learners in online learning may encounter frustration, isolation, confusion and lack of interest in the subject matter (Adams et al., 2013). Due to its relative lack of structure, it is reported that online learning has hindered learning such as technical faults during the conduct of sessions and time limitation of the sessions (Agarwal and Kaushik, 2020). Online learning requires flexible teaching

approach, which allows the students to study from home and save some money and time compared to face to face learning (Jena, 2020; Allam et al*.,* 2020), however, to adapt to this new mode of learning is challenging and it will affect the students' motivation and performance.

As informed by Abbasi et al. (2020), students were not well prepared for online learning and the result indicated that more than 70% of students have negative perception towards online learning. Moreover, a study conducted in Malaysia by Allam et al. (2020) determined that the respondents were not motivated towards online learning during this COVID-19 pandemic. Other than that, online learning was reported to produce low-performing students (Atchley, Wingenbach, and Akers, 2013), and this has resulted to students or learners withdrawing from their studies as a result of their poor performance. In addition, previous studies also determined that online learning during COVID-19 pandemic lead to enhance the students' stress level and mental health issues (Al Ateeq et al., 2020; Rapper and Brown, 2020). As confirmed by Al Ateeq et al. (2020), university students faced high level of stress due to online learning. Depression, anxiety, stress, fear, irritated and demotivated are some of common emotional or mental health issues faced by the students during COVID-19 pandemic. Based on the above issues, this study aims to determine how well students at higher education institutions in Malaysia accept online learning as an instructional platform. The research objectives of this study are:

- To investigate students' acceptance of online learning during COVID-19 pandemic and
- To investigate possible students' challenges of online learning during COVID-19 pandemic

Conducting this study helps to acknowledge academicians and university on the students' feeling and difficulties, thus it provides a clear picture for them to improve the ways of implementing online learning in order to reduce the negative effect, and the learning process can be delivered more effectively and efficiently.

## Literature Review

### Acceptance of online learning

Students' acceptance can be defined as "the demonstrable willingness within a user group to employ information technology for the tasks it is designed to support". The Government of Malaysia had announced the implementation of movement control order (MCO) in March 2020. This has affected the changing of teaching mode especially among higher education institutions. This has also resulted in universities to change the mode of teaching towards online learning (Allam et al., 2020). Even though online learning is expanding in the Malaysian higher education institutions, the question of how well students accept online learning as a learning medium has not been well-studied (Yiong, Sam and Wah, 2008). A study by Subedi et al. (2020) found that even online learning reduce time, travelling cost and risk of accident but more than half of students still prefer study at school compared to online class. Students with high level of acceptance towards online learning have indicated that the course was convenient. However, some students and learners encountered some difficulties with the online learning or web-based learning environment (Yiong et al*.*, 2008). The students noticed that the online learning (web-based course) is a new form of learning and more guidance is needed to adapt to the learning environment. Therefore, for this study, acceptance was derived from a study by Chow, Che Mat and Ng (2006) on students' readiness in accepting online learning.

### Challenges of online learning during covid-19 pandemics

A study conducted in Ghana by Aboagye (2020), indicates that social issues, lecturer's capability and accessibility issues are three important challenges faced by the students during online learning. The result shows that accessibility is the biggest challenge among the students. Technology devices, poor internet coverage and expensive internet plan are some of challenges frequently faced by the respondents. Jena (2020) and Alam (2020) supported on the accessibility issue which explained on the limited internet coverage and the high cost to purchase high speed internet and technology devices needed for online learning. In addition, students also have lack of knowledge in using the online learning

platform and technologies which affected the learning process during Covid-19 pandemics. Moreover, most of the students mentioned that they have adequate knowledge on the teaching platform but faced more difficulties on the internet problems which disturbed the online class (Subedi et al., 2020).

Besides, Rajab et al. (2020) pointed out that communication is the most important challenge faced by the students. Compared to face-to-face, online learning leads to limit the communication among students and lack of group discussion in completing their assignments (Jena, 2020).

Due to sudden shifting to online learning, academics also play important roles to ensure the teaching delivery meets the expectation. When the lecturer is not well trained and the students not properly assisted by the lecturer, it will affect the learning process. Besides, low quality of teaching materials is also one of the challenges for the students to understand the subject (Jena, 2020).

## Methodology

In this research, a quantitative cross-sectional survey was used. The survey was conducted at one of the universities in the state of Johor, Malaysia. The survey was distributed online and responded by 320 university students. Eighteen (18) items were adapted and modified from the work on COVID-19 and e-learning (Aboagye, Yawson, and Appiah, 2020) and student acceptance on e-Learning (Chow, Che Mat and Ng 2006). They were grouped into two dimensions namely (Acceptance and challenges). All items used in the questionnaire were found to be relevant in the context of Malaysia. A validity and reliability test were undertaken, and it indicated that the instrument was fit for use. In developing the questionnaire, consideration was given to the ease of use and simplicity of the questions (Zikmund, Babin, Carr, and Griffin, 2013). The instrument measured variables on a Likert-Scale of 5 points, from strongly disagree to strongly agree. The operationalization of the variables in this study lies within the scope description as shown in Table 1.

**Table 1:**
The Scope of Variables in This Study.

| No | Variable | Description | Sources |
|---|---|---|---|
| 1) | Acceptance of Online Learning | To investigate students' readiness in accepting online learning. | Chow, Che Mat and Ng (2006) |
| 2) | Challenges of Online Learning | To explore the challenges faced by students using online learning during the COVID-19 pandemic. | Aboagye, Yawson, and Appiah (2020) |

## Findings

### Demographics of Respondents

The summarized demographic profiles of the respondents can be found in table 2 below. The sample revealed that male respondents represented a lower percentage of the total respondents of (27.5%) or 88 respondents if compared to female respondents of (72.5%) or 232 respondents. With reference to their age group, the sample indicated that (98.1%) of the respondents belong to 17-22 years old age group and only (1.9%) belong to 23-28 age group. Interestingly, all respondents were undergraduate students (Bachelor's and Diploma students). In addition, most of the respondents were students from the Faculty of Business and Management (73.4%), followed by Faculty of Computer and Mathematical Sciences (15.6%), Faculty of Information Management (5.6%) and the rest were respondents from Faculty of Accounting (5.3%). Furthermore, the sample also showed that most of the respondents (60.6%) were from B40 category where the family income is less than RM4849, followed by M40 (33%) and the rest were respondents from T20 category, where the family income is above RM 10961.

Remarkably for current area of residence, most of the respondents were from town, followed by sub-urban (24.1%), and rural area (12.2%) respectively.

**Table 2:**
Demographic Statistics (N=320)

| | Demographic | Frequency | Percentage |
|---|---|---|---|
| **Gender** | Male | 88 | 27.50 |
| | Female | 232 | 72.50 |
| **Age group** | 17-22 years | 314 | 98.10 |
| | 23-28 years | 6 | 1.90 |
| **Program level** | Undergraduate | 320 | 100 |
| **Faculty** | Faculty of Business and Management | 235 | 73.40 |
| | Faculty of Accountancy | 17 | 5.30 |
| | Faculty of Computer and Mathematical Sciences | 50 | 15.60 |
| | Faculty of Information Management | 18 | 5.60 |
| **Family income range** | B40 (< RM4849) | 194 | 60.60 |
| | M40 (RM4850 - RM10959) | 106 | 33.00 |
| | T20 (RM10961 and above) | 20 | 6.40 |
| **Current area residence** | Town | 202 | 63.10 |
| | Sub urban | 77 | 24.10 |
| | Rural area | 41 | 12.20 |

## Reliability Assessment

The reliability of the measurement items for all the variables are as indicated in Table 3, the measurement was assessed by an internal consistency check. The Cronbach Alpha from the test shows figures between 0.619 – 0.887, this suggested that the instrument was stable and consistent.

**Table 3:**
Reliability test of the acceptance and challenges towards online learning

| | No of items | Cronbach's Alpha |
|---|---|---|
| Acceptance | | |
| **Acceptance towards online learning** | 8 items | 0.619 |
| Challenges | | |
| **Social issues** | 3 items | 0.696 |
| **Lecturer capability** | 4 items | 0.846 |
| **Accessibility** | 3 items | 0.835 |
| **Challenges (total)** | 10 items | 0.887 |

The descriptive analyses on the constructs of the study namely acceptance and challenges. Generally, the results indicated that majority of the respondents in this study rated most items in the scale at "disagree". The results in Table 4 showed that the highest mean value for this construct is the

item which denoted the respondents' concern on understanding the subject via face to face learning (It is much easier to understand the subject via face-to-face learning with lecturer with mean = 4.06) and the percentage of agreement of 72%, and followed by "I have lacked personal motivation for online learning" (mean = 3.53) and 82.2% of agreement.

The item that exhibited the lowest mean value is "I do not prefer classroom discussion (face to face discussion)" (mean = 2.12 and 9.1%) and followed by "I can understand written instruction online without any help from the lecturer" (mean = 2.27) with the percentage of agreement of 8.8%. Table 4 revealed the result of descriptive statistics of acceptance.

**Table 4:**
Result of Descriptive Statistics – Acceptance

N=320

| Items | Percentage of Agreement (%) | Mean |
|---|---|---|
| Online learning is easy to use everywhere | 39 | 3.22 |
| Online learning is an enjoyable method of teaching delivery | 29.4 | 2.99 |
| It is much easier to understand the subject via face to face learning with lecturer | 72 | 4.06 |
| I do not prefer face to face teaching | 14.7 | 2.31 |
| I do not prefer group study after class | 16 | 2.49 |
| I can understand written instruction online without any help from the lecturer | 8.8 | 2.27 |
| I do not prefer classroom discussion (face to face discussion) | 9.1 | 2.12 |
| I have lacked personal motivation for online learning | 82.2 | 3.53 |

Table 5 highlighted that the students' perception on the challenges towards online learning. Based on the results, the main challenge faced by the respondents is on the social issues (Mean, 3.60) followed by accessibility (Mean, 3.58) and lecturer's capability (Mean, 3.38). The total mean score explained that all challenges received moderate level of acceptance. However, descriptive analysis by items showed that respondents agreed on *lack of communication among students during online learning (66.9%)* and *cost of internet data is too high* (58.4%) as the important challenges faced by them. These two items scored the high level of acceptance, mean score 3.92 and 3.68 respectively. This indicated that the students faced most on both challenges during online learning in covid-19 pandemics era. Meanwhile, *lecturers are not well trained to teach online* recorded as the least challenging for the students. The result indicated that less than half of the respondents (33.8%) agreed on that statement.

**Table 5:**
Result of Descriptive Statistics – Challenges

| Items | Percentage of agreement (%) | Mean |
|---|---|---|
| Lack of communication among students during online learning | 66.90 | 3.92 |
| Lack of group discussion in completing online assignments | 45.00 | 3.22 |
| Online learning makes students feel isolated | 51.00 | 3.66 |
| Social issues (total mean) | | 3.60 |
| Lecturers are not well trained to teach online | 33.80 | 3.19 |
| Lack of clear learning expectations from lecturer | 52.80 | 3.60 |
| Lower quality materials of online learning | 41.90 | 3.35 |
| Lack of assistance by lecturers in lesson deliveries | 42.80 | 3.36 |
| Lecturer capability (total mean) | | 3.38 |
| Some devices are not compatible (telephone or laptop) | 49.70 | 3.46 |
| Lack of internet access | 55.90 | 3.60 |
| Cost of internet data is too high | 58.40 | 3.68 |
| Accessibility (total mean) | | 3.58 |

## Discussion and Conclusion

The general attitude of people will influence their behaviour (Ajzen, 2008). During the online learning, there are great opportunities for flexibility being offered to both the students and the lecturers. Flexibility offered in terms of the ways of conducting the class and flexibility to the student on their self-learning. All these flexibilities will be hindered if the students and lecturers have difficulties with the technology, human talent, and the student attitude. One of the most important components in providing quality learning in education in this country is the infrastructure and the talent capital that need to be effective and efficient.

Most students have also agreed that online learning is not enjoyable, and they prefer face-to-face learning. In addition, students do not understand written instruction online without help from the lecturers. This revealed that communication is another issue that needs to be solved. It is not surprising that most students lack personal motivation for online learning.

In general, student engagement in the era of COVID-19 pandemic is good to keep the students active and focus on their studies as the Malaysian Higher Education Ministry had announced that all teaching and learning in universities will continue online until 31 December 2020. This research concluded that there are three main challenges of online learning. First, on the social issues, challenges on communication, lack of group discussions and feeling isolated were among issues and challenges highlighted. Hence, to address these issues, lecturers need to ensure students' participations during lessons and group discussions were enforced. Second is the lecturer's capability. The length of teaching content and quantity should match with the academic readiness and the online learning behaviour of students (Bao, 2020). Moreover, lecturers must provide students with proper and timely feedback, and this includes email or WhatsApp guidance after class and online videos. The final challenge is the challenges on accessibility issues of online learning. It is important to make proper plans to address possible problems such as internet data and the compatibility of devices. Therefore, challenges and issues highlighted need to be solved and addressed accordingly.

As a conclusion, it is likely that the findings of this study could help higher education institutions particularly in Malaysia to improve the quality of online learning and it is hoped to encourage further research in the area of acceptance and challenges of online learning. Moreover, it is interesting if future studies examine the students' satisfaction or the effectiveness of online learning for the pre and post

COVID-19 pandemic. Moreover, a study on the impact of online learning to be the catalyst towards creating a new and more effective method of educating students also can be further studied.

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VSTL11

# The Study Of “Mei” (美) From the Perspective of Archaeological Evidences

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**Abstract**

The Chinese character "mei"(美) carries out the meaning of beauty in Chinese, but “mei” in Chinese oracle bone inscriptions (甲骨文) and Chinese bronze inscriptions (金文) do not reflect the meaning of beauty as it basically related to the names of places and the names of people only. The East Han dynasty, Shuowen Jiezi (《说文解字》) had denoted the meaning of “mei” as sweetness (甘), but there are still lots of arguments concerning the meaning of this Chinese character “mei” until now. Besides, the creation of the Chinese character “mei” (美) is a topic that has been explored by many researchers and scholars which resulted in various interpretation of the character by them. The archaeological evidences were presented as focuses of discussion. It is hoped that the discussion of this paper is able to contribute to the teaching and learning of pure Chinese linguistics courses such as semantics, ancient Chinese studies and related courses.

Keywords："mei"(美), oracle bone inscriptions, bronze inscriptions, creation of Chinese character

## Introduction

The Chinese character "mei"(美) is popularly carried the meaning of beauty in Chinese. Whilst the ancient dictionary during the East Han dynasty, Shuowen Jiezi (《说文解字》), which gave explanation of Chinese characters, has denoted the meaning of mei as sweetness (甘) (Xu, 1977, pp.78a). However, there are lots of arguments concerning the meaning of this Chinese character “mei”. In this article, the morphology as well as the semantics of “mei” will be discussed in the light of ancient Chinese characters study, etymology and other related aspects with the prime focus of providing ample archaeological evidences.

### MORPHOLOGY AND SEMANTICS OF “MEI” BASED ON THE ASPECT OF ETYMOLOGY

According to Rong (1985, pp.24), the study of etymology of Chinese characters could trace back to the study of the Chinese oracle bone inscriptions (甲骨文) and Chinese bronze inscriptions (金文). According to Shang (2000, pp.123), on the Yinxu, ruins of the Yinshang, “mei” appeared as the horns of goats (shown in Table 1, no. 3) and in the shape of pincers (shown in Table 1, no. 4). There were even more forms of “mei” in these Chinese bronze inscriptions (金文) as shown in Table 1 (Rong, 1985, pp.262). The shapes of the horns of goats were very obvious in these forms of “mei” (Yu, 1963, pp.49).

While for the shapes of “mei” in the inscription of ancient pottery (陶文) (refer to table 1), the fethered embroidery in oracle bone inscriptions (甲骨文) has started to disappear (Gao & Ge, 1991, pp.191). The upper part of “mei” (美) is very similar to the upper of goat “yang” (羊).For the inscriptions on the royal or official seal (玺文), it was found that the forms of “mei” did not transform to the shape of goat “yang” (羊) as appeared in the inscription of ancient pottery (陶文) (refer to table 1) as reported by Luo (1981, pp.87).

In the inscriptions of “mei” in State of Chu (circa 1030–223 BC) (楚系文字) would not be discussed in detail because they were the different writing forms of “mei”. While the inscriptions of “mei” on the

bamboo slips which were joined together to form the whole scrolls (竹简), such as and, were very similar to the writing of “mei” (美) in the lesser seal character (小篆) as compared to the inscriptions on the ancient pottery (陶文). Today, the meaning of “mei” has started to relay on the meanings of “wonderful” (美好, meihao), “beautiful” (美丽, meili) and “delicious” (美味, meiwei).

**Table 1: The morphology of “mei” (美) in the various inscriptions**

| No | Forms of morphology | Code | No | Forms of morphology | Code |
|---|---|---|---|---|---|
| **Morphology of “mei” on Chinese oracle bone inscriptions (甲骨文)** | | | | | |
| 1 |  | A686 | 2 |  | A1269 |
| **Morphology of “mei” on Chinese bronze inscriptions (金文)** | | | | | |
| 3 |  | Yinxu Wenzi Leibian (殷虚文字类编) | 4 |  | Yinxu Wenzi Leibian (殷虚文字类编) |
| **Inscriptions on the ancient pottery (陶文)** | | | | | |
| 5 |  | 5.184 | 6 |  | 5.310 |
| **Inscriptions on the royal or official seal (玺文)** | | | | | |
| 7 |  | 5320 | 8 |  | 5319 |

As discussed by Xu (1998, pp.71a), “mei” is an associative compound, which is formed by combining two or more elements. It was formed by the elements of goat (羊, yang) which is deemed to be big (大, da), as thus considered beautiful “mei” (美). Wang (1970), further stressed that by looking at the writing of  in the lesser seal character (小篆), “mei” (美) was only formed by the elements of goat and big (大, da). Duan & Xu (2007, pp.261a) and Zhu (1974, pp.620b) also agreed with this view by adding that goat that is big was supposed to be sweet and refreshing or luscious (甘美, ganmei). While Gui (1987, pp.302b), further elaborated the meaning of “mei” (美) as related to the meaning of “shan” (善, good, kind and virtuous). All these views were in parallel to the explanation of “mei” in *Shuowen Jiezi* (《说文解字》).

## THE INTERPRETATIONS OF THE CHINESE CHARACTER “MEI” (美)’S CREACTION

The creation of the Chinese character “mei” (美) is a topic that has been explored by many researchers and scholars. After summarizing and categorizing the statements and opinions of the researchers,this article will briefly summarize and analyze them, and try to make relevant arguments or refutations.

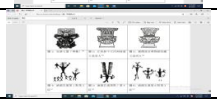
According to Kong (1965, pp.66-67) the creation of “mei” (美) is an ideogram plus phonetic character, written as “媄” or “嫩”. Chen (2002, pp.63-64) clarified the upper part of “mei” as a goat (羊, yang) that represented a female (女, nü) and the bottom part of of “mei” was a human being (人, ren) that represented a male (男, nan). Liu and Zhang (2010, pp.149) considered that character “mei” is the combination of “goat” (羊, yang) and “fire” (火, huo) .

According to Xu (1995, pp.110-112), “mei” is a combined ideogram character that combined "goat" (羊, yang) and big (大, da). On the other hand, a Japanese scholar Tadachika Takada (1982, pp.2078) believed that “mei” carried out the meaning of sweetness (甘, gan). Another Japanese scholar Kasahara Nakaji (1988, pp.2-6) explained “mei” as a delicious fat goat according *Shuowen Jiezi* (《说文解字》).

According to Kang (1986, pp.131), “mei” (美) was a dancer with feathered embroidery. Yao (1996. Pp.224) suggested the upper part of of “mei” was a headwear and the bottom part was human being (人, ren). Furthermore, Yu (1963, pp.47-50) considered the upper part of “mei” appeared as the horns of goat or "goat" (羊, yang), and the bottom part was human being (人, ren). According to Wang, the upper part of “mei” was the feathered embroidery while the bottom part was the form of human being.

Xu (1993, pp.416) believed that upper part of “mei” was feathers of bird or goat’s horns, the bottom part was human being (人, ren).

**Table 2: The mural and bronze related with “mei” (美) was the feathered embroidery in upper part**

| No | Mural or bronze | Describtion or location |
|---|---|---|
| 1 |  | Liangzhu Jade "Divine Emblem" (良渚玉器“神徽”) |
| 2 |  | Cangyuan mural point 1<br>Area 2 (沧源岩画第 1 点第 2区) |

## TEACHING PRACTICE OF CHINESE CHARACTER “MEI” (美)

First of all, the instructor needs to explain the various inscriptions and meaning of "mei" (美) from Chinese oracle bone inscriptions (甲骨文) to the present character of "mei" (美). Nowadays, the instructor can invite students to try to write "mei" (美) with different inscriptions. Besides, the instructor can ask students about their views on "mei" (美) and different writing forms and meanings of "mei" (美). Students can express their views and opinions on "mei" (美) after the discussion. The instructor can ask the students to use the horns or feathers as the headwear, and let other students comment on whether the meaning of the Chinese character "mei" (美) comes from the feather embroidery on the body of the human or goat’s horns on the head of human being. The instructor should use the theory of Six Methods of forming Chinese characters (六书) effectively to stimulate students' interest in learning Chinese characters and make every effort to improve teaching efficiency (Xu, 2020, pp.37). Finally, the instructor can summarize and conclude the students' views about character "mei" (美).

**Table 3: The meaning of “mei” (美) in the various inscriptions**

| No | Types of inscriptions | Meaning of “mei” (美) |
|---|---|---|
| 1 | Chinese oracle bone inscriptions (甲骨文) | name of people<br>captives or slaves<br>names of places |
| 2 | Chinese bronze inscriptions (金文) | shapes of the horns of goats<br>feather embroidery on the human |
| 3 | Inscriptions on the ancient pottery (陶文) | shapes of the horns of goats |
| 4 | Inscriptions on the royal or official seal (玺文) | feather embroidery on the human |
| 5 | Inscriptions of the bamboo slips （楚简文字） | relate to the meanings of wonderful, beautiful and delicious as today |
| 6 | Lesser seal character (小篆) | sweetness |

## Conclusion

Based on researchers, there are several different meanings of “Mei” and Ruan (1964) considered it as an abstract concept. The discussions on the various inscriptions found that the meaning of “mei” in the inscriptions of oracle bone (甲骨文) had particularly referring to the names of people and places. When came to the inscriptions of bronze (金文), “mei” has started to carry the meaning of “wonderful” (美好, meihao). Then in the inscriptions of the bamboos (竹简), “mei” has further been elaborated not just as “wonderful” (美好, meihao), but also related to “beautiful” (美丽, meili) and “delicious” (美味, meiwei). This is also in paralled to *Shuowen Jiezi* (《说文解字》) which indicated “mei” (美) as “gan” (甘, sweetness). The evolution of the semantics of Chinese characters hence reflected not just pragmatically but also manifested in the process of transcriptions. The study of the Chinese character

in the light of the morphology will certainly open up more meanings of the characters in the history of their transcriptions. Thus, the efforts in deepening the knowledge on this area is worth putting in.

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VSTL12

# The Study of The Chinese Character "Mei" (美) From the Perspectives of Chinese Character Creation

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**Abstract**

The Chinese character "mei"(美) carries out the meaning of beauty in Chinese. However, *Shuowen Jiezi* (《说文解字》) had denoted the meaning of "mei" as sweetness (甘) during the East Han dynasty, but there are still lots of arguments concerning the meaning of this Chinese character "mei" until now. Eventhough, the creation method of the Chinese character "mei" is a topic that had been explored by many researchers and scholars, they still fail to agree on one particular idea only for this character. Majority scholars divided character "mei" into upper and lower parts in their explanation or findings. The lower part of "mei" was recognized by majority scholars as "大" (da, big) or "人" (ren, human being). Yet, the controversial part was the upper part as there were various interpretations made by scholars on it namely goat, horns of goat, feather wearing, head ornaments, panache and etc. The unearthed artifacts and archaeological finds were presented as focuses of discussion. In giving contributions to the teaching and learning of Chinese linguistics courses such as etymology, ancient Chinese philology as well as related courses, the discussions in this paper is able to shed some lights.

Keywords: "mei"(美), oracle bone inscriptions, bronze inscriptions, creation of Chinese character

## Introduction

In Chinese, the word for beauty or beautiful is transcribed as měi, and the word měi (美) is composed of two images, one for large (大) and one for ram (羊) (Crockett, C. 2018, pp.66). While in the ancient dictionary during the East Han dynasty (202 BC–9 AD), *Shuowen Jiezi* (《说文解字》), which gave explanation of Chinese characters, has denoted the meaning of "mei" as sweetness (甘) (xu, 1977, pp.78). However, there are lots of arguments concerning the meaning of this Chinese character "mei". In this article, the semantics of "mei" will be discussed in the light of Chinese character creation. Transdisciplinary research is essential in providing good understanding of the intended Chinese characters such as "mei" and it is also essential for semantics analysis purpose.

## THE CREATION METHODS OF CHINESE CHARACTER "MEI" (美)

There were at least 11 methods concerning the creation or forming of this Chinese character "mei". The focus of this article is on the argument and discussions on the creation or forming methods. After analyzing the creation or forming methods, this article will explain the reasons for supporting views and disagreed opinions.

### *A. Ideogram plus phonetic (形声说)*

According to Kong (1965, pp.66-67), "mei" was formed from the sounds of "yang" (羊, goat) and "da" (大, big). It was agreeable that the big goat is considered beautiful (美, mei). According to Guo (1986), the phonetic transcriptions of ancient sound of "mei" (美), "yang" (羊, goat) and the "da" (大, big) were very much different from each other. Hence, this ideogram plus phonetic method in explaining the formation of the Chinese character "mei" (美) does not make sense and is not convincible.

### *B. Copulation explanation (交合说)*

According to Chen (2002, pp.63-64), “羊” (yang, goat) symbolized female or woman. And “大” (da, big) was related to male or man. Hence, “羊” (yang, goat) and “大” (da, big) joined together and forming “mei” (美). However, this copulation explanation was lacking the support of linguistics study and archaeological provision.

### *C. Explanation based on goat (羊, yang) and fire (火, huo)*

Liu and Zhang (2010, pp.149) discussed the formation of “mei” (美) based on the ancient aesthetics on beauty. They stated that the ancient “mei” was “羙” (měi) which was formed from the words “羊” (yang, goat) and “火” (huo, fire). They further argued that the goat that was barbecued would present a very presentable taste (美味, meiwei), hence related to the concept of beauty “mei”. However, this kind of explanation is still suffered from the supports of archeological supports. Therefore, this explanation is definitely rejected.

### *D. Explanation based on goat (羊, yang) and big (大, da)*

Xu (1995, pp.110-112) has explained the original meaning of “mei” (美) that consisted of two pictographic characters, namely “羊” (yang, goat) and “大” (da, big). There weren’t any arguments concerning goat (羊, yang) in the formation of “mei”. The questionable element was on the big (大, da) element. Therefore, explanation based on big goat in forming “mei” is still not satisfying.

### *E. Explanation based on nice taste “gan” (甘)*

According to Japanese scholar Tadachika Takada (1982, pp.2078), the taste of meat is delicious. Hence it leads to the meaning of “mei” (美) which carries the meaning of delicacy. *Erya* (《尔雅》), the first extant Chinese dictionary (c. 3rd century BC), with glossaries on classical texts, has given explanation on “mei”, but did not provide any relationships between “mei” (美, beauty) and “gan” (甘, tasty or sweetness). (Hao, 1983, pp.115). Thus, this point is still open to question.

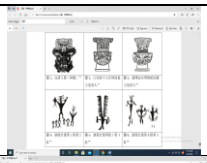
### *F. Explanation based on both fat goat and good taste*

A goat that is plump and strong as well as well-fed is generally in good taste (Kasahara Nakaji, 1988, pp.2-6). It was reflected in the classical Chinese literature, form the Chinese cultural way of thinking and mentality. However, the discussion has not taken into account the findings of “mei” on the oracle bone inscriptions (甲骨文) and bronze inscriptions (金文). This method of explanation did not cover all parts in “mei”, hence further contemplation and research need to be carried out to enhance the findings.

### *G. Explanation based on feather (yu, 羽) and man (ren, 人)*

The original meaning of “mei” (美) has been related to the acts of feathers wearing and feathers decoration among the aborigines, shamans or witches (Wang, 2015, pp.69). It was supported by the unearthed artifacts, archaeological finds that clearly demonstrated the custom of feathers decoration and feathers wearing among the ancient people (refer table 1). Nevertheless, the oracle bone inscriptions (甲骨文) have provided the proofs that “mei” was similarly associated with the element of goat (羊, yang). Therefore, the explanation based on feathers and man did not comprehensively presenting the morphology and semantics of “mei”.

**Table 1: The mural and bronze related with "mei" (美) was the feathers wearing and feathers decoration among the aborigines shamans or witches**

| No | Mural or bronze | Description or location |
|---|---|---|
| 1 |  | Feathered people with jade crown, the collection of National Palace Museum of Taiwan (台湾故宫博物馆院藏玉冠羽人) |
| 2 |  | Cangyuan mural or rock painting, point 6 Area 3 (沧源岩画第 6 点第 3区) |

### *H. Explanation based on goat (yang, 羊) and man (ren, 人)*

The ancient people started to imitate the actions of the goat in the dance. It was called hunting witchcraft or hunting sorcery (Xiao, 1980, pp.41-42). The ancient people believed that they could had a successfully hunting and get numerous preys after they imitated the goat acting. The Chinese character "mei" (美) was presenting this kind of goat acting. However, the forefathers who carried out the goat dancing were for the purpose of worship and not necessarily for beauty displaying. Henceforth the explanation based on goat and man is not really persuasive.

### *I. Explanation based on head ornaments*

The head ornaments of the primitives initially were the imitation of horns on the heads of the animals. During the ending period of the prehistoric Shang dynasty (c. 16th-11th century BC), this kind of direct imitation has reduced. Therefore, beauty was seen as the wearing of crown on the head, or hairpin for bun as head ornaments have been offered sufficient proves in this aspect (Gao, 1988, pp.42). Even with the enumeration from the unearthed artifacts and archaeological finds, there isn't a satisfactory connection based on this explanation of "mei" (美). It provides more room for study in this aspect.

### *J. Explanation of dancing man with panache*

In *The origin and development of Chinese character*, the explanation of character "mei" (美) was a dancing man with panache had been mentioned (Kang, 1986, pp.131). Panache with feathers decoration such as tails of the pheasant was considered beautiful. Since the dancing of witchcraft or sorcery was actually related to the formation of the Chinese character "舞" (wu, dance), it seemed unlikely that the ancient people of distinction would create "mei" that also in connection with witchcraft dancing.

### *K. Head ornaments of man with goat horn or wearing feathers*

The appearance of human head with feathers for decoration, with the shape that looked like goat horn, had brought up the meaning of beauty (Li, 1994, pp.1323). Some may think that wearing horns were beautiful while others may think that wearing feathers decoration were pretty. Hence, this explanation is not consistent in explaining the formation and creation of "mei" (美) that represents the meaning of beauty.

## CONTRIBUTIONS TO THE TEACHING AND LEARNING OF CHINESE LINGUISTICS COURSES

"Mei" (美) had been written in different ways in different periods, which proved that the Chinese characters are not immutable characters, they changed in different times and places. Moreover, we can

find out ancient pronunciations of “美” (měi) “羊” (yáng) and the “大” (dà). Finally, we can discover the aesthetics of ancient Chinese that considered a person who wearing feathers represented beauty.

## Conclusion

“Mei” (美) is an abstract concept in nature. From the discussions above, the eleven explanations have been examined. The strengths of the explanations have been highlighted together with the weakness of those explanations. It was obvious that none of the explanations could be comprehensive and persuasive enough. The explanation of human head with goat horn decoration or feathers wearing was the most acceptable one, while the explanation based on phonogram, phonetic compound or picto-phonetic character, copulation, as well as goat and fire were the weakest explanations among all. Each of the explanations was with the suspicious parts and acceptable parts. More grounds of argument and evidence are needed for deeper clarification. Hence, future discussions and studies are called for the betterment of understanding on the creation and formation for “mei”.

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VSTL13

# Challenges for Education in Post-COVID-19 Pandemic: A Review on Managing Retrenchment, Unemployment and Crime

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**Abstract**

Stress and violence cases are increasing during the lockdown period in many countries. The increasing reported cases of mental health must be taken as an emergency issue. The need of skillset for fast job placement to avoid crisis is getting more crucial, either for socially or economically benefits. Malaysia as the model of success story in managing COVID-19 pandemic can be utilized as the main advantage towards pursuing digital talents through the Teaching and Learning (T&L) using Information and Communication Technology (ICT). Statistical analysis, data mining and business intelligence are among the approaches that prove its importance during post-COVID-19 pandemic. It is also plausible that crime rates will possibly increase in post-COVID-19 pandemic mainly due to economic and unemployment crisis as well as the rising of mental health issues in the society.

## Introduction

Due to Covid 19 pandemic, majority of the Higher Learning Institution in Malaysia have decided to conduct teaching and learning sessions using the hybrid mode. The term hybrid in this context refers to combination of Distance Learning (ODL) and face-to-face (F2F) interaction with the learners. As an example, lectures will be conducted online while the tutorials and labs will be conducted in F2F manners while taking precautions for social distancing. Therefore, due to F2F, students are required to come back to campus after being away from the campus for almost six (6) months.

Regardless of challenges faced, the learning sessions should be continued to ensure the learners are not affected by the recent pandemic, academically. However, there are many students who were reported as not motivated to study when the changes of teaching and learning mode has to be implemented.

### Challenges for Education in post-COVID-19 Pandemic

According to the press release from the Department of Statistics Malaysia, in February 2020, the labour participation rate is 68.7% with the unemployment rate of 3.3% at that particular month. The number of labour force increased to 2.1% in February 2020 as compared to February 2019. However, it is still important for the researchers to take note that a total of 31.3% of working age population (15-64 years) were outside the labour force which consisted of students, retirees, housewives, and those who have no interest to work.

Filter by subject area, most of the publications in Scopus database linked to the keywords ‘COVID’ and ‘unemployment’ are from the area of Medicine (142 publications) followed by Social Sciences (32 publications), Psychology (30 publications), and followed by the other subject areas closely. The amount of the related documents clearly indicates that this is a serious issue that is less attended, therefore, more researches needs to be conducted in the near future to fill the body of knowledge in this area. The access types for these literatures consist of Open Access (19) and Others (3) and all of

them are dated (2020) due to COVID-19 pandemic that hit the whole world currently. The document types related to this research are shown in Figure 2 as follows;

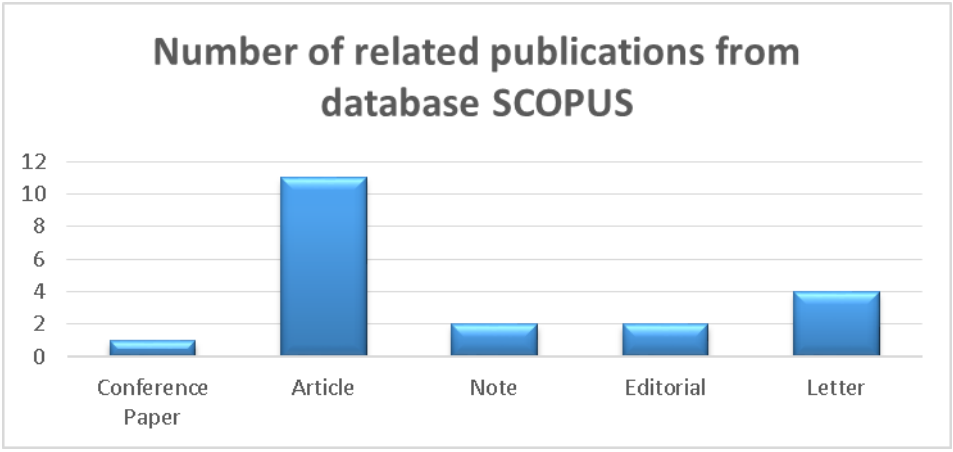


**Figure 2. The bar chart showing the comparisons of related document types**

A review from the number of related publications from database SCOPUS shows that there are lack of researches in this field. The keywords used are "COVID-19", "unemployment" and "education" only, with the aims to identify efforts taken and recorded in order to solve these issues. Since COVID-19 is the new issue starting early of the year 2020, all of these publications are from the year 2020; one (1) conference paper, eleven (11) articles, two (2) notes, two (2) editorials and four (4) letters for publications into SCOPUS database.

The purpose of this research is to explore the educational challenges anticipated during the post-COVID-19 pandemic. Since education is self-improvement certification and many professional bodies and institutions related, there are costs involved. The inability for students to pay and getting loans may force them to go to work; which is limited in post-COVID-19 pandemic. Gig economy had become one of the only choices. The dropout rates from universities begin to rise due to all of the problems related to the closing of the educational institutions (Tanveer et al., 2020). Nevertheless, the challenges for education system can be expected during post-COVID-19 pandemic since most of the students claimed that they are not comfortable with the amount of guidance that they get from online learning or virtually (Tanveer et al., 2020). Furthermore, they suggested that online learning or virtual education is not only a possible source of new revenue but also can be regarded as the systemic continuity and institutional success for every classes, in the future to familiarise the students with the tools and applications that are suitable to be used for this purpose. Strategic implementation of online courses can be done by strategic scheduling, setting up regulations and procedures according to institutions' rules and guidelines.

United Nations Educational, Scientific and Cultural Organization (UNESCO) stated that more than 100 countries executed nationwide closures which is also directly impacting over half of the world's student population (Onyema et al., 2020). According to UNESCO, the world of education before COVID-19 pandemic was already facing challenges in providing education as human essential needs and it was far more worse during the outbreak. The challenges for Education particularly High Education Institutions has to consider many issues, especially the impact of COVID-19 pandemic itself first. Onyema et al. (2020) shows from the results of their analysis that COVID-19 pandemic has affected the education system including the decreasing access to facilities, increasing of the students' debts and learning disruptions, as well as losing jobs for most of them who are undertaking part-time programme. Onyema et al. (2020) mentioned as quoted; "The outbreak of coronavirus negatively affected educational activities worldwide… it created serious disruptions in academic activities, as well as in career plans".

Closure of High Education Institutions due to COVID-19 pandemic had impacted students and lecturers especially for those with limited digital skills and resources for continuing education. The burden of the parents is increasing due to they need to struggle not only to provide at home but also to

perform on their jobs which are either working remotely from home or facing retrenchment. The graduation time of students might be extended which might shatter their academic and dreams of good jobs. Multiple problems occurred in educational sectors due to the pandemic including loss of interests among learners, besides decrease the opportunities for underprivileged learners and disadvantaged people (Onyema et al., 2020). However, their findings recognized and emphasized the needs of technology in education including the emergency times during the pandemic.

The main issue here is on the challenges for High Education in post-COVID-19 pandemic in producing the graduates that will be able to survive the new norm due to the increasing of retrenchment and unemployment. Higher Education have to train students either to become entrepreneurs or preparing for getting jobs; or else, without jobs, crime is expected to increase due to one of the worst economy crisis faced by the whole world. Retrenched parents had put burden on their children for furthering their education. According to Kwon and Adler (2014), certain types of social capital can also give rise to demotion thus inhibit career opportunities and experiences. Furthermore, they explained that "More precisely, when an individual does not possess certain types of social capital, such as positive relationships with their manager, or the ability to socialize effectively in an organizational context, it may lead to demotion." Underemployment and underpaid may also occur due to the inability of the job market to cope with the graduation of students in post-pandemic scenario. Urgent actions need to be taken where the current graduates need to be trained with the new technologies to ensure their competitiveness including IoT, Big Data and Virtual Reality are at par.

Several related researches can be summarized as shown in Table 1;

**Table 1. Related researches**

| Method | Finding | Author | Title |
|---|---|---|---|
| Quantitative Method:<br><br>Questionnaire Online Survey, through Google Forms, Social Media, and websites. | The most sensitive to the stress:<br>1) people with affective disorders,<br>2) young people (aged ≤20),<br>3) unemployed persons,<br>4) single persons,<br>5) people with no formal education,<br>6) women.<br><br>The measures' implementation should be targeted, to the identified vulnerable social groups. | Sorokin, M. Y., Kasyanov, E. D., Rukavishnikov, G. V., Makarevich, O. V., Neznanov, N. G., Lutova, N. B., & Mazo, G. E. (2020). | Structure of Anxiety Associated with COVID-19 pandemic: The online survey results |
| Quantitative Method:<br><br>Survey | To monitor young people's mental health status over the long term.<br><br>How prolonged school closures, strict social distancing<br>measures, and the pandemic itself affect the wellbeing of children and teenagers. | Lee, J. (2020). | Mental health effects of school closures during COVID-19 |
| Not available | Prioritization within mental health services with available resources may be required with increasing demands of mentally ill persons. | Kavoor, A. R. (2020). | COVID-19 in People with Mental Illness: Challenges and Vulnerabilities |
| Scenario-based public perceptions were collected via a purposive sampling survey method through a questionnaire. | Maintaining partial lockdown with business and economic activities with social distancing and public health guidelines is the best strategy to maintain. | Mashura Shammi, Md. Mostafizur Rahman, Md. Bodrud-Doza, & Abu Reza Md. Towfiqul Islam (2020). | Strategic assessment of COVID-19 pandemic in Bangladesh: comparative lockdown scenario analysis, public perception, and management for sustainability |

| | | | |
|---|---|---|---|
| Not available | Hidden inequalities and injustices is depressingly large among autistic people. 3 possibilities: (1) The experience of abuse and exclusion from appropriate care; (2) The pandemic could have a disproportionate effect on the mental health of autistic people; (3) Economic inequalities | Elizabeth Pellicano & Marc Stears (2020). | The hidden inequalities of COVID-19 |
| Exploratory Analysis; Data was collected from the top 50 countries ranked by the number of cases and factors related | COVID-19 crisis shows that we have to rethink of our community and our health system for our children and future generations or receive excessive mortality within the time of crisis and pandemic<br><br>Focus on health and prevention of diseases rather than healing care should be a central theme in the public domain.<br><br>The country's readiness and long-term investment in IPC in both high-context and low-resources should be facilitated globally] | Joost Hopman & Shaheen Mehtar (2020). | Commentary: Country level analysis of COVID-19 policies |

## Conclusion

Integrated efforts based on global and local awareness on managing retrenchment, unemployment and crime can be deemed as highly necessary. This is because, it is proven from the reviews that not only technological skills need to be improved but also mental health must be strengthened in order to cope with various issues and decisions that need to be made. Statistical analysis, data mining, creative media, and visual decision support systems (VDSS) using dashboards can be proposed as the platforms by the High Education Institutions to distribute information and awareness on the challenges for education during post-COVID-19 pandemic in order to manage the issues effectively in the future.

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VSTL14

# From Reading Difficulty to Interactive-Compensatory Reading

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**Abstract**

Students leaving secondary schools may need more time to adjust to the changing demand of reading activities. This is because, the types of reading in higher institutions require more effort and commitment from the readers. Readers often practice compensation strategies to aid understanding. This study was carried out to investigate the perception of learners towards academic writing by looking at what readers consider as reading difficulty. This study also attempted to look at readers' perception and the different types of strategies in academic reading. 106 participants were randomly chosen to respond to a 5-part questionnaire and SPSS analysis is done to record the frequency of responses and presented in the form of mean scores. Findings reveal interesting implications for the teaching and learning of academic reading as readers combine the use of compensatory approaches to aid their understanding when reading academic texts.
Keyword: Readers, Compensation, Strategies

## Introduction

Students who enter institution of higher learning may become overwhelmed by the academic reading. They may take some time to get used to depend on reading in order to get information for their day-to-day academic activities in the institution. According to Abdullah and Mahfoodh (2016), readers face difficulties when they 'graduate' from reading for pleasure to academic reading in institutions of higher learning. According to Saengpakdeejit & Intaraprasert (2014), the difficulty that academic readers face may include difficulty with the language, structure and the content of the text. As such, academic reading courses in institutions of higher learning focus on the teaching of reading strategies so learners are taught to strategize their reading to get the most of the text. However, Aykal & Boyaci-Altina (2019) felt that some strategies taught in reading may not carefully address the background knowledge of the learners as even the cultural backgrounds of the learners are needed to better enhance their understanding of the text.

This study is done to investigate the perception of learners towards academic reading specifically on how learners perceive reading difficulties and how do they apply compensatory technique during their academic reading session. This study examined the following questions (1) In what ways do learners find reading difficult? and (2) How do learners use compensatory skills in their academic reading?

## Literature Review

Reading in the Second Language

Abdullah & Mahfoodh (2016) reported that second language learners may bring in their background, cultural issues into their reading text. Most of the time, their background information is useful for them, but some information may sometimes impede comprehension when their schemata did not support the information in the text. Instead of using their schemata to help in understanding the reading text, the limited knowledge may in turn hinder their understanding.

The study by Tommaso (2015) reported that second language learners are able to interact with the text actively through paraphrasing, summarizing and relating materials to personal experience. They use previous knowledge of concepts and experiences to make sense of the content of what they are reading. Their vast experience may provide scaffolding towards the understanding of new information. In addition to that second language learners are capable of making use of their learnt knowledge into their future learning.

Reading Skills and levels of Comprehension

Learners are said to use different levels of reading skills (figure 1) in the process of understanding the comprehension text. According to Basaraba et al (2013), the three-level model of reading comprehension assists teachers in the classroom. Figure 1 shows the three levels of reading comprehension among learners. Literal comprehension involves the learners to identify specific events from the text. Next, inferential comprehension requires the reader to infer implicit meaning from the text. Finally, evaluative comprehension demands that the reader evaluate situations and make judgements.

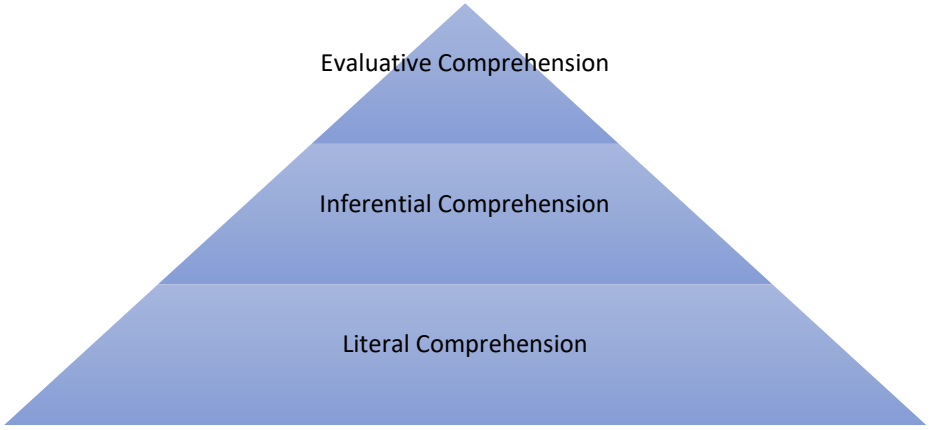


Figure 1-Three Levels of Comprehension

## Methodology

This quantitative study is done to investigate what readers perceive as reading difficulty. 106 respondents were randomly chosen to participate in the study with questionnaire as the instrument used in this study. A reliability test showed that the instrument showed a Cronbach alpha of 0.833, thus revealing its reliability (table 1). Data is analyzed using SPSS version 26 and is presented in based on the frequency using mean scores.

**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .833 | 33 |

Table 1- Reliability Statistics of Instrument

## Findings

Reading Difficulty

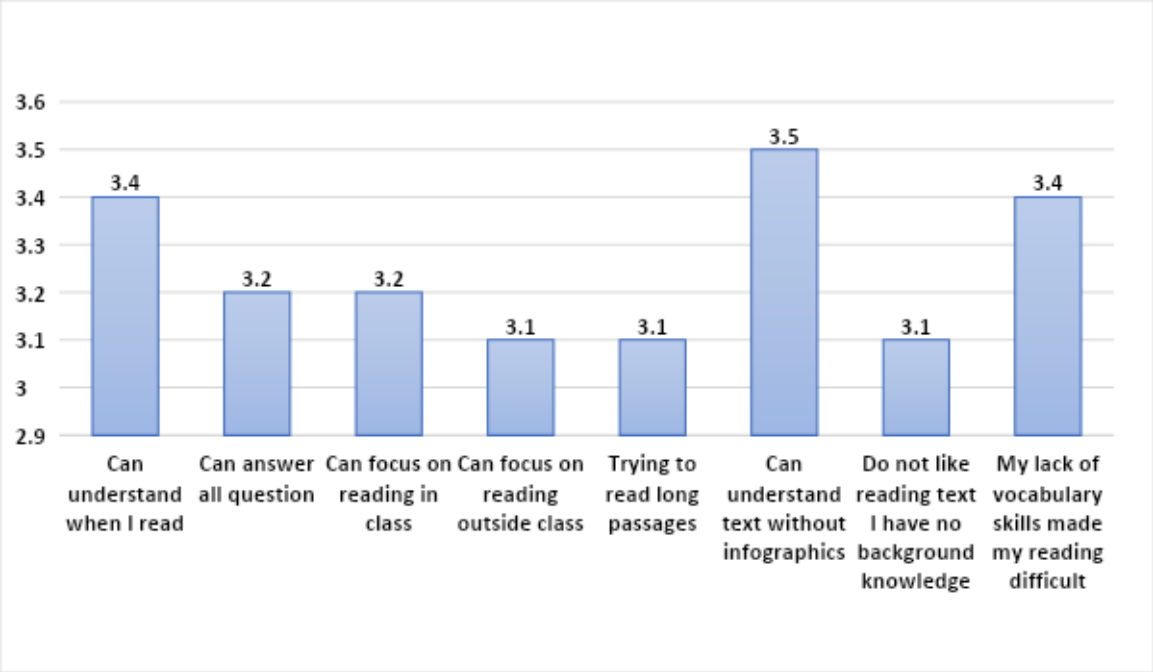


Figure 2- Mean Score for Reading Difficulty

Figure 2 shows the mean score for reading difficulty. Readers found it difficult if academic reading is to be done outside of the class setting (3.1) and if the text is considered long (3.1). Reading text which are alien to their schemata or background knowledge is also perceived as troublesome for the readers (3.1).

Compensatory Skills

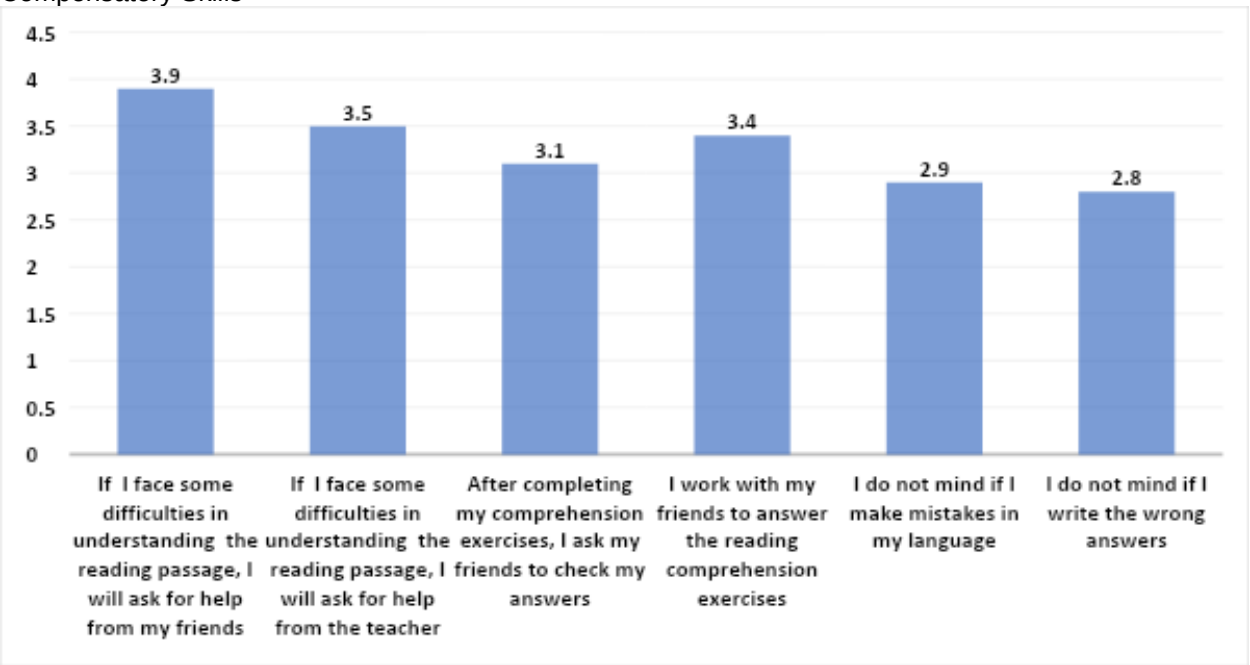


Figure 3-Mean for compensatory skills.

Figure 3 presents the mean score for readers' use of compensatory skills. When readers face difficulty during the reading process, they compensate their inadequacy by getting help. They usually

ask help from friends (3.9), or from the teacher (3.5). They also sometimes choose to work with their friends (3.4).

## Conclusion

The findings in this current study revealed how readers combine the use of compensatory approaches to aid their understanding when reading academic texts**.** Readers found it difficult if the text is considered long. Reading text which are alien to their schemata or background knowledge is also perceived as troublesome for the readers. This is also agreed by Abdullah and Mahfoodh (2016) who also reported that reading difficulties may stem not only from learners' language ability, but also their lack of content knowledge.

According to Ngabut (2015), teachers teaching academic reading should adopt the concept of behaviorism in the teaching. It is believable that extra effort to choose the correct stimulus (reading passages) can aid the teachers in getting the best response (from learners). Readers should also be taught to predict their expectations of the text before and as they read. Therefore, it is recommended for future researchers to focus on the behavior of readers in the thinking -reading process to get maximum benefit from reading.

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VSTL15

# Measuring Cognitive Level Using Interactive Map Among Secondary Students: A Quasi-Experimental Approach

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**Abstract**

Spatial thinking is essential because it encourages the human mind to visualize and stimulate cognitive thinking, thus improving higher thinking order (HOTS). Unfortunately, it was found that the geography syllabus taught in secondary school is lacking this vital element. Hence, this study aims to assess the student cognitive level using an interactive map among secondary students in Geography subject. This study was underpinned by the Social Cognitive Theory (SCT). The cognitive level was measured using Bloom Taxonomy cognitive domain from low to high order thinking skills, namely knowledge, comprehension, application and analysis. Data were collected using a one-group pretest-posttest quasi-experimental design. The interactive map has been used as an intervention for the study. Pre-test and post-test questions were distributed before and after the intervention. 31 students of Sekolah Menengah Kebangsaan Arau participated in this study. Data were analysed using a paired t-test analysis. The result reveals the significant difference between cognitive domains among students. The interactive map increases their knowledge and analysis ability among students. This study contributes to the empirical evidence to the literature of SCT in the context of spatial thinking studies among secondary students in selected geography topics.

Keywords: Spatial thinking, Bloom taxonomy, secondary students, geography, quasi-experimental

## Introduction

*Spatial Thinking*

Spatial thinking is an approach in assessing the cognitive level, and it has been focused by several studies (Ghaffari, Jo & Currit, 2018; Utami & Zain, 2018; Verma and Estaville, 2018; Wise, 2018) due to the current advance geospatial technologies. Bednarz and Lee (2011) suggested that several elements need to be considered in developing the spatial thinking such as direction and position information, map layers and patterns, spatial relationship, three-dimensional (3D) visualization and map production. All these elements are integrated in geography study through maps, graphs, images, diagrams, models, and visualizations (Bednarz & Bednarz, 2008).

*Geography and Spatial Thinking*

Geography is a study of a physical characteristic of the earth, human activity, population distribution, resource, political and economic activities (Webster, 2015). Geography and spatial thinking are interrelated to make sure students understand the spatial patterns and processes in teaching and learning (Bednarz & Bednarz, 2008). In recent years, Geographical Information System (GIS) platforms are used to enhance the students' spatial thinking in both formal and informal education as well as incorporating the geospatial thinking into teacher preparation programs (Chun, 2010; Lateh & Muniandy, 2011; Lee &Bednarz, 2009; Mayalagu, Jaafar & Choy, 2018; Mustapa, Mokhtar, Wahab,

Shahidan and Arof, 2014; Webster, 2015). It is also able to increase exciting learning in the curriculum using the valuable GIS tool (Webster, 2015). Therefore, higher-order thinking skills (HOTS) as stated in bloom's taxonomy in different levels of human cognition such as synthesise, examine, interpret and assess knowledge should be evaluated to test the enhancement of skills through geospatial technologies. It is essential for geographers when dealing with a complex issue and critical analysis (Rankin, 2016).

*Cognitive Level Assessment through Spatial Thinking Skill*

Although it is vital to improve the spatial thinking skill by evaluating the HOTS, unfortunately, to assess the spatial thinking skill in different aspects such as spatial perception, orientation, visualization, and mental rotation, it is not easy (Charcharos, Tomai & Kokla, 2015). Charcharos, Tomai and Kokla (2015) declared that spatial thinking among young people had been neglected and various tests have been applied to evaluate the spatial thinking, and unfortunately, it is unsuccessful. Furthermore, most of the students in secondary level only study on map production and lack of skill in determination of location around the worlds (Kaya, 2018; Mustapa et al., 2014). Then, Collins (2018) suggested that geospatial technologies and traditional maps should be implemented together to develop spatial thinking skills. The question asked in this research is what types of element should be added in conventional maps to make it is more attractive and improving spatial thinking among students.

Therefore, this study focused on lower secondary students on the current geography learning assessment using an interactive map. The interactive map was made using GIS technique that includes the spatial thinking elements. Furthermore, the cognitive level of the students was determined through the use of the interactive map, namely cognitive, comprehension, application and analysis. HOTS was known to be achieved if students can acquire the analysis level in the level of the cognitive. This study is essential to develop higher-order thinking students based on their human cognitive levels. Also, this approach can help the students to solve a problem or give spatial reasoning.

## Methodology

*Underpinning Theory*

This study is underpinned by Social Cognitive Theory (SCT) by Albert Bandura (Bandura, 2001). SCT explains the interactions of human factors based on personal factors, environment and continuous behaviour in a learning setting. In other words, SCT claims that people learn based on their experiences, the observation of others, as well as the results of those actions. For this study, SCT explains students used their own experience to use the traditional map and interaction maps in their learning. The interactive maps offer a different view of presenting the content, hence giving a new experience to them.

*Context of the Study*

The objective of this is to access whether the use of the interactive map increases the cognitive level among geography students. The cognitive level was tested using test scores based on pre-test and post-test questions. The levels of the cognitive level are classified as knowledge, comprehension, application and analysis developed based on the standard school level cognitive levels as approved by the geography teacher in the respected school. The tests scores were compared at the end of the sessions.

*Participants of this study*

The selection of study area is Sekolah Menengah Kebangsaan Arau, placed at Jalan Besar Arau, Perlis. The area was chosen due to the easy access that closes to the Universiti Teknologi MARA, Perlis branch. Furthermore, the geography teacher of SMK Arau was able to give full commitment to assist the tests among the students.

*Development of Interactive Map*

An interactive map was enhanced from the existing geography textbook and was developed using the Geographical Information System (GIS) technique. The GIS platform is used to integrate all spatial layers such as rainfall, country boundary, temperature and climate, and finally, the map was generated

as output in WGS84. All the spatial elements, such as symbol, colour, density, and pattern, were adopted in the proposed interactive map.

*Design and Validity*

This study employed a quasi-experimental, non-randomized, two groups with pre-test and post-test design. Firstly, students attended geography learning using traditional maps. The cognitive levels were controlled using the test specification table. The validity issues have been carefully observed and employed based on a suggestion made by Creswell and Guetterman (2019) on participation, procedure and treatment.

*Methods of data analysis*

Data were analysed using Statistical Package for the Social Sciences (SPSS) using a paired t-test.

**Results**

To test the hypotheses of this study, we analysed the data using a paired t-test. The result indicates that there is a significant difference between pre-test and post-test for assessment ($t = 2.879$, $p < 0.05$) where the mean value for post-test results is higher than the mean value for pre-test results. The result also shows a significant difference for knowledge ($t = 7.448$, $p < 0.001$) and analysis ($t = 3.950$, $p < 0.001$) cognitive level among students where the mean value for post-test are higher as compared to the mean value for the pre-test. However, this study does not provide enough evidence to support the significant difference between pre-test and post-test for comprehension and application level.

**Discussion, conclusion, and recommendations**

This study explains the theory of SCT in by using spatial thinking through the interactive map in the geography subject among lower secondary students. Students learned through their own experience with the interactive map. From there, students interacted with the instructors who facilitated them to use the map. At the same time, students discussed among their friends in class to improve their understanding. The learning experience with the interactive map triggered the interactions with students as the individuals, the different learning environment and the learning continues with the discussion with their peers.

The results of this study suggested that the interaction map able to help to promote their cognitive levels. The significant difference in overall results and the cognitive knowledge level show that this map improves the learning ability among students. Moreover, a significant difference reported for the analysis level, indicating that students achieve the HOTS through the map. The insignificant results for comprehension and application suggested the improvement need to be made when designing the assessments. For future studies, we recommend that the questions used a test specifications table to control the development of the assessments, but the similarity of the questions needs to be reviewed. Overall, we can conclude that spatial thinking can improve the cognitive level among students in the context of learning geography in secondary schools. More studies need to be conducted to explore how this interactive map is better used to support the relevant topics in the subject.

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VSTL16

# Remote Learning in the Time of Covid-19: An Interactive Learning Calculus II for Engineers (Mat235) By Using Microsoft Teams Digital Platform

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**Abstract**

While schools and many higher education institutions have been forced to shut down around the globe due to pandemic Covid-19, the demand for digital transformation in education has reached new heights. Many educators are struggling to move classes online as quickly and painlessly as possible. Universiti Teknologi MARA (UiTM) is also no exception and had to transform their learning and teaching process from face-to-face courses to Open and Distance Learning (ODL) mode. To overcome the potential effects of the pandemic, UiTM has been looking for ways to provide access to education by using ODL. Open and Distance Learning (ODL) is a general term for the use of telecommunication to provide or enhance learning. Using ODL, it makes about quality e-learning and e-content more accessible to both facilitators and learners. Various online teaching platforms can be used in implementing ODL, but the lecturers need to consider the Internet speed of their students. ODL activities conducted are a blend of asynchronous (without real-time interaction) and synchronous (real-time interaction) online learning. There are various ODL platforms for teaching and learning activities such as Google Meet, Google Classroom, WebEx, and Zoom. The key idea in this paper is to use the Microsoft Teams platform in order to implement ODL in teaching Calculus II for Engineers (MAT 235). By using Microsoft Teams, the lecturers can set up a team for the class, with different lectures and class dates assigned to different channels. Each channel would have a series of tabs that would, in effect, constitute the class. There would be no textbook. Instead, real-time digital inking and problem solving with in-class chat streams and collaboration from the learning community would serve as the course material. As a result, everything in the educational experience works together, and they can make sure all the students have the best learning experience because Microsoft Teams can offer a lot of benefits for both students and lecturers.

## Introduction

While schools and many higher education institutions have been forced to shut down around the globe due to pandemic Covid-19, the demand for digital transformation in education has reached new heights. Many educators are struggling to move classes online as quickly and painlessly as possible. University Technology MARA (UiTM) is also no exception and had to transform their learning and teaching process from face-to-face courses to Open and Distance Learning (ODL) mode. To overcome the potential effects of the pandemic, UiTM has been looking for ways to provide access to education by using ODL.

The concept of open learning and distance (ODL) education system is a general term for the use of telecommunication to provide or enhance learning. It focuses on open access to education and training to make the learners free from the constraints of time and place and offers flexible learning opportunities to individuals and groups of learners (Saima Ghosh, Joyshree Nath, Shalabh Agarwal, 2012; Fodzar 2015). ODL has the potential to produce a new design of teaching and learning. At the same time, studies about various issues in ODL and how it can improve the traditional education system have been

done. (Dock & Helwig,2001;1999). ODL system has the role within the field of technical and vocational education to respond viably to the developing requests of working adults or any others who have challenges in getting training in conventional instruction since lack of flexibility within the timing and area of courses. The other research shows that ODL is the solution for overcoming the hole between those who had access to science education and those who did not because now ODL has been utilized at all levels of education (Bharat, 2015).

Using ODL, it makes quality e-learning and e-content more accessible to both students and lecturers. ODL activities conducted are a blend of asynchronous (without real-time interaction) and synchronous (real-time interaction) online learning.

There are various ODL platforms for teaching and learning activities such as Google Meet, Google Classroom, WebEx, and Zoom. Zoom and Google Meet apps allow both hosts and participants to record the sessions if they wish. Zoom can only last 40 minutes per session for the basic features, and the users need to pay to have an unlimited session. UiTM also has an online platform, which is i-Learn, and now rebranded as UFuture. This platform provides free access for lecturers and students for their teaching and learning process.

By using these delivery platforms, lecturers need to consider the Internet speed of their students. Communication through live recordings are used to get authentic students' interaction, and this can be an unavoidable portion of separate educations courses (Smyth, 2011).

Other than the ODL term, another term that is used universally and rapidly during the Covid-19 outbreak is remote learning. Remote learning refers to educational activities with various formats and methods, most of which take place online. Remote learning provides an opportunity for students and lecturers to remain connected and engaged with the content while working from their homes, opportunities for remote learning naturally connected to emergencies that pose a threat to students' safety.

As some universities look to continue learning remotely for the safety of their students and faculty, Microsoft Teams for Education provides an online classroom so students and lecturers can find new ways to continue to focus on learning. Free for schools and universities, Teams provides an online classroom that brings together virtual face-to-face connections, assignments, files and conversations into a single place accessible on either mobile, tablet, PC or browser. Microsoft Teams is an excellent platform since it works with the features as follows:

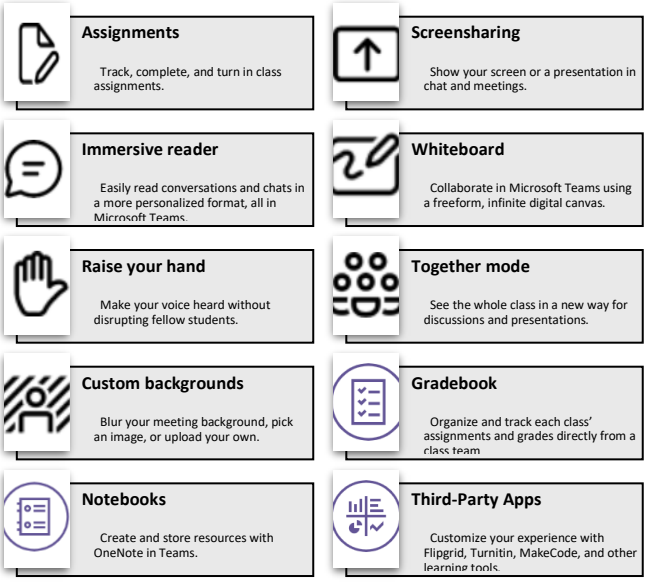


**Fig. 1** Microsoft Teams remote learning features

The key idea of this paper is to describe an innovative method on the implementation of the Microsoft Teams platform to implement remote learning in teaching Calculus II for Engineers (MAT 235) in UiTM. This course is taken by diploma engineering students. The pre-requisite courses for this course is Calculus I. This course consists of four chapters: methods of integration, indeterminate form and improper integral, functions of two and three variables, and differential equations. Applications in engineering and sciences will be covered in this course.

## Implementation of MAT235 Remote Learning in Microsoft Teams

The paper now turns to the steps in the implementation of the MAT235 remote learning using Microsoft Teams. The steps of the innovative method outlined, as shown in Fig. 2.

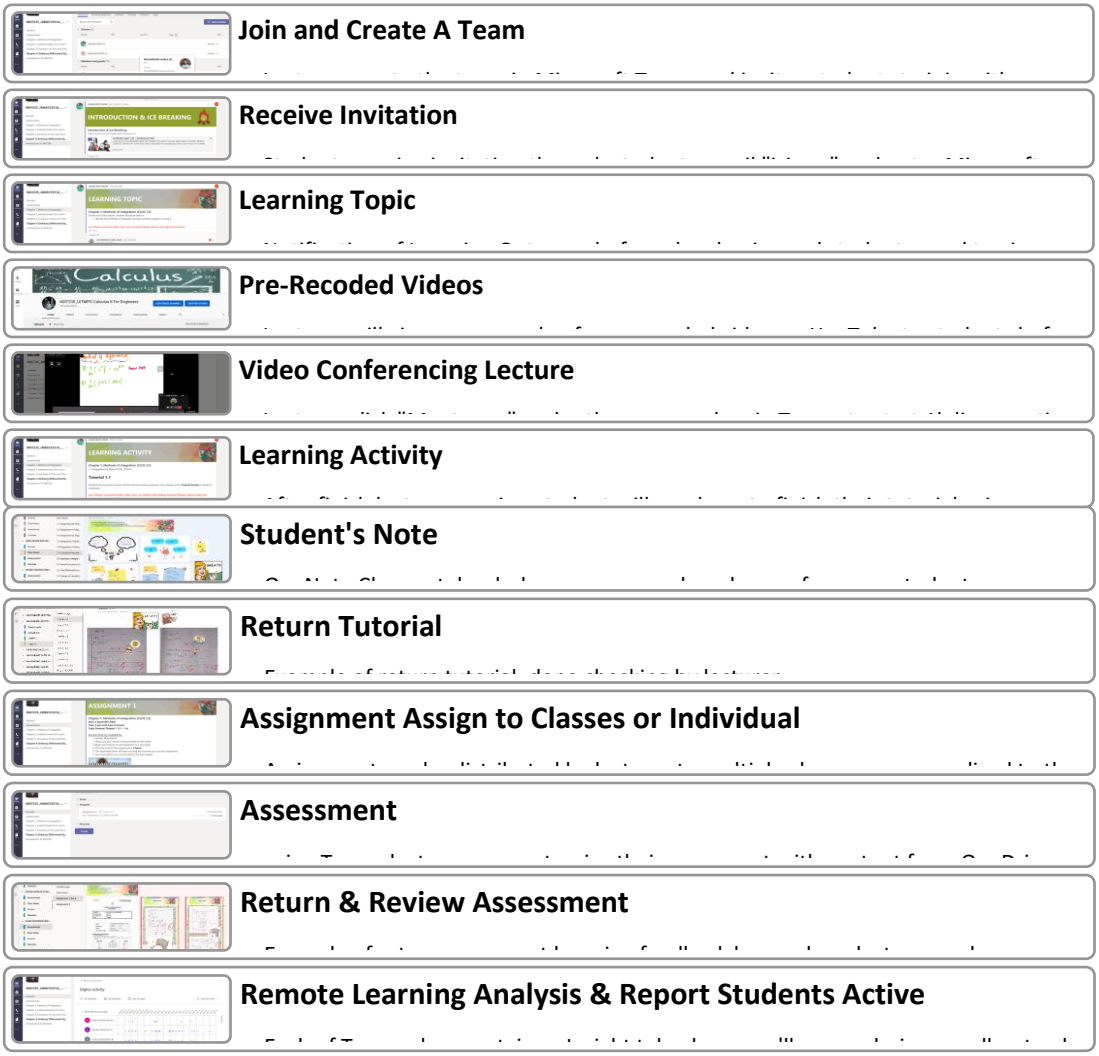


**Fig. 2** The steps in the implementation of the MAT235 remote learning using Microsoft Team

This figure provides an overview of the steps involved in the implementation of the MAT235 remote learning using Microsoft Teams. These steps begin with the lecturer creating the team in Microsoft Teams and inviting students to join with a code or make a registration for their students on their own.

Next, the students will receive an invitation through students' email "isiswa" and enter Microsoft Team. After that, the notification of Learning Outcome will be created before class begins and students need to give comments as proof of their attendance. The pre-recorded video on YouTube will be given to students before classes start. On the day of the lecture, the lecturer will click "Meet now" under the message box in Teams to start 1hour live meeting session lecture with students. After finishing the lecture session, students will have one hour to finish their tutorial using OneNote in Teams. The students will have a personal workspace in OneNote Class notebooks. For assessment purposes, using Teams, lecturers can customise their assessment with content from OneDrive, own device, link, and others. Teams also has remote learning analysis and report of students' active participation for documentation purposes.

## Conclusion

Covid-19 has impacted the lives of people worldwide, including lecturers and students, who have most been impacted. Consequently, all schools and universities struggle to move classes online as quickly and painlessly as possible. Thanks to the Microsoft Education team since they are committed to helping lecturers and students to stay connected and engaged by introducing the Microsoft Teams. By using Microsoft Teams, the lecturers can set up a team for the class, with different lectures and class dates assigned to different channels. Each channel would have a series of tabs that would, in effect, constitute the class. There would be no textbook. Instead, real-time digital inking and problem solving with in-class chat streams and collaboration from the learning community would serve as the course materials. As a result, everything in the educational experience works together, and they can make sure all the students have the best learning experience because Microsoft Teams can offer a lot of incentives for both students and lecturers.

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VSTL17

# It Is Not About the Treasure, It Is About the Hunt – Engaging Students Through Gamification

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**Abstract**

Implementation of the engineering programme has been primarily based on traditional approach to teaching and learning for decades. Nonetheless, immersive classroom learning that actively and cooperatively includes students' participation has been reported to enable them to improve their creativity, problem solving and critical thinking skills, which are required in the top ten skills today. The introduction of gamification of learning is an innovative approach in improving students' opportunities to learn and develop skills through a positive, engaging learning environment. The gamification strategy further seeks to bring about changes in the involvement and success of students in the Food Preservation Technology course. Perceptions and feedback from the students were obtained through questionnaires and reflective assessment. Most students prefer classroom approach with a gamification environment. Gamification creates flexibility and makes the course more enjoyable for both students and instructors.

## Introduction

The effect of gamification on student motivation and performance is important, as there was increased interest in gamification at the college level (Hanus & Fox, 2015). Gamification refers to the use of elements of game design in a non- game setting, while game-based learning refers to the use of games for skills or knowledge acquisition. Points, leaderboards, and badges were the key elements in typical gamification of learning (Barata et al., 2013; Mekler et al., 2013). Other game elements such as avatars, three-dimensional environments, feedback, ranks, levels, competition, and time pressures (Deterding et al., 2011) should also be considered when designing gamification-integrated learning. Learning was effectively encouraged by introduction of games (Annetta et al., 2009; de Freitas, 2010; Liu et al., 2014; Papastergiou, 2009), and was proven to motivate students than non-gaming teaching methods (Barab et al., 2005; Papastergiou, 2009). Many universities and colleges have encouraged to incorporate gamification in classroom session to strategically attract tech-savvy students and increase their engagement. Apart from game-based learning, the use of gamification elements such as goals, rules, and feedback systems to engage students may have an impact on improving their literacy skills.

The objectives of the current study are, (1) to design gamification-integrated classroom activities, and (2) to analyse students' motivation and interest in learning through gamification. The hypothesis was that students taking parts in the Food Preservation Technology course were motivated and more engaged during gamification-integrated learning. Gamification in learning can also lead to deeper discussions with peers and instructors during classroom sessions. Furthermore, when students are actively encouraged to apply their knowledge during classroom sessions, it is also believed that this knowledge will retain better, thereby enabling them to better answer cognitively complex questions during exam (Bouwmeester et al, 2019).

## Materials and Methods

This study was conducted in a Food Preservation Technology course (CBE658) which is an elective course of a 4-year Chemical Engineering program. This course was mostly taught using the incorporation of game-based and gamification of learning. Students were asked to plan their learning by watching recorded videos and reviewing lectures in the online Learning Management System (LMS) which is the UiTM MOOC platform, before face-to-face classroom sessions. Students must gain prior information and knowledge on the topics so active participation could happened during the game-based and gamification in classroom. Padlet and QR Code were used in a gamification session that was designed as a Treasure Hunt. Fig. 1 and Fig. 2 show the tools used in Treasure Hunt integrated as gamification during the learning process.

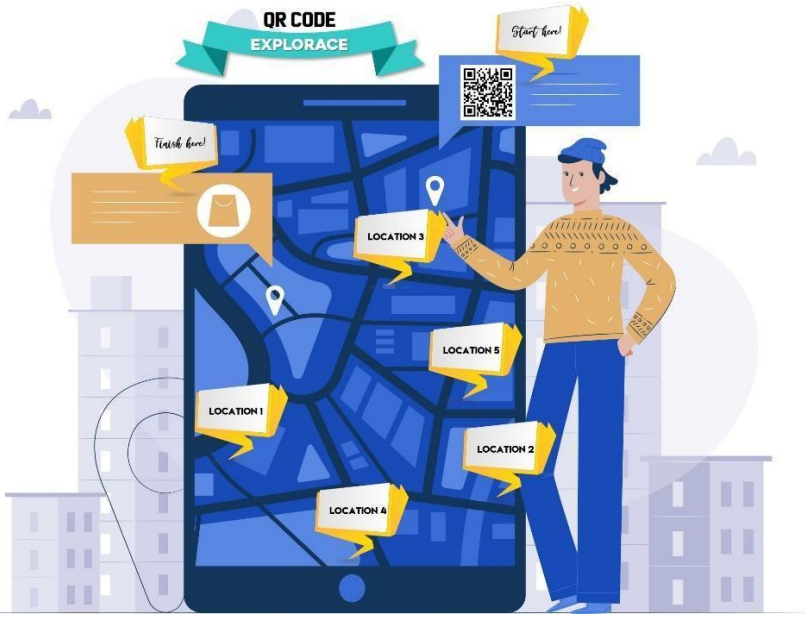


**Fig. 1** Tools used in the gamification setting: QR Code concept for Treasure Hunt

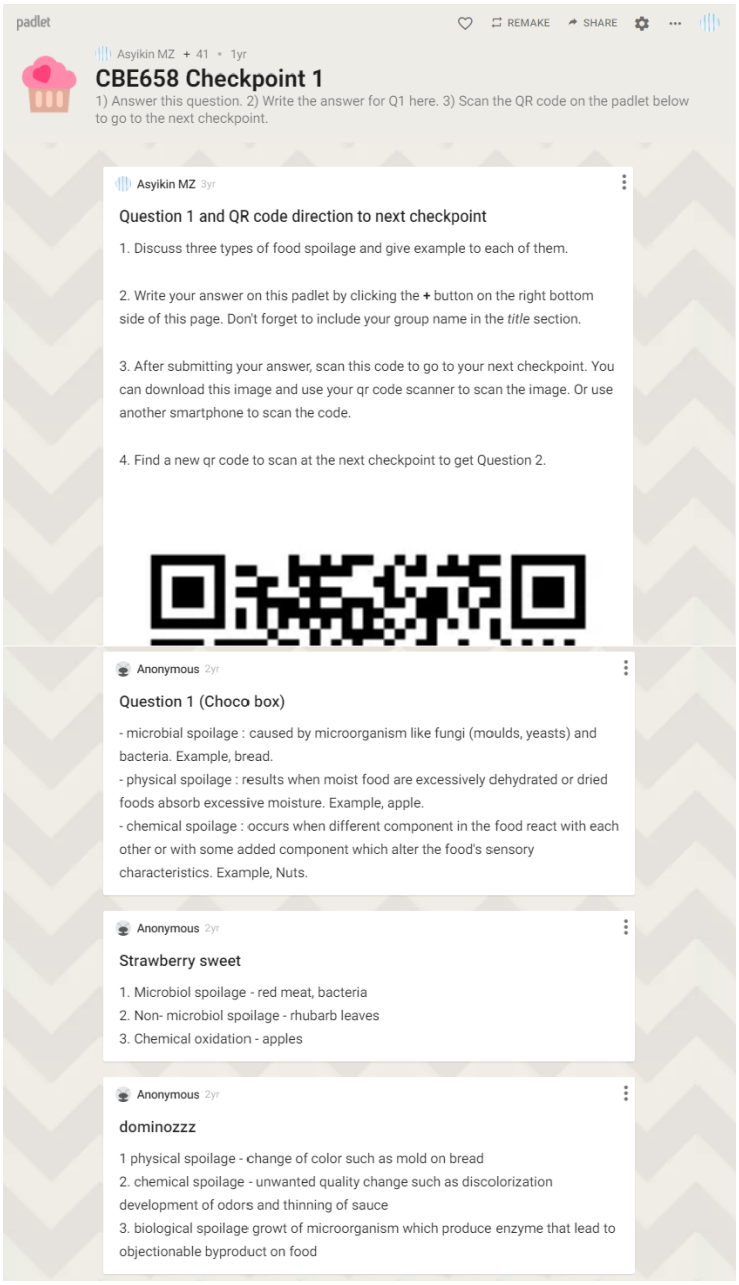


**Fig. 2** Tools used in the gamification setting: Padlet for Treasure Hunt

At the end of the course, feedbacks from the students were important to enhance the way of teaching and learning in the future. Google Forms was used to collect feedbacks on the students' preference, interest and motivation in learning.

## Results and Discussion

A total of 276 students took part in the questionnaire feedback survey. Fig. 3 shows the type of teaching methods and learning activities mostly preferred by students. It was observed that game-based and gamification approach gained the highest preference at 70.3%. The second highest preference was activity using technology which was not surprising as this mobile-savvy generation engaged with their gadgets most of the time. Clearly, only around 25% were motivated by traditional lecture approach in classroom setting.

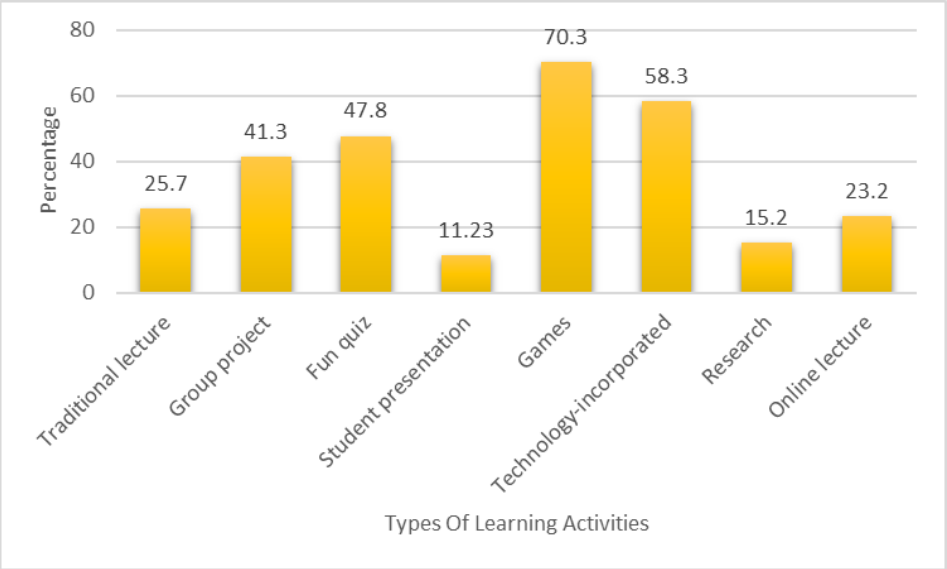


**Fig. 3** Students' Preferences on Learning Activities

## Conclusion

Game-based and gamification in classroom offer flexibility of learning and make the course more interesting for both students and instructors. Students may need to adapt their learning approach to benefit from the game-based and gamification model. They learn immersively and gain knowledge deeper through gamification. It seems that gamification has more implied expectations compared to conventional teaching approaches, and students need to be prepared for knowledge acquisition, either in the classroom or online platform. It is important that educators are able stimulate students' self-motivation and engagement during the practical of game-based and gamification approach in classroom or online platform. The effects of game-based and gamification should be considered during design phase because some game elements such as points and ranks are rarely used independently (An, 2020). It can be concluded that game-based and gamification-incorporated learning do benefit motivation and performance if designed properly.

## Acknowledgement

The authors would like to acknowledge the Faculty of Chemical Engineering for support, and all students of Food Preservation Technology course for continuous cooperation.

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VSTL18

# Understanding Primary School English Teachers' Responses about Class Size to Students' Achievement in Pengerang Zone, Kota Tinggi District, Johor

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**Abstract**

The debate over class sizes has been intense over the past decades in the field of education. Therefore, this study aimed to gain an understanding of the scenario of teaching different class sizes from the perspectives of the teachers, in particular relating to students' achievement in English subject. The purpose of this study is to gather and understand teachers' responses concerning class size to students' achievement, particularly English Language teachers in primary schools. This study is significant as it has highlighted teachers' agreement on smaller classes increasing students' academic performance. The findings of this study were gathered through means of questionnaire involving 37 primary school English teachers in Pengerang zone, Kota Tinggi district, Johor. The quantitative data from the questionnaire was analysed using GNU PSPP Statistical Analysis Software for the descriptive analysis. The findings of this study revealed that all the 37 participants agreed that smaller class sizes increase students' achievement in English Language; hence they agreed the significance of class sizes related to academic performance. Moreover, several issues associated with large classes are discussed from the English teachers' perspectives.

**Keywords**: class size, students' achievement, primary school, English language teachers.

## Introduction

Quality education means a system that will produce the human capital which is knowledgeable and capable in several talents. However, there are several entwined elements towards ensuring a quality education; some would be educational policies, teaching strategies, school administration; and the most significant and influential, the teachers. Undoubtedly, teachers play the most influential role in assuring that every child in the classroom gets the equal chance to a quality education (Hashim,1999).

Therefore, this study looked at teachers' responses in terms of their experiences and perceptions while dealing with small and large number of students in classrooms. Hence, the purpose of this study was to gather and understand teachers' responses about class size to students' achievement, particularly English Language teachers in primary schools. This study determined to what extent the English teachers at primary schools agree or disagree about reviews of class size to students' achievement. With the purpose been outlined, the following research question was developed;

***Research Question 1 (RQ1)**: Do primary school English teachers agree or disagree that smaller class sizes increase students' achievement in English Language?*

Generally, class size is defined as the number of students enrolled in a particular class or lesson. Therefore, class size can be defined as the number of students in a classroom, specifically the number of students being taught by individual teachers in a classroom; or extend to the number of students participating in learning experiences which may or may not take place in a traditional classroom setting. For the purpose of this study, as taken from Blatchford and Russell (2018), *small classes are those consisting of 13 to 17 students while large classes typically have more than 31 students*.

## Literature Review

Numerous studies were conducted over past decades investigating the relationship between class size and students' achievement. Most of the studies tested the common hypothesis of *'Small classes clearly increase students' achievement'.*

Project STAR (Student/Teacher Achievement Ratio) was a four-year experiment conducted by the state of Tennessee to research if the students attending smaller classes scored better than the ones attending large classes. It was found that test results were comparatively higher for pupils in the smaller class. Similarly, Leahy (2006) conducted a survey among 20 middle school teachers to gather their observation on class size effects on student achievement. This research revealed that despite the personal differences, mostly the teachers strongly agreed that smaller class sizes indeed increase students' achievement in most subjects. Additionally, several previous researches suggest that smaller classes are easier to manage in terms of disciplining compared to large classes (Blatchford & Russell (2018); Leahy (2006); Jepsen & Rivkin (2009)).

## Methodology

This study was conducted among 37 teachers who taught English Language subject in primary schools in the zone of Pengerang, Kota Tinggi district. Johor. The participants were 16 males and 21 females aged between 25 to 55 years old; with a minimum one year of teaching experience and maximum of 29 years of teaching experience. Furthermore, 29 of them were optionist English teachers while the remaining 8 were non-optionist English teachers who did not have their degree majoring in English Language. Typically, all the respondents taught in classes with average number of students between 26 to 37. A majority of the respondents were from the national schools (Sekolah kebangsaan) at 81.1% while 10.8% from Tamil medium schools (SJKT) followed by 8.1% from Chinese medium schools (SJKC).

As to obtain data to answer the RQ1, this study employed the quantitative research design through survey method using questionnaire. The questionnaire was adapted from Leahy (2006). It was a quantitative questionnaire based on a four points Likert Scale measure. It consisted of 9 questions about the teachers' perception of class sizes and their impact on their students' learning. Consequently, the data gathered was interpreted using measures of central tendency, respectively the mean, median and mode. In addition, standard deviation for each item in the questionnaire was also calculated to inform how measurements for a group are spread out from the average (mean), or the expected value.The data gathered through the questionnaire was organised and calculated using GNU PSPP 1.2.0, which is a programme for statistical analysis of sampled data.

## Data Analysis

All the items in the questionnaire have been analysed statistically through measures of central tendency, standard deviation, frequency distribution and percentage calculation as shown in Table 1 and 2. The following is interpretation of the scores identified and how they are relevant to this study.

**Table 1 Frequency Count for each Item in the Questionnaire.**

| | Statement | N | SD | D | A | SA |
|---|---|---|---|---|---|---|
| 1 | Class size is a main factor that is closely related to student achievement. | 37 | 0 | 3 | 19 | 15 |
| 2 | Larger class sizes affect student achievement negatively. | 37 | 0 | 2 | 18 | 17 |
| 3 | Larger classes have more discipline problems. | 37 | 0 | 0 | 19 | 18 |
| 4 | Language teachers have difficulties grading the students' work, including essays and papers. | 37 | 0 | 2 | 11 | 24 |
| 5 | Smaller classes allow more time for teachers to spend on language skills which can increase student achievement. | 37 | 1 | 2 | 5 | 29 |
| 6 | Smaller class sizes lead to substantially faster gains in reading and writing due to more individualised instruction. | 37 | 1 | 0 | 17 | 19 |
| 7 | Class size reductions are costly and should not be implemented in schools. | 37 | 10 | 20 | 4 | 3 |
| 8 | Small class size is merely a beneficial factor. | 37 | 2 | 3 | 17 | 15 |
| 9 | Classroom management processes are smoother in small classes compared to larger classes. | 37 | 1 | 0 | 6 | 30 |

***Note**: N=Number of responses. SD = Strongly Disagree, D = Disagree, A = Agree, and SA = Strongly Agree*

*Items 2,3 and 4* which respectively have *94%, 100% and 65%* of agreement imply that teachers generally perceive smaller classes to allow more time for them to spend on facilitating the learning process effectively which can increase students' achievement significantly. The frequency count also shows that teachers were highly concerned with class size since it determines decisions related to classroom management, pedagogical approach and directly affect students' achievement as well. This can be observed in *Items 5 and 6* in the questionnaire which seeks responses regarding chances of individualised instructions in smaller classes with a high percentage of *78% and 51%* respectively.

**Table 2 Mean, Median, Mode and Standard Deviation Scores for each Item**

| Item | Mean | Median | Mode | Standard Deviation |
|---|---|---|---|---|
| 1 | 3.35 | 3 | 3 | 0.588 |
| 2 | 3.37 | 3 | 3 | 0.639 |
| 3 | 3.56 | 4 | 4 | 0.502 |
| 4 | 3.29 | 3 | 3 | 0.661 |
| 5 | 3.51 | 4 | 4 | 0.651 |
| 6 | 3.43 | 3 | 3 | 0.647 |
| 7 | 1.97 | 4 | 4 | 0.442 |
| 8 | 3.13 | 3 | 3 | 0.855 |
| 9 | 3.83 | 2 | 2 | 0.833 |

As for *Items 1, 2, 3, 4, 5, 6 and 9* in the questionnaire, the mean scores are exceeding 3.26 which can be interpreted as a very positive response for the statements given. All the statements in those seven items are regarding the importance of class sizes generally and how bigger number of pupils in a class contribute to issues such as large workflow, choice of pedagogy, disciplinary problems, time constraint and finally leading to the delayed acquisition of reading and writing skills. Based on mean score interpretation by Amin et.al (2009), these high mean scores for all these items show that the participants agree strongly with the statements on benefits of reduced class sizes.

As for *Item 9* about classroom management processes, the mean score is *3.83*. This imply a very positive result since the participants agree to the statement, thus teachers agree that classroom management processes in smaller classes flow easier with less disruptions and opting to teach smaller classes will be better. For *Item 8*, the mean score is *3.13* which can be interpreted as a positive response where the statements explain that class sizes could be one crucial factor in determining a successful teaching and learning process.

Only Item 7 which inquiries about cost of class size reductions received a very low mean score at *1.97*. This is considered as a negative response; however, it implies that despite the high cost, teachers are looking for the government to implement class size reductions in schools. All the mean scores and standard deviation calculated solidify that most teachers agree with the statement that smaller class size affects student achievement positively. It was clear that all the items in the questionnaire received a majority of agreement with a huge difference in the percentage calculation, mean scores interpretation and a low standard deviation affirming the mean calculated for each of them. Therefore, it could be concluded that all the participants who were primary school English teachers do prefer teaching small classes; hence *agree that smaller class sizes increase students' achievement in English Language.*

## Findings and Discussion

The results of this study have highlighted teachers' preferences and agreement on the effects of class size on students' achievement in English Language subject. Numerous significant inputs have been derived from the data analysis. Firstly, all the participants who were primary school English teachers prefer teaching small classes due to several reasons. These reasons began with being able to employ variety of pedagogical approach to reach the learning goals, lesser issues with classroom management processes, and lastly, being able to build and maintain a positive relationship with their pupils which inadvertently affect the academic achievement and motivation of pupils.

Leahy's (2006) study insisted that class size reductions will be effective in reducing the burden of teachers while also enabling them to plan their lessons and execute them in a more effective way catered to the individual learners in their classes ensuring better academic performance. While Finn et. al. (2003) reviewed the sociological and psychological theories related to class sizes and affirmed that students tend to behave positively in smaller classes improving their academic achievement.

Consequently, the data gathered in this study revealed that all the 37 participants agreed that larger class sizes could cause a significant decrease in student achievement and perceived as their strong preference for teaching in smaller classes, hence this answers RQ1.

## Conclusion

After a thorough discussion of findings, it is affirmed that primary school English teachers particularly in Pengerang zone, Kota Tinggi district agree to the notion that smaller class sizes increase students' achievement in English Language. It is concluded that class size plays a significant role in the teaching and learning processes; encompassing areas such as classroom management, availability of resource materials, effective use of space and most importantly, academic achievement. Ministry of Education should take into consideration the issues related to the teaching of English in small and large classes prior to implementing new programmes or policies with regard to improve teachers' knowledge and skills concerning teaching procedures and other related administrative duties. The findings gained imply that the teacher trainees should be prepared with guidelines about managing bigger classes. In addition, some efforts of reforming the appropriate teacher-student ratio in schools need to be initiated by the educational officials in all the schools, districts, states and in the ministry. It is advocated that these different officials work together in restructuring and implementing successful class size reductions.

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VSTL19

# Distance Learning for Design Students: An Analysis of Student Performance in Independent Landscape Design

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**Abstract**

Independent Landscape Design (LDA350) is the final semester course that requires a full landscape design proposal. This design-based syllabus is more acquainted with face to face or physical teaching-learning process. However, in order to pursuit the IR 4.0 education, this course has adopted MOOCLAA350 to engage and equip these design students with significant understanding, graphic presentation skills as well as technical aspect related to design developments and constructions. The teaching and learning environment have subsequently expanded. With the outbreak of the Covid-19 pandemic that started early this year, this course is easily adaptable to this educational change with ODL (Open Distance Learning) being the new strategy that was put forth for teaching and learning. This paper analyses student performance in adopting MOOC and ODL during the Covid-19 outbreak. An online survey supported by a comparative analysis in between the semester was conducted to evaluate the student's readiness, challenges, and performance throughout the semester. Some tools and techniques to ensure the continuity of learning during the current pandemic are described. The findings revealed factors contributing to student performance and the reality behind the success of this new teaching strategy.

## Introduction

Distance learning in education has significantly witnessed the growth in changing the pedagogical conventional learning environment. According to Schneider (2020), distance or open learning has become a new norm and will continue to embrace the teaching strategy. However, the delivery methods and effectiveness of distance learning for the design-based students have always been doubtful and remained irrelevant. Therefore, when the Covid-19 pandemic struck and started disconnecting people physically, the open learning method was the only solution to keep people connected and continue working in distance (Adnan M., & Anwar K. (2020) and Agarwal S., & Kaushik J. S. (2020)). Adnan (2020) added that educational institutions have to adapt, design appropriate and effective content, arrange an effective delivery system, and provide digital literacy training to pursuit the current situation and achieve better learning outcomes. The prompt changes in the learning environment due to the outbreak of the Covid-19 pandemic have uplifted the open distance learning (ODL) method to another level (Montebello (2017)). This further seeing the transformation of conventional learning through face to face as a significant challenge for landscape architecture design-based courses applied by University Teknologi MARA Perak Branch (UiTM). From April to August 2020, this unique semester has further demonstrated the challenges faced by both academicians and students in making sure that online learning is deliverable especially for the Independent Landscape Design course, a compulsory course offered for the final year students of Diploma in Landscape Architecture, UiTM Perak Branch.

## Distance Learning for Design students

In line with this ODL application, an online survey was carried out in March 2020 to understand student's readiness and their challenges for ODL implementation. A total of 102 students registered for the Independent Landscape Design course are the respondents for this survey. They are the final year students in semester 6 that were involved fully in ODL during the COVID pandemic semester from February to July 2020. Within the comfort of their home, the majority of the students with 84.3% informed that they owned a laptop, while 82.4% noted to have smartphones that enable them to participate

effectively in the ODL process (see Figure 1). Equipped with personal electronic devices, these findings further denote that students are ready to get involved in the open distance learning procedure directly from home.

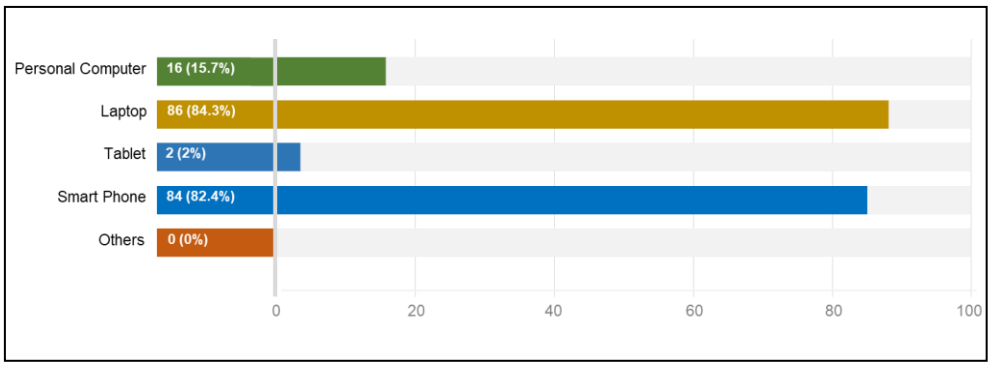


**Fig 1** Electronic devices owned by students

Since this online survey was focused on the Independent Landscape Design online application, the students were required to highlight the online platform preferences that aid them in their learning process. As the respondents were allowed to select multiple choice of answers, the result in Figure 2 illustrates that the majority of the respondents with 86.3% prefer WhatsApp application as their main platform. This Whatsapp application is the most accessible, affordable and allowing quick responses which is aligned with Cook and Dupras (2004) and Gewin (2020) research that acknowledged the most effective online platform is the one that enables learners to interact with the material, pursue the information at their speed and engage in the course through feedbacks and commentaries.

The preferences result is further followed with ZOOM application (61.8%), Telegram (54.9%), i-Learn V3 UiTM (52.9%), MOOC Open Learning platform (51%), and Google Classroom (46.1%). These findings further aid the academicians in setting up the right learning platform in line with the students' preferences in making sure that the online delivery is successful and at the same time able to attain the course learning outcome as stated in the syllabus. Due to students' familiarity with these online platforms, it is hoped that the ODL application is able to uplift the student's learning experience and boost their result for this semester.

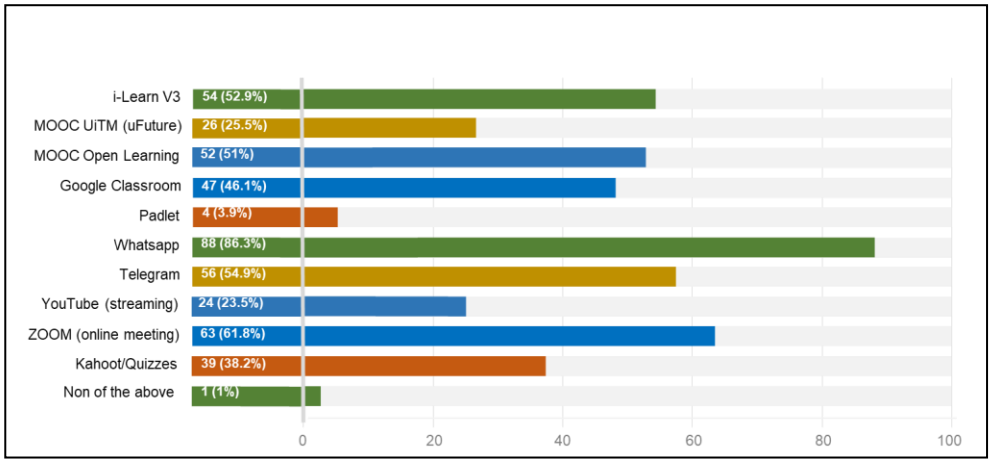


**Fig 2** Selected online platforms

## Analysis of Student Performance during ODL

According to Paul (2019), to measure the effectiveness in conducting ODL during the COVID pandemic, a study could analyze student performance based on the results by several semesters. Therefore, this study analyses the student performance within the three recent semesters (refer Figure 3). This survey sample size is based on the registered students for each semester. The performance is based on final grades achieved by the students. Students are evaluated by their ability in performing landscape design

proposals consisting of design solutions, ideas, technical requirements and final documentation. This study conducted a comparative analysis between the semesters to measure the differences and the trends of how the grades performed. Based on the analysis, it is surprising to discover that the result for this semester depicted an incensement of students getting Grade A for this course (see Figure 3). Despite the challenges faced by both academicians and students throughout this ODL implementation, the student's results for this semester are satisfactory. The delivery process even to the academicians is quite challenging for this semester knowing the subjective demand of landscape design and at the same time to make sure that all 102 students are able to grasp the critical knowledge related to design development and processes, construction drawings, and documentation as well as a technical report. As the proverb says, all hard work pays off, comparative results for the three semesters depicted in Figure 3 demonstrated that regardless of the limitation[1] throughout the ODL implementation, the results for this (COVID 19) semester have surpassed the percentage of the students getting grade A cluster (grade A+, grade A, and grade A-) with an increase of 11%.

This Independent Landscape Design requires students to venture into different project scope and demand (with various design strands that include waterfront landscape design, urban landscape, parks, and community design, institutional landscape design, cultural landscape, urban heritage, and landscape, etc.), therefore, considering this complexity and to attain to each project's aim, this result reveals the successful implementation of the online learning for the landscape architecture program. The increased percentage of grade A cluster has also evidenced in the decrease of the percentage of the students getting grade B (11%) and grade C (1%) as compared to the previous semester March 2019-August 2019 results. [3]

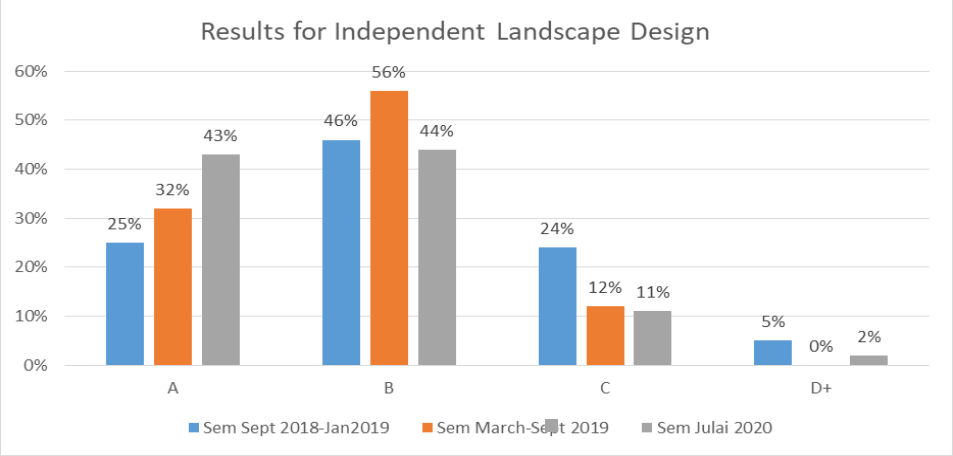


**Fig 3** Results by percentage for three 3 Semester for Independent Landscape Design

Through student preferences of the online learning platforms based on the survey conducted in March 2020 (see Figure 2), it is, therefore, evident that i-Learn v3 and MOOC Open Learning platform have sufficiently aided the students undertaking Independent Landscape Design. Given WhatsApp, ZOOM, and Telegram as the intermediate platforms that sufficiently stand as the communication platforms between students and academicians, MOOC Independent Landscape Design serves as the core reference platform that aided students with four development modules - Module 1 (Introduction of Independent Study); Module 2 (Site Planning & Design Development); Module 3 (Construction & Documentation); and Module 4 (Portfolio and Design Samples). Through consistent online critique session via Google Classroom, Padlet, together with sufficient references uploaded through i-Learn v3 and updated samples in MOOC Independent Landscape Design, challenges faced through ODL implementation is tackled successfully. Besides, these successful students in distance learning contexts showed the ability to study independently, highly motivated and able to absorb the communicated information on their own. Hence, the excellent results depicted in Figure 3 have verified

[3] Due to MCO (Movement Control Order) imposed by the Malaysian Government from 18 March 2020, some students were affected financially due to parents loss of jobs, and some of them are doing part-time online work to support the family financial problems (data were based on the online survey for Independent Landscape Design that was conducted in March 2020). These difficulties have indirectly impacted the work progress of the related students.

that an online learning platform is another teaching method for landscape architecture students.

## Conclusion

Based on the e-survey findings and student performance analysis, this paper demonstrated that distance learning is significant in safeguarding the teaching and learning strategy amid the Covid-19 pandemic. The student performance, for instance, showed an overwhelming contribution of the online learning platforms replacing the conventional teaching methods. These findings also represent the student's survival strategy and how they have been able to overcome the situation as part of the lifelong learning experience. This adds a new dimension to the field of online learning evaluation that enables the comparison of different modalities besides proposing a methodological shift for the future. Furthermore, this online learning for design-based students evident desired findings, where the majority of students are still able to achieve good grades although they are facing various challenges and difficulties. The educator's efforts in exploring various teaching strategies, together with the student's initiatives and motivation are the self-driven factors that have made this online teaching and learning successful. Therefore, this paper highlighted the reliability of teaching strategy, learning initiatives, online platforms, and electronic devices as the important factors assisting the effectiveness of this pedagogical changes. In conclusion, this paper evidences that the practicality and the reliability of conducting open distance learning to design-based courses are no more in doubt and sufficiently competent towards enhancing the teaching methodology during a pandemic and accommodating the trends of Education IR 4.0.

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VSTL20

# Gamification in Language Learning: Students' Opinion on Jenglish

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**Abstract**

Gamification in language learning is not a new concept and has been studied extensively in the field of education. A language game, Jenglish, was developed by 5 ESL students and supervised by a lecturer. The game was adapted from the famous Jenga game by Leslie Scott. Therefore, this paper aims to present the findings from a case study whereby a group of 22 ESL students played Jenglish in 4 ESL lessons. A set of questionnaire was distributed to the respondents of the study after the last lesson to answer 3 research questions: to investigate ESL students' opinion on the usefulness of Jenglish on ESL learning, to investigate ESL students' opinion on the usefulness of Jenglish in relation to affective domain, and to investigate ESL students' opinion on how Jenglish can be improved. IBM SPSS Statistics 25 and thematic analysis were utilised to analyse the data. The findings revealed positive responses for the first and second research questions while some improvement was suggested in the game's appearance, content, and rules. Four themes emerged from an open-ended question about the respondents' opinions of the game which were Compliments, Suggestions to Improve the Game, Benefits, and Others. Whilst findings showed that the game needed improvement, it can be concluded that the respondents found Jenglish useful as a language game.

## Introduction

Investigating learning materials is a continuing concern within the teaching and learning discipline as they need to be engaging in the lesson's activity for the learners to participate. Any lesson requiring the learners to participate as active participants would allow them to readily absorb the information (Resnik, 2004).

One common technique that can be used to make a lesson interesting and enjoyable is the 'gamification' method. Gamification refers to gaming that has consistent learning results that improve the vocabulary, critical thinking, and problem-solving abilities of the learners (Wahyuni & Junior, 2018).The engagement of students encourage problem-solving by going through a thought process in playing games (Zichermann & Cunningham, 2011). Gamification involves elements such as competition, teamwork, earning points, winning and losing, completing levels and obtaining rewards to improve player participation (Wahyuni & Junior, 2018).

A zone of proximal development by scaffolding and mentoring strategies is consequently shaped by game-based learning. The proximal development zone is a distance between the current developmental region and the future level of development as defined by the ability to solve problems with adult guidance or in cooperation with more competent peers (Vygotsky, 1978). In a game, the instructor will provide scaffolding such as offering guidance or encouraging them, while at the same time keeping the lessons flexible while ready to meet the need of the students to obtain engagement (Ghazal & Singh, 2016). When the students are familiar with the concept and able to address the issues on their own, the instructional assistance would be steadily removed.

Game-based learning also helps the participants to be in a state of flux. Students can feel flow while playing the game when they are fully engaged with the practice (Paras and Bizzocchi, 2005). Flow is a condition in which someone is completely consumed by the action to the extent where his attention cannot be disturbed even by external stimuli (Csikszentmihalyi, 1975).The high degree of intrinsic motivation and total focus on the mission make someone rises from one level to another unconsciously

(Kurt & Kurt, 2018).

Through game-based learning, communication skills can be strengthened. Multiplayer game interactions between players can improve the social skills of the players and at the same time gain empathy for the ethics and ethical decisions when they are in the role of the game (Ghazal &Singh, 2016). A study by Fung & Min (2016) showed that students were able to increase their self-confidence through games and improve their sense of control because less pressure was felt while playing games, thus reducing their anxiety to talk and creating a supportive peer-learning atmosphere.

Therefore, this study aims to contribute to research on gamification in ESL learning by finding the answers to these three important questions:

a) To investigate ESL students' opinion on the usefulness of the language game, Jenglish, on ESL learning
b) To investigate ESL students' opinion on the usefulness of the language game,Jenglish, in relation to affective domain
c) To investigate ESL students' opinion on how the language game,Jenglish, can be improved

## Methodology

In 3 weeks, while supervised by their instructor, a group of 5 ESL students was given a task to design and develop their language game. They opted to adapt the idea from Leslie Scott's popular game, Jenga, and created a different set of new rules and tasks that ESL learners found more fitting and engaging. It was played by their classmates, 22 ESL learners, in 4 ESL lessons after its completion.

The participants were asked to complete a questionnaire after the fourth lesson to discover their opinion on the usefulness of the game, Jenglish, and their ideas on how to develop the game. In the questionnaire, there were 3 main sections:

a) the usefulness of the game on ESL learning (5 Likert-scale items)
b) the usefulness of the game in relation to affective domain (3 Likert-scale items)
c) suggestions to improve the game (1 checkbox item + 1 open-ended item).

Using IBM SPSS Statistics 25 to address the 3 research questions, the data obtained was analysed and descriptive statistics were used in presenting the results. The Shapiro-Wilk test of normality tested all the Likert-scale items (8 items) and their reliability was tested using Cronbach alpha with $\alpha>0.8$ result suggesting very good internal consistency reliability (Pallant, 2016). For the open-ended item, thematic analysis was applied and the themes that emerged from the analysis were discussed.

## Findings and Discussion

*a. Test of Normality*

**Table 1**

**Tests of Normality**

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| SKILLS | .304 | 22 | .000 | .773 | 22 | .000 |
| FUN | .290 | 22 | .000 | .740 | 22 | .000 |
| KNOWLEDGE | .274 | 22 | .000 | .828 | 22 | .001 |
| RECOMMEND | .240 | 22 | .002 | .817 | 22 | .001 |
| PLAY | .284 | 22 | .000 | .766 | 22 | .000 |
| MOTIVATE | .294 | 22 | .000 | .799 | 22 | .000 |
| EXCITED | .270 | 22 | .000 | .760 | 22 | .000 |
| CONFIDENT | .274 | 22 | .000 | .828 | 22 | .001 |

a. Lilliefors Significance Correction

The table above shows that the Sig. value of each Likert scale item for the Shapiro-Wilk statistic was either .000 or .001, suggesting violation of the assumption of normality (Pallant, 2016). Thus, the median (a non-parametric statistic) of each Likert scale item was used instead of the mean to report the descriptive analysis.

*b. Research Question 1: ESL Students' Opinion on the Usefulness of Jenglish on ESL Learning*

**Table 2**

**Statistics**

| | | SKILLS | FUN | KNOWLEDGE | RECOMMEND | PLAY |
|---|---|---|---|---|---|---|
| N | Valid | 22 | 22 | 22 | 22 | 22 |
| | Missing | 0 | 0 | 0 | 0 | 0 |
| Median | | 4.00 | 4.50 | 4.00 | 4.00 | 4.00 |
| Std. Deviation | | .631 | .790 | .811 | .853 | .907 |

The table above shows that all 5 Likert scale items in this section were rated positively by the respondents. They agreed that Jenglish helped improve their English language skills (median = 4.00), helped learn English while having fun (median = 4.50), improved knowledge about the English language (median = 4.00), they would recommend the game to other people (median = 4.00), and they wanted to play the game in their English class (median = 4.00).

*c. Research Question 2: ESL Students' Opinion on the Usefulness of Jenglish in Relation to Affective Domain*

**Table 3**

**Statistics**

| | | MOTIVATE | EXCITED | CONFIDENT |
|---|---|---|---|---|
| N | Valid | 22 | 22 | 22 |
| | Missing | 0 | 0 | 0 |
| Median | | 4.00 | 4.00 | 4.00 |
| Std. Deviation | | .774 | .767 | .811 |

The table above shows that all 3 Likert scale items were rated positively by the respondents. They agreed that playing Crackly motivated them to use English (median = 4.00), made them excited to learn English (median = 4.00), and made them became more confident to use English (median = 4.00).

*d. Research Question 3: ESL Students' Opinion on How Jenglish can be Improved*

**Table 4**

| Suggestion for improvement | Percentage |
|---|---|
| Appearance | 68.2 |
| Content | 54.5 |
| Rules | 40.9 |

Table 4 shows that 68.2% (n=15) of the respondents thought that Jenglish needed to improve its appearance. Other than that, 54.5% (n=12) of the respondents chose the game's content and 40.9% (n=9) of the respondents chose the game's rules as the other 2 aspects that needed to be improved.

**Table 5**

| Themes | Comments | |
|---|---|---|
| **Compliments** | "nice"<br>"I think this game is so great and nice"<br>"good game"<br>"good rules"<br>"good"<br>"I love it so much"<br>"Its amazing" | "Excellent"<br>"Interesting"<br>"Best"<br>"i like this game"<br>"gg yey"<br>"Splendid"<br>"A recommended english game" |
| **Suggestions to Improve The Game** | "The games should be more interesting"<br>"More fun question" | "more questions needed" |

| | | |
|---|---|---|
| | "Make more interesting the appearance"<br>"its good game but more content and improve your game"<br>"more creative"<br>"The block of jengabeed to be more bigger"<br>"Improve the rules of the game and the createria for finding the winner" | "Add more task or question to make it more fun."<br>"More colourful"<br>"Need to make it interesting while play the game"<br>"they need to make the game become more interesting by give the participent the prize if they win the game"<br>"the jenga make it bigger" |
| **Benefits** | "fun"<br>"It is fun to play with others" | "It is fun and intersting to play it." |
| **Others** | "Do the best" | "trying not to give any excuses for the participant" |

The comments above were presented exactly as written (verbatim) by the respondents and 4 themes emerged from the thematic analysis.

## Conclusion

The ESL game that was developed by the ESL students, Jenglish, received positive feedbacks from the respondents who had played the game 4 times in the ESL lessons. Findings for the first research question revealed that the game was useful in ESL learning and for the second research question, it was revealed that the game was useful in relation to affective domain. Despite these findings, the results for the third research question indicated that the game needed to improve its appearance, content and rules which were also reflected in one of the themes from the thematic analysis, Suggestions to Improve the Game.

In conclusion, a carefully developed language game by ESL learners can yield interesting positive results from the point of view of other ESL students. Although guided and supervised by a language instructor, several aspects of the game should be improved for its future usage in ESL lessons as suggested by the respondents of the study. It is recommended that future studies explore the significance of this language game on ESL learners' performance in English language skills and the effects of developing an ESL game on the ESL game developers.

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VSTL21

# The Use of Social Media in Teaching and Learning for Dance Education at Tertiary Level

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**Abstract**

Online learning emerges as the oft talked constraint among educators especially, at the Tertiary level. Most students are encountering hardships in accessing the internet without hiccups, especially during the movement control order/quarantine/self-isolation due to the ongoing pandemic caused by Covid-19. However, internet access for the use of social media is easily available and not limited. As a result, teaching and learning techniques focusing on students of higher learning institutions can be done using social media apps such as Facebook, TikTok, YouTube, and Instagram.The aforementioned social media apps served as a platform to raise interest and increase attraction in dealing with learning activities in 21st century.

Keywords: *Interdisciplinary, Constructivism, Dance Education, Performing Arts, Intracultural, Trans-education, Endragogy, Pedagogy*

## Introduction

The use of social media is one of the platforms that inspire students to be more focused, especially in completing their assignments and practical tasks for selected classes. It is occasionally perceived as simple but has a wide impact and effect in terms of presenting and cultivating students' creativity. Generally, creativity is often paid lip service, but in reality, most schools are currently experiencing a "creativity gap" with significantly more creative activities are taking place outside schools. Numerous psychologists argue that creativity is not just an enrichment or add-on in the classroom - it is a definable, measurable set of psychological skills that enhances learning and will be required in the 21st-century workforce. In the field of dance, it does not only provide students with various information and practical tasks, but also giving opportunities for students to get closer to the industry. It is easier and more appropriate for this millennial generation so that they are ready to break into the industry once they graduated. Based on what the researcher went through in the field study directly through the teaching process during the ongoing pandemic caused by Covid-19, students often justified that their internet access has always been abysmal. Nevertheless, in general, they are more likely to interact and work more creatively through platforms such as Instagram, TikTok, Facebook, and YouTube due to easier availability as compared to extended live streaming.

Through this observation, the researcher delegated tasks to students, such as creating and recording dance moves for uploads onto TikTok and Instagram applications. Aspects of learning and teaching by using the aforesaid platform not only attract their interest to be closer to the world of education and excellence, but also provide opportunity for students to promote their work, talents, and creativity to the industry. It is aligned with the first objective of this research, which is to prepare students to be more independent in finding new ideas in exploring the 21st century dance art. All the information shared in the WhatsApp application has also been changed to group discussions via Instagram. The work and the practical assignments assigned by the lecturer not only provide opportunity for one-to-one feedback, but also provide opportunity to the public to provide feedback in the comments section. Hence, social media works well for research, offering useful audience and subject monitoring tools. Students may use polls, surveys, or even just post a simple question to gauge how people feel about a specific topic (Altounian, 2015).

The utilisation of Instagram Live is also one of the lecturer's creative initiatives in assigning tasks such as creating new movements, recording choreography and many more. Through Instagram Live created by students, they will be more proactive in providing response to the watching audience members and this indirectly improves their communication skills. In today's frenzied world, we rely heavily on sharing information, resulting in greater emphasis being placed on having good communication skills. The second objective in this study is to help students to be more confident in communicating with and accepting feedback from the public. Good verbal and written communication skills are essential in order to deliver and understand information quickly and accurately (Beqiri, 2017). Therefore, communication is imperative in introducing and "selling their products", which is their dance performance. Every work they produced should increase the probability of incoming inquiries and comments from the public. Owing to the virtual experience with the audience, it is expected that the confidence level of students performing live in front of the audience will increase drastically. Every performance performed virtually is equal to the actual live performance; in fact, it has more viewers than the actual performance in the real theatre space thanks to the accessibility.

*Seven Functions of Performance* is a theory used in all types or forms of performances, including live on stage and virtual performances. In the context of performing arts, any performance is related to the 7 main points in observing the relationship between the reason and the cause of performance. There are a few functions of a performance shown in table 1. Richard Schechner proclaims that *'performing onstage, performing in special social situations (public ceremonies, for example), and performing in everyday life are a continuum'* (Schechner, 2002, p. 143). His contention that each one of us is in some sense a 'performer' is difficult to dispute. Engaging in 'real-life' is often indistinguishable from 'role play' and in today's 'surveillance societies' of Western culture as CCTV cameras are seemingly available everywhere. Hence, the scope for performance as an extension of simply having never been wider. The evident logical development of this is the ubiquitous 'reality TV' shows, as well as the do-it-yourself webcams and personal websites on the internet, both of which have contributed a new dimension to 'the style of being'.

| |
|---|
| To entertain |
| To make something beautiful |
| To mark or change identity |
| To make or foster community |
| To heal |
| To teach persuade or convince |
| To deal with the sacred and/ or demonic |

**Table 1**: Functions of Performance

## Materials and Methods

Generations X, Y, and Z are among the generations that are so active in social media and by using a platform like this, it will make students more forward and always actively looking for content for their social media (A. Hamzah, 2010). Everyone engages with brands on social media differently. This is doubly true when it comes to different generations of consumers. Understanding your customers' social media habits is the key to reaching them where they're browsing and purchasing online, while memorable content caters to your audience's platforms of choice, and their behaviors on those platforms. 75% of millennials said a brand's social media presence impacts their purchase decisions. Gen Z, Millennials, and Gen X rated YouTube as the platform where they make purchase decisions. 60% of Gen Xers prefer video when learning about a new brand or product. 52% of Gen Xers and 41% of Boomers said video was most helpful when making a purchase decision online (Gonzales, 2019).

In this study, the methodology used is qualitative as the researcher conducted a field study this past semester with students for the following subjects: FF122 Traditional Dance and FF123 Physical Theater. The process was performed four times a week and each process took three to four hours. For clarity purpose, Table 2 was prepared, followed by implementation carried out to obtain the results of the study. Students are required to create their respective social media account on Facebook, Instagram, YouTube, and TikTok. Each student needed to ensure that the content uploaded is based on the art of dance performance. Students were given the option to upload all dance tasks given by the

lecturer and confirmed that each task has a theoretical continuity applied in *Seven Functions of Performance* (Schechner, 2006). Among the main things that students needed to focus on is how to produce the dance video that many people like as well as educating the audiences who were watching. Through these seven functions of performance, the researcher used four of the seven functions: To entertain, to make something beautiful, to make or foster community, and to heal.

| Tasks | Activity by months from the start of the experiment | | | | |
|---|---|---|---|---|---|
| | February-March 2020 | April- May 2020 | May- June 2020 | July-August 2020 | SEPT 2021 |
| Content and introduction of the task to the students | Syllabus content | Rehearsal one and half hour Studio, one and half hour social media | Rehearsal one and half hour Studio, one and half hour social media | Rehearsal one and half hour Studio, one and half hour social media | |
| Conduct Classes, Reliability Analysis, Finalise Interview Schedule | - Studio rehearsal- live social media.<br>- FFT122 Traditional Dance | Studio rehearsal- live social media.<br>- FFT123 Physical Theatre | Studio rehearsal- live social media.<br>- FFT122 Traditional Dance<br>- FFT123 Physical Theatre | Showcase on social media | Final showing |
| Select Social Media (TikTOk, YouTube, Facebook, YouTube) | Group Work | Group work | Group Work | Group Work | |
| Transcribe Interviews. Analyse Transcriptions, Thematic Analysis | | | | | |
| Write-Up, and Documentation | Introduction | Development | Objective development | Methodology development | |

**Table 2:** Gantt Chart of Research Activities

The selected four functions of performance worked closely with the research because the main reason in performing arts is to entertain, as most of the tasks given to the students are the point of entertainment. This phase is divided into 2 divisions as shown in Table 3. Every student in the studio or class is expected to attain and comprehend ideology, information and various techniques required to fulfill the tasks assigned by the lecturer. Therefore, every process that happens in the studio or classwill be shared on the social media. The comments gained by the netizen will help in order to know their weaknesses especially from the audience as viewers. Through those comments gained, unintentionally it will be ableto relate with one of the points of performance which is to entertain.

| Studio | Social Media | Outcome |
|---|---|---|
| - Knowledge<br>- Information<br>- Technique<br>- Performance Quality | - Showing<br>- Receiving feed-back<br>- Experimentation | - At this stage all students will get as much information and feedback from viewers |

**Table 3**: Ongoing process

## Result and Discussion

The function of social media as a tool helped students to be more interested in deepening the field of education at the higher learning level. They obtained the opportunity to utilise social media as part of their lessons due to the ongoing Covid-19 pandemic. At the same time, each student was asked to take note and read the responses from the audience who were watching their video. These responses were brought to the discussion session with their fellow classmates and lecturers who are teaching or supervising the subject. This allows each student to identify the needs and wants of each content they uploaded. Therefore, students are able to entertain the audience with their content.

In the lecture space, lecturers always provide input and techniques in the art of dance performance, such as the quality of performance, body techniques, facial expressions and so on. Students were expected to adhere the aforesaid input and techniques as they were performing not only to fulfil their tasks, but also showcasing their talent and abilities to master them even though they were only able to learn them from the online sessions and eventually delivering onto their social media. Through this system, the students are not only given the information they need being part of the institution of the higher learning, but they are also given the space to learn, entertain, find creative ideas, and learn to sell their art products, thus making them creating something beautiful.

As the students performed vigorously on their choice of social media apps, it is best to reinforce the notion that the watching audience were not only people related to the class or the faculty, but also virtuosos and practitioners from the industry. Previously, they were unable to secure wider audience due to unforeseen circumstances. Through communication via social media, it will indirectly bring students together with the performing arts industry and make them readily available to be in the local art industry, as well as abroad. Hence, the students successfully make or foster community from their performance that would benefit them in near future.

Through their social media, students' performance served as a catalyst of consolation in the times of uncertainty. At the time of the performances, Malaysians rarely left their home due to the strict regulation of Movement Control Order. Simultaneously, the students were facing their own challenges in participating the online classes as many of them were residing in areas where internet connection has been abysmal. As a result, the performances that they worked on and later shared on their respective social media served as "a remedy" for their predicaments in the time of pandemic. Simultaneously, their appreciative audience were able to enjoy the performances from the comfort of their home.

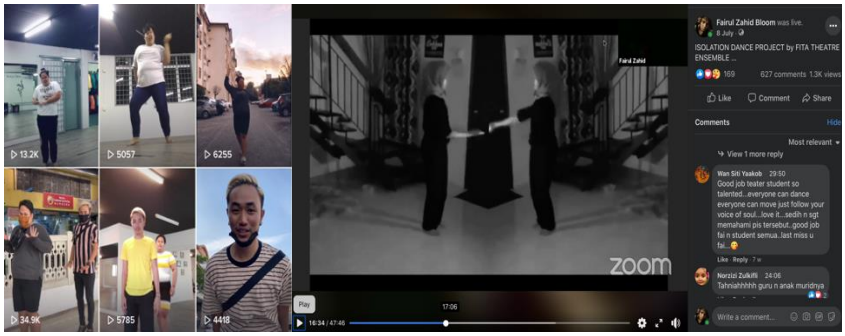


**Figure 2**: Students' final outcome from Social Media

## Conclusion

Assessing students from a dance standpoint of view requires various aspects such as face-to-face comments, public performance appraisals as well as the production of creativity on an ongoing basis that requires constant monitoring. By using this social media platform, it converts the negative perception of the use of social media by these millennial teenagers into a form of inventive and interactive learning in the 21st century. Moreover, social media is also part of the tradition that depends on the diachronic process that happened to be the new norms for the dance education in Malaysia. In order for us to educate the students, we must know what they like to do, then we have to know the kind of tools that they want to study even more persistently and most importantly enjoy doing their assignment.

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VSTL22

# Qualitative Analysis of Challenge- Based Learning on Programming Course

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**Abstract**

In this study, Challenge-Based learning (CBL) is implemented in Visual programming course as a mean to improve students' programming skills. CBL provides authentic learning experience in collaborative group learning to enhance students' deeper conceptual learning. The researchers created Oh My Code Programing Competition (OMC) to employ the CBL in the Visual Programming Course. OMC is a CBL technology apps invention project which emphasises the innovation of the creation of an information system by instilling a business perspective in it. There are 3 main phases of CBL in OMC which consist of: 1) Challenge instructions by lecturer, 2) Preparations towards challenge 3) Delivery of complete challenge. A total of 50 students were involved in this study. The students' reflection was gathered through an open-ended online survey. The analysis was done using Co-occurrences Analysis. In summary, the OMC in Visual programming course demonstrates that the foundation in technology can make the students successfully take on the challenge to develop a system prototype with both technical and societal component. Through this CBL, students indirectly developed various professional skills such as teamwork communication and problem solving.

## Introduction

Methods of learning are vital aspects to facilitate students in the learning process. Some people feel that studying in a group is more beneficial than individual learning while others probably have a different opinion. Challenge- Based Learning (CBL) is a mechanism for enhancing learning and organisational actions through meaningful learning experiences, enabling learners to use the technologies they use in their daily lives. CBL integrates independent learning and collaborative group learning in enhancing students' deeper conceptual learning. Educational research has shown that active learning focused on students can deliver a far deeper conceptual learning than conventional lectures [1]. With the assistance of a group-based learning environment, such as problem-based learning (PBL)[2], project-based learning (PBL)[3], or challenge-based learning (CBL), different technical functioning skills can be built by students such as problem-solving, written and oral communication, independent learning, teamwork and many more.

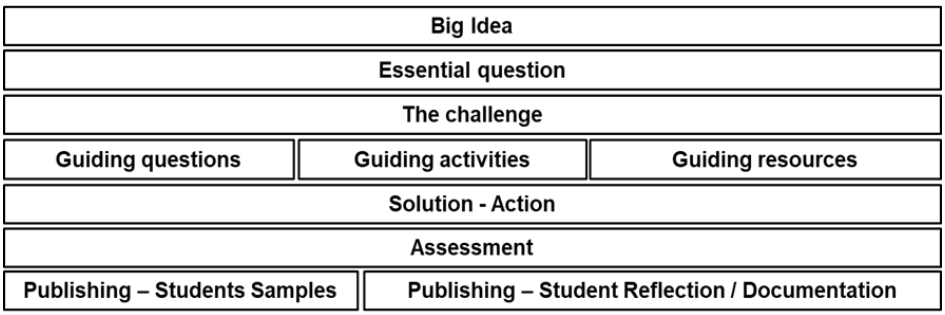
## Problem Statement

The Visual Programming (VP) course introduces the fundamental concepts related to the principles of programming language, the programming structure and programming concept using object-oriented driven. As Programming Language course is considered as something new to young adult learners that have just left secondary school, the researchers adopted the Challenge-Based Learning. It is expected that students will not only be motivated to study and learn new knowledge outside the class, they will also be motivated to engage appropriately in group work as they are in a team. The focus of this study to investigate the experiences of students after they undergo challenge-based learning strategies in learning the programming course.

## Literature Review

In CBL, there exists primary objectives shift from knowing concepts to using concepts. In regard to the educator, there is a need of a shift for them from an expert to a moderator [1]. The teacher will need to design and manage the overall instructional process instead of just dispensing information and concepts. As for students, they will need to shift from passive learners with limited responsibility for their learning to active learners with more significant responsibility for their learning. Fig 1 shows the activities in Challenge-Based Learning Framework [5].

**Fig 1:** Challenge-Based Learning Framework




**Challenge Based Learning in Visual Programming course**

The researches created Oh My Code Programing Competition (OMC) to employ the CBL in the Visual Programming Course. OMC is a CBL technology apps invention project which emphasises the innovation of the creation of an information system by instilling a business perspective in it. In this project, there are 3 main phases (Fig. 2): Finally, Students were required to answer an online survey to reflect their experience throughout the learning process

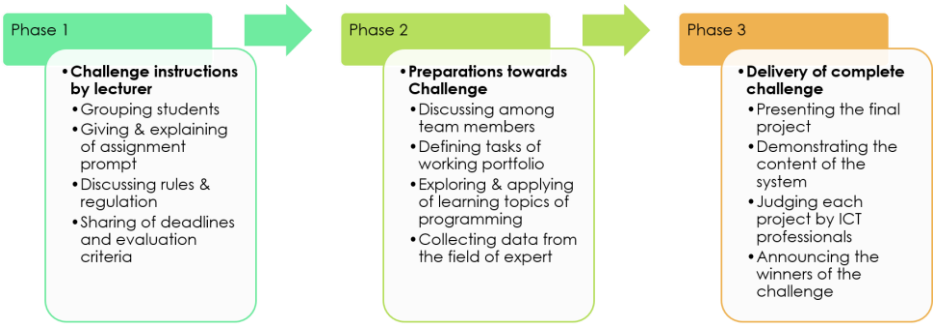



Fig.2: Details of Activities

## Result and Discussion

A total of 50 students that were grouped into 12 teams were involved in this study. A qualitative data collection method using an open-ended online survey was used to collect the students' reflection. The analysis of the result is as follows:

a. *Students' experience during CBL*

The wordle in Fig 3 was generated based on students' answers when they were asked to describe their learning experience on programming after underwent Oh My code Programming competition.

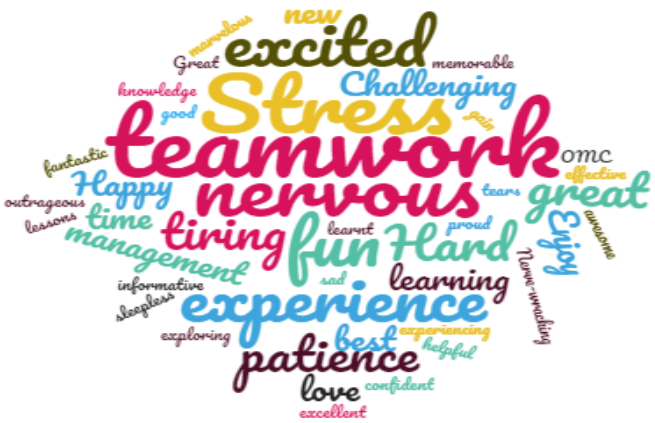



**Fig 3**: Most commonly used word in describing students' experience when learning programming using challenge-based learning

Based on the wordle, the most frequently mentioned words are teamwork, nervousness, experience, patience and stress.

*b. Effectiveness of CBL in understanding programming*

Students were also asked about the effectiveness of OMC in assisting them to understand programming. Most of the students agreed that their understanding of programming knowledge increased after underwent Oh My code programming competition which is a learning strategy using challenge-based learning. In order to develop a good business system, the prototype required them to explore more knowledge on the net. Co-occurrences Analysis was used to cluster the students' answers as in table 1.

**Table 1**
Emergent themes derived from students' reflection on the effectiveness of CBL on programming

| **Emergent Theme** | **Exemplar quotes** |
|---|---|
| Improve understanding of programming | "*During class, we get to learn basic knowledge about VB or generally VS but by doing OMC, i got to discover more than what we have been taught. I love programming so OMC really gave me an experience in coding and designing* " |
| System development | "*OMC has influenced my understanding on programming by make use of database to built an good and efficient software*" |
| Knowledge exploration | "it makes me widen my knowledge on programming by doing research on youtube and other sources" |

*c. Challenges that you came across while doing OMC project. Co-occurrences Analysis was used to cluster the answers.*

Students described their challenges towards the success of the group work particularly in developing functions for the main program. Here, students emphasised the importance of teamwork, brainstorming and even finding the best ways to develop the program. They wrote reflections of positive changes they encountered while completing the group tasks. These

adaptive characteristics were stimulated by the difficulty of solving the problem using programming and this process as linked directly to improve their communication as well as technical skills. For example, most students talked about increased motivation, knowledge, creativity and commitment in the findings. Co-occurrences Analysis used to cluster the students' answers as in table 2.

**Table 2**
Emergent themes derived from students' reflection on the effectiveness of CBL on programming

| Emergent Theme | Exemplar quotes |
|---|---|
| Teamwork | *"Personally, i think one of the major challenges that i came across while doing OMC is teamwork. Since this year's OMC is held virtually, some people may neglect their work and not do as their tasked to do since we cant see each other physically."* |
| Communication | *"group members are far apart and hard to make discussion"* |
| Technical problem | *"sharing the vb project among teammates. When loading the project there always a problem even until deadlines."* |

*d. Skills generated throughout the process of developing and presenting the OMC project*


**Fig.2**: Most commonly used words in describing generated skills after undergoing Challenge-based Learning

Based on the wordle, the most frequent words describing the skills they have gained and developed after learning programming through challenge-based learning are coding, presentation, problem-solving and management. From the students' reflections, it is shown that the students agreed that by adopting a challenge-based learning strategy in a programming course, it had successfully made them having a better understanding of the programming language, enrich students experience in the system development environment, develop better presentation skills, increase teamwork spirit as well as enhance their practical skills.

## Conclusion

In a programming course, there are few skills required to prepare students for their future careers. Challenge-based learning strategy has allowed students to understand and tackle problem solving, knowledge exploration, teamwork and presentation skills. Through these processes, students will understand the programming knowledge that they have learned in the class. However, there are some

aspect that should be improved. A proper guideline in conducting this strategy is needed to ensure the smoothness of the process.

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VSTL23

# Analysing Student's Experience of Using A Digital Notebook in Learning Physics

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**Abstract**

Recent technological developments have led to the prominence of online education as an alternative to traditional classroom teaching. Due to the current health crisis happening around the world, online teaching and learning have been implemented at a national scale among students and academic staff, at all educational levels. This research paper aims to demonstrate the student's learning experience by using digital notebook, particularly Microsoft One note in monitoring and managing their online learning in Physics subject. As some students encountered difficulties to accommodate the online teaching and new learning environment especially in understanding Physics course, employing a digital notebook is essential to ensure all students acquire systematic information and able to monitor their performance. A total of 30 Foundation students were required to use this digital notebook for 12 weeks (one semester) as an interactive platform to share, collaborate, and discuss the coursework efficiently and engagingly. Students' reflections through an online survey was conducted and analyzed by using Co-occurrences Analysis. The result of the analysis revealed that the students appreciate the usage of this platform as it is convenient, effective, informative, and systematic. Hence, this digital notebook appears as an effective tool to encounter the challenges in terms of students' collaboration, flexibility, accessibility, and interactivity.

## Introduction

Currently, online teaching has become an attractive feature for knowledge delivery, particularly in higher education. Studies revealed that students have positive perceptions and better engagement towards online teaching and learning courses as compared to conventional learning (Popovici & Mironov, 2015). This is due to the new technologies such as computer graphics, virtual reality and virtual worlds, they continue to play an important role in the development and expansion of online education. Over the years, numerous efforts have been done to incorporate internet technologies into the teaching and learning process in higher education (Mansor & Ismail, 2012). With the current health crisis happening around the world that causes a huge impact on global education, the implementation of fully online education is inevitable, and it provides an exceptional opportunity for researchers to assess students' responses towards this transition.

Even though fundamental knowledge can be easily transmitted via online lectures and webinars, engaging students, and keeping track of their performance on the other side could be more challenging. Despite students' acceptance and acknowledge of the benefits of online learning, the idea of self-learning could be overwhelmed by some students, particularly isolated students (Gillett-Swan, 2017). Some of them are struggling to catch up with their studies and some face difficulties in giving full participation during online classes due to the poor internet connection (Liang & Chen, 2012). Furthermore, when it comes to subject involving theories and calculation such as Physics where it requires constant feedback through problems solving questions from students, the learning process could be daunting. Fortunately, the accessibility and ease of access to recorded online teaching videos make it easier for students to do their revision at their own pace.

Additionally, the usage of digital notebook such as Microsoft One note application appears as an effective online tool to monitor students' progress, hence, as a medium for them to manage their study. A digital notebook is a convenient and practical online tool as it allows students and the instructors to share, collaborate, discuss and interact with one another efficiently in a more engaging way. In terms of accessibility, One note is easy to be accessed using Microsoft account or institution's account. Particularly, instructors can share the lecture summary, problem solving questions, coursework marks, files, online videos and images instantly in a more interactive way. Apart from that, students can also

write and share notes, view and submit homework and do revision as all the information can be easily accessed within one platform. This is certainly convenient for the instructor as it removes the hassle in reviewing and checking the work submission from students on different applications.

The objective of this paper is to analyze and demonstrate students' learning experience using a digital notebook particularly Microsoft One note in monitoring and managing their online learning in Physics subject.

## Methodology

The sample of this research involved 30 Foundation students in Engineering and Science who registered for Physics II. The research tool used in this study was Microsoft One note as a platform for students to revise, share, solve, write, and collaborate their works in Physics subject. This platform was utilized for one semester which is equivalent to 12 weeks. An online survey on their experience in using this platform was given at the end of the 12$^{th}$ week. The questionnaire consisted of four questions which pointed out their experience, benefits, challenges and future improvement in using this platform for learning Physics in an organized and engaging way.

## Results and Discussion

a. Experience

The first question is about their experience in using Microsoft One Note as their workbook. The students were required to describe their learning experience in three words. Figure 1 shows the most common words given by the students where most of them agreed that this platform is easy to be used, organized and convenient for them to access to the materials. This is true as students were able to download the application in their smartphone and get easily accessed to it.


**Figure 1**: Most frequent words describing students' experience in using Microsoft One Note as a digital notebook.

b. Benefits

The second question focuses on the usefulness of this platform for students in learning Physics. Table 1 depicts some of the comments from the students. Majority of them concluded that this platform has greatly assisted them in understanding the concept clearly. The sections in the digital notebook such as lecture summary, questions together with the answers, links for videos, simulations and additional resources for each chapter allow them to easily find and view the information for revision.

**Table 1:** Emergence theme based on the students' experience on the effectiveness and benefits of a digital notebook.

| Emergence Theme | Comments from students |
|---|---|
| Improve understanding of Physics concepts clearly | *"In every way I think because doing exercises in one note help me to have double understanding of the concept and how to use the formula as well as assisting me in doing the tutorial. I always do the one note exercise first before doing the tutorial as my lab sessions come first. By having the exercise in one note as well as the summary, it helps me a lot in rewind back all the content of the chapter which make it thousand times easier to be accessed."* |
| Lecture summary and Questions & Answer sections | *"The "shared section" with lecturer really does help. We can review the answers for questions immediately & lecture summary helped in connecting the main idea of the topic with its branches."*<br><br>*It is an awesome platform for us to record our works so that we can refer to the works that we uploaded easily without flipping here and there.* |

c. Challenges

The third question highlights the challenges encountered by the students while using this platform. The challenges are based on different aspects that were pointed out by the students which are shown in Figure 2. Some of them found it difficult to access the application due to their poor internet connection. For the platform itself, there is a possibility of information to be erased by other students. This is applicable only for the section where students are able to view and edit the content. Some students proclaimed that they always forget to check the updates as there is no notification shown on their computer and smartphones' screen or email as a reminder. However, the students who check the platform frequently noticed that the section tab turned to a bold letter whenever there was an update. Other than that, few students felt that it was quite troublesome to scan and upload the answers and did the editing on a computer without using a tablet.

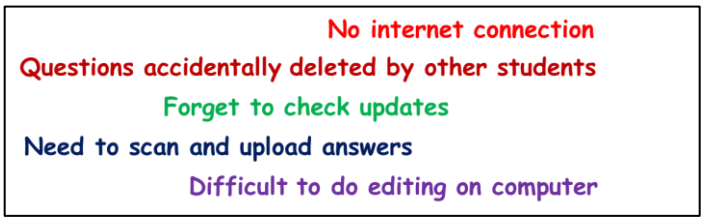


**Figure 2:** Issues pinpointed by students.

d. Future improvement

Lastly, this question emphasizes on the future improvements and recommendations. The result is displayed in Table 2 where all students acknowledged the effectiveness of digital notebook and anticipated to use it more often in future. In terms of contents and materials, the students were expecting to have more questions, extra notes, and resources being provided in the platform and also as a medium to share important news for the assessments.

**Table 2:** Emergence theme based on students' future recommendations.

| Emergence theme | Comments from students |
|---|---|
| Digital notebook as students' workbook | Keep using it |
| | *"Yup~ one note it's good to be used especially when online learning completely like this sem."* |
| | *"It is usable for teaching and studying and hope to see it used more often in the future."* |
| | *"it is a good app to help the students interact with lecture instead of whatsapp."* |
| Content | *"More examples & applications of the topic learnt, to facilitate in understanding the topic."* |
| | *"Using one note as a medium to share news or important things like quiz or test dates."* |
| | *"Sharing of links to additional videos regarding topics discussed."* |

## Conclusion

Online learning in university has become more intense due to the current health issues. The vast changes in terms of technological applications can be seen around the world to cater and educate students with different backgrounds, ages and needs. The existence of various platforms for both instructors and students to communicate has greatly facilitate the online process even though it can be quite intense sometimes. This paper is highlighting the experience of foundation students in UTP on the usage of Microsoft One note as a digital notebook to learn Physic subject. Overall, the students felt that this platform has enhanced their understanding of the concepts through simple yet attractive visualization of the lecture materials. Moreover, this platform is easy and convenient to be used as they can get all the information about their Physics course within a single platform.

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VSTL24

# Language Learning with Copacabana

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**Abstract**

Songs and music in the classroom are known to be attractive and act as a valuable teaching tools in language learning. They can be fully utilized to help students improve on various skills of the language. Thus, an action research in the classroom was developed to allow students to practice on the various language skills through a song. The purpose of this study was to develop activities in the classroom that integrate the four major language skills through the use of a song. Using the song entitled *Copacabana* by Barry Manilow, this study explored some possible ways in enhancing language learning in all the four major language skills basically grammar, reading, listening and speaking. Through a survey that was carried out, this approach received positive feedbacks from the students. It was observed that students were more responsive and attentive in class when using this approach. Thus, integrating songs into language learning serves not only as an effective teaching tool, but it provides a positive learning experience for students.

Keywords: songs, language skills, tertiary level

## Introduction

As we are now venturing into the different educational approaches in this technological era, songs have remained to be a valuable tool in language teaching and learning. Many researchers agree that using songs in language classroom can help to motivate learners and make learning environment become more interesting. Songs have been a valuable tool in language learning at different levels of students. However, songs have normally been used in the classroom to teach a certain language skill and few studies have been carried out to examine the effectiveness of a lesson in which one song is utilized and integrated into the learning of all the language skills in a classroom. Therefore, this study aims at developing activities that integrate the four major language skills through the use of a song in the classroom at the tertiary level.

## Background of Study

This study is an action research in which activities were formulated in teaching English by using songs to adult learners at the tertiary level. The study was initiated to facilitate students' learning in English language course which is a prerequisite for the students before they proceed to the following semesters. In this higher institution, students are required to take English course in the first three semesters of their studies. This study was conducted with the first semester students as they have to undergo listening, reading, writing and speaking skills in the course. From the researcher's observation, many students found it challenging to overcome their lack of proficiency in use of language and this has affected their level of motivation in learning. Therefore, songs were brought in as a tool to assist students in language learning and to help increase their motivation in the classroom. Language activities were created using songs and the exercises prepared helped to increase students' communicative and creative skills, thus assisting and improving students' motivation and performance in language learning.

## Literature Review

Research has shown that using songs in a classroom brings many benefits to the students. First of all, songs serve as an effective tool in supporting students' understanding in learning a language, thus it also helps them in improving their proficiency in the language (Ludke, 2016). In a study by Ainul Azmin Md Zamin & Nor Azrul Hardy Adzmi & Maslawati Mohamad (2020), students have shown improvement in their vocabulary skills through the use of songs in the classroom as new words were found in the song lyrics. Using songs in the classroom can also bring in a more relaxing setting in learning English.

Dolean (2015) has found that music and songs help to decrease student's anxiety level, thus provide the benefits of improving their wellbeing.

## Methodology

This study was carried out in a classroom of 25 students from semester 1 Diploma level from the Faculty of Applied Science at a higher institution. The lesson took two hours to complete, in which a song was utilized to create exercises in reading, listening, writing and speaking. The song that was used for this particular study entitled Copacabana by Barry Manilow which was released in 1978. It is an old song and it is purposely selected by the researcher as students were not familiar with the lyrics. The activities during the two-hour lesson were divided into two parts. In each part, the strategy of the lesson was explained, followed by a display of the task, students' output, language skills involved and the duration of the task. A summary of the activity is given in table 1.

**Table 1**
Module for Copacabana

| NO | TASK | OUTPUT | LANGUAGE SKILLS | DURATION |
|---|---|---|---|---|
| PART 1 – THE FIRST HALF OF THE SONG IS PLAYED | | | | |
| 1 | Listen to the song and try to understand what the song is about. Take note of the characters, and the place of the scene and the story. | Written notes | Listening | 5 minutes |
| 2 | Answer the following questions about the song.<br>1. How many characters are there in the song?<br>2. Name the main characters?<br>2. Where does the scene take place?<br>3. What is the profession of the characters? | Verbal responses | Speaking / Listening | 15 minutes |
| 3 | In groups, predict the ending of the story in the song.<br>Discuss and write the ending of the story.<br>OR<br>Discuss and role play your prediction of the story. | Written paragraph/short essay<br><br>Role play presentation | Reading and writing<br><br>Speaking | 40 minutes |
| PART 2 – THE SECOND PART OF THE SONG IS PLAYED | | | | |
| 4 | Play the song and sing together.<br>Listen to the actual ending of the song | Singing | Speaking | 5 minutes |
| 5 | Students fill in a gap-filling exercise on grammar and vocabulary based on the lyrics of the song. | Grammar and vocabulary exercises | Writing | 15 minutes |
| 6 | In groups, create a different style to singing the song (eg: rap) and present it. | Group presentation | Speaking | 40 minutes |

After the activities were carried out, a short and simple survey was given to all the 25 students involved to find out their perceptions of the lesson. There were two parts of the survey in which part A comprised of the demographic profile which was made up of 2 items while Part B consisted of 5 items of a five-

point Likert scale (1- strongly agree (SA), 2- agree (A), 3- not sure (NS), 5- disagree (D), and 5- strongly disagree (SD)). The data were analyzed by using descriptive analysis.

## Results

Using songs in language learning classroom such as Copacabana has brought in positive feedbacks from the students. The result of the survey is shown in Table 2.

**Table 2**
Students'perception on using a song in the classroom

| No | Question | SA | A | NS | D | SD |
|---|---|---|---|---|---|---|
| 1 | I like doing writing tasks by using a song in the classroom | 64% | 36% | 0% | 0% | 0% |
| 2 | I like doing listening by using a song in the classroom | 72% | 24% | 4% | 0% | 0% |
| 3 | I like doing reading comprehension exercises by using a song in the classroom. | 72% | 28% | 0% | 0% | 0% |
| 4 | I like practicing on my speaking by using a song in the classroom. | 80% | 20% | 0% | 0% | 0% |
| 5 | I like learning new words through songs | 76% | 34% | 0% | 0% | 0% |
| 6 | I like doing grammar exercises based on a song played in the classroom | 60% | 32% | 8% | 0% | 0% |
| 7 | I like learning English through songs | 92% | 8% | 0% | 0% | 0% |
| 8 | Using a song helps me to relax in learning English | 88% | 12% | 0% | 0% | 0% |
| 9 | I like the song Copacabana | 56% | 44% | 0% | 0% | 0% |

From the results, using songs in language classroom has brought in positive responses from the students. This study is in line with other studies which have shown that songs serve positively as a useful tool in language classroom as it assists students to increase their proficiency, interest and motivation in learning English (Ainul Azmin Md Zamin & Nor Azrul Hardy Adzmi & Maslawati Mohamad, 2020; Romero, 2017; Dolean, 2016; Ludke, 2016;). In addition, introducing songs from the past to the younger generation also provides a different outlook and new appreciation towards music.

## Conclusion

This study has provided input on how a song can be used in an English language classroom at the tertiary level to teach the four major language skills: reading, writing, speaking and listening. It is shown that songs work as a powerful tool in language learning and one song can be used in learning numerous language skills. Having songs as a teaching aid to learning English can help students to increase their proficiency and motivation levels. It provides a path to students in learning new words and gaining understanding in the language. Therefore, it is recommended that more songs from the past are selected as teaching tools in language learning. Further research can be carried out on the effectiveness of using songs in language learning particularly on the cognitive and affective levels of students at the tertiary level.

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VSTL25

# Language Learning Strategies of ESL Students in Online Distance Learning Environment

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**Abstract**

This study reports on the use of Language Learning Strategies by L2 learners in online distance learning environment. When learning, learners will either consciously or unconsciously use language learning strategy (LLS) in order to process new information in their language lesson. In 1990, Oxford comes out with Strategies Inventory of Language Learning (SILL). This inventory has six broad categories: Cognitive, Memory, Affective, Meta-cognitive, Compensatory, and Social strategies. Various researches then have been conducted with their focus on LLS in L2 learning. LLS has been found to help learners to achieve better language achievement. While technology keeps on moving forward, it also lays its effects on teaching and learning process. The advent of technology gives L2 learners the opportunity to learn the language in technology-mediated environment. Thus, this study examined the preference of L2 learners in LLS when learning English in online distance environment. 78 respondents were involved in this study and questionnaires were given as the research instrument. Result shows that in term of LLS preference, learners used more Compensation strategy when learning English online. There is also a significant difference between male and female learners in term of LLS use. Female used more LLS as compared to male. Female learners preferred to use Metacognitive strategy, while male used Compensation strategy the most. The findings of this study have pedagogical impacts on English teaching and learning process.

Keywords: Language learning strategies, ESL, Online Distance Learning, L2 learners

## Introduction

Learning a language differs from one person to another. According to Rubin (1975), good language learners learn differently as compared to bad language learners. From there on, researchers have tried to explore more on specific ways of learning employed by other language learners. When learning, learners will either consciously or unconsciously use the language learning strategy (LLS) in order to process the new information in their language lesson. In 1990, Oxford comes out with Strategies Inventory of Language Learning (SILL). This inventory has six broad categories; Cognitive, Memory, Affective, Meta-cognitive, Compensatory, and Social strategies. According to Oxford (1990), language learning strategies are “the specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations”. In a previous finding by Holec (1981), it is found that applying the right learning strategies will escalate autonomous learning in ESL. There are many previous researches that support the notion of positive and meaningful relationship between language learning strategies and language proficiency (Muhammad Irfan & Nur Alyani, 2015; Al-Maktary, 2018; Ahmad, Jelas & Ali, 2010). Rapid development of technology is changing the landscape of language teaching and learning. Teaching and learning can now be done online without the need of seeing each other. The convenience of online learning has also been one of great catalysts for distance learning. Distance learning, online learning, web-based learning, e-learning, cyberlearning, and computer-based learning are terms that have little unanimity in term of definitions (Moore et al., 2011). Online learning environment is then used as an umbrella term for related concepts of learning that take place on the Internet or involved the use of Internet (Moore et al., 2011). LLS is still considered as relevant yet needed for effective language learning even in this digital era and strategies pertinent to numerous digital learning challenges do exist (Oxford & Schramm, 2007).

## Research Objectives

1. To identify language learning strategies of L2 learners in online distance learning environment.
2. To identify the preference of language learning strategies of L2 learners according to gender.

3. To identify the preference of language learning strategies of L2 learners according to faculties.

## Methodology

Respondents for this study are university students who are currently taking English subject in their course of study. There are 78 respondents for this study. A convenience sampling was adopted in selecting the respondents. All respondents took their English subject through online distance learning environment. Teaching and learning process took place in a 100% online environment. This study employed quantitative method where questionnaires are used to gather information from the respondents. Questionnaires were adapted from Oxford (1990). SPSS was used to analyse the gathered data from the respondents.

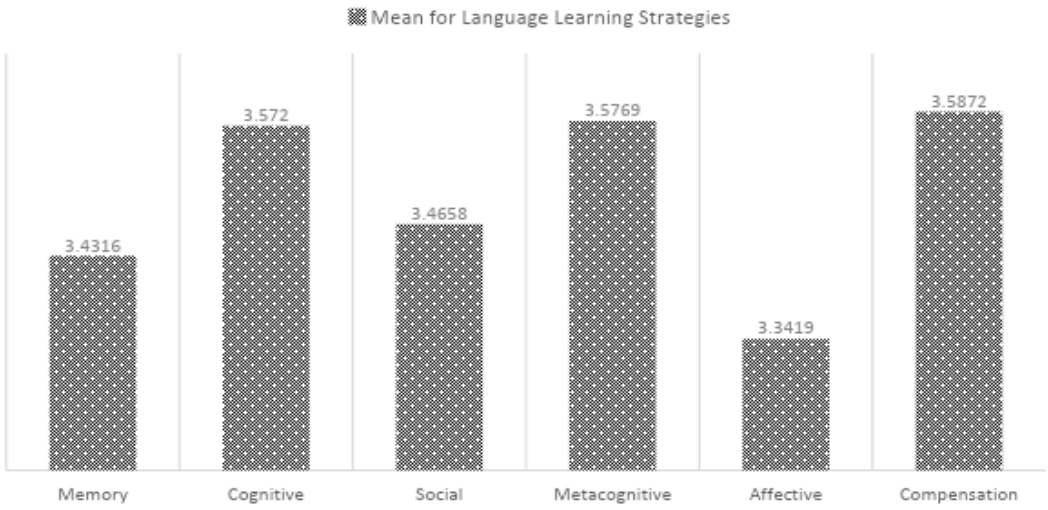
## Findings

This study focused on language learning strategies used by L2 learners in online distance learning environment.

**Table 1:** Mean for Language Learning Strategies

| LLS | Mean |
|---|---|
| Memory | 3.4316 |
| Cognitive | 3.5720 |
| Social | 3.4658 |
| Metacognitive | 3.5769 |
| Affective | 3.3419 |
| Compensation | 3.5872 |

**Chart 1:** Mean for Language Learning Strategies



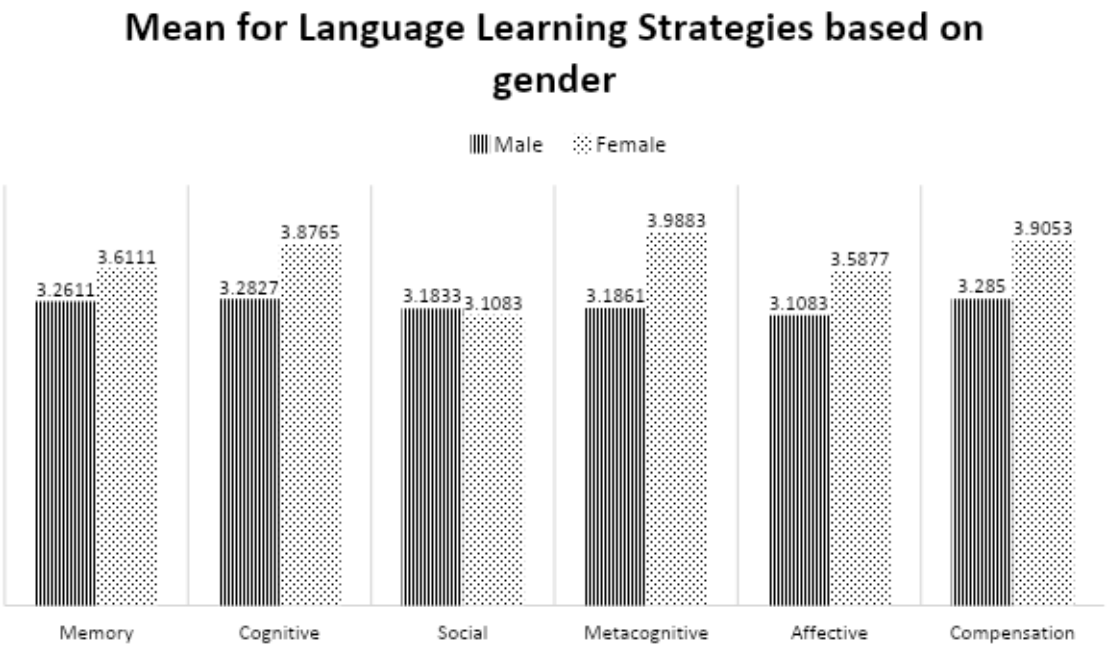

Data gathered from the respondents were analysed to figure out the most preferred LLS by using mean and standard deviation. Learners' most frequently used LLS is Compensation strategy with its mean value is the highest (3.5872). Least used LLS is Affective strategy with mean value of 3.341. However,

from Table 1, the difference between mean value of each strategy is not very distinct from each other. This indicates that learners also employ other LLS in their L2 learning and they were equally used.

**Table 2**: Mean for Language Learning Strategies based on gender

| LLS | Male | Female |
|---|---|---|
| Memory | 3.2611 | 3.6111 |
| Cognitive | 3.2827 | 3.8765 |
| Social | 3.1833 | 3.1083 |
| Metacognitive | 3.1861 | 3.9883 |
| Affective | 3.1083 | 3.5877 |
| Compensation | 3.2850 | 3.9053 |

**Chart 2**: Mean for Language Learning Strategies based on gender

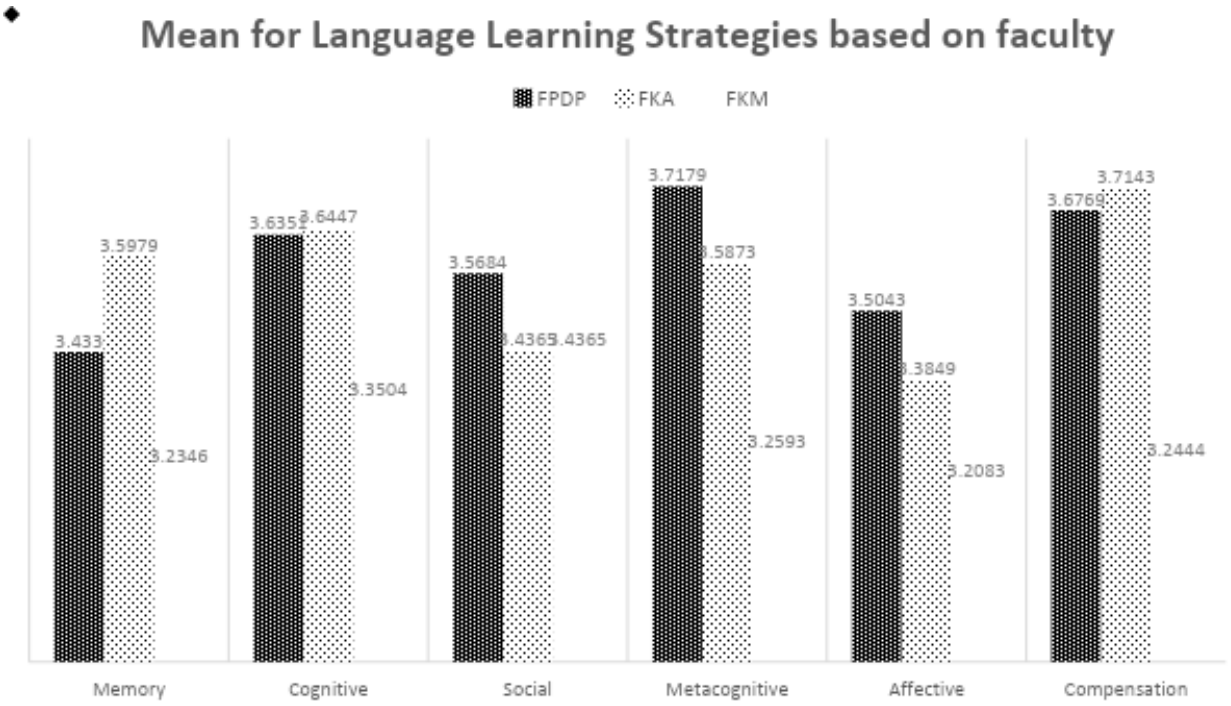



To further explore the preference of language learning strategies used by the respondent, data was analysed according to gender. Compensation is the most preferred learning strategy for male students with a mean value of 3.2850, while metacognitive is the most preferred learning strategy by female students with the mean value of 3.9883. However, the least preferred LLS for male is affective strategy with mean value of 3.1083. Female learners seemed to have least preference in social strategy with mean value of 3.1083.

**Table 3**: Mean for Language Learning Strategies based on faculty

| LLS | FPDP | FKA | FKM |
|---|---|---|---|
| Memory | 3.4330 | 3.5979 | 3.2346 |
| Cognitive | 3.6351 | 3.6447 | 3.3504 |
| Social | 3.5684 | 3.4365 | 3.4365 |
| Metacognitive | 3.7179 | 3.5873 | 3.2593 |
| Affective | 3.5043 | 3.3849 | 3.2083 |
| Compensation | 3.6769 | 3.7143 | 3.2444 |

**Chart 3**: Mean for Language Learning Strategies based on faculty




Data for this research was collected from 3 faculties; Fakulti Pengurusan dan Perniagaan (FPDP), Fakulti Kejuruteraan Mekanikal (FKM), and Fakulti Kejuruteraan Awam (FKA). Data was analysed based on their respective faculty and it shows that FPDP students had the highest tendency to use metacognitive strategy with the mean value of 3.7179, while FKA students chose compensation strategy as the most preferred strategy with the mean value of 3.7143. FKM students showed more inclination towards cognitive strategy with mean value of 3.3504. The least preferred strategy for FPDP is memory with a mean value of 3.4330. Affective strategy appeared to be the least favourite for FKA and FKM students with a mean value of 3.3849 and 3.2083 respectively.

## Conclusion

This study has managed to highlight the learners preferential in their LLS when learning English in online distance learning environment. From the analysed data, finding shows that respondents of this study had predilection of compensation strategy when learning English in online setting. Compensation strategy is a strategy adopted by L2 learners by compensating their limited knowledge of the language with something else. Compensation strategy is mainly a skill of guessing meanings from the context in reading and listening and using synonyms and gestures to convey meaning when the precise expression is not known (Oxford, 1990). According to this study, L2 learners preferred to make guesses when they were in a bind regarding the language. This research may benefit educators and learners in

designing lessons that will match the learners learning strategies. This research may be replicable and further elaborated in other different contexts.

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VSTL26

# Designing Online and Distance Learning: AID Pedagogical Approach for Creative and Critical Thinking Course

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**Abstract**

The notion of delivering a module for a diploma program through an online and distance learning mode was to overcome the issue of accessibility to teaching and learning facilities. However, a more challenging problem in the design of such a class is to assure the course can successfully achieve the assigned course objectives for quality education. This project attempted to find the most suitable structure of a creative and critical thinking course, for 14 weeks of learning. It proposed the integration of the Active, Inquiry and Deep (AID) learning pedagogical approaches to shape the desired thinking skills among students. The project was conducted using 15 groups of students with a total of 308 working adults aged between 20 to 40 years old from 2011 till 2017 in UiTM Shah Alam campus. The online and distance learning mode is determined by 10 hours of face to face and 30 hours of online learning. In the beginning, class discussions were centred on developing communication and information-seeking skills. As the students were ready to share and listen, the teaching was directed to identifying problems critically, before they were allowed to take on creativity in finding potential solutions to selected issues. Students translated their ideas into tangible and intangible outputs based on scientific techniques applied in the process of thinking. Various activities were adopted to develop a set of skills for learning outcomes. Programmatic assessment tools were carefully selected to evaluate the progress. This project was successful as the students were able to present their innovative products at the end of the course; a small-scale innovation project.

Keywords: Active Learning, Inquiry Learning, Deep Learning, Online Learning.

## Introduction

The online education became increasingly accessible and allowed new pedagogical models to emerge. A paradigm shift in attitudes towards online education has been prevalent since the 1990s (Bates, 2005). Eventually, distance education as a multidisciplinary field has reacted to the changes in diffusion of ICT technology; it has and is still evolving and orienting itself to fulfill demand (Harasim, 2000). The critical difference between online learning and distance learning involved location, interaction and intention (Pahwa et al., 2005). While online learning can be conducted in a classroom with an instructor working through digital lessons and assessments, distance learning allows students to work online at home. Teacher assigns work and checks digitally.

This research project was conducted for the Creative, and Critical Thinking Course addressing the students of Diploma in Business Administration program offered by Institute of Continuing Education and Professional Studies (ICEPS, UiTM). ICEPS offers a distance learning program through iCLASS Learning Management System. The motivation in initiating the project was due to the constraints that the lecturer and students faced. The problems include access to teaching and learning facilities, the proximity of class members to the campus for possible meetings and difficulty of communication among students and with the lecturer. Majority of the students were working adults resided outside of Selangor, such as Johor, Kelantan, Penang and Perak. They need to travel and stay over the weekend near Shah Alam campus for attending the five-time two hours classes over alternate Sundays. The allocation of face to face class meeting is only 10 hours out of the total hours of 40 hours of student learning time for three credits. Thus, contributing to a minimal opportunity to active interaction among members. This project proposed an improved class structure of delivering a module for a diploma program through a combination of online and distance learning mode based on carefully designed pedagogical approaches. The purpose of the research project is two-fold:

- To overcome the problems in realizing the objective of course through online and distance learning mode;
- To design a systematic structure for the delivery of the course for effective teaching and learning.

The following section presents some relevant literature in pedagogical approaches. The third section discusses the methodology and subsequently presents the result of the action research. The final section ends with some discussions, limitations and recommendations for future research.

## Literature Review

Online education as a way of paradigmatic shift from traditional education due to the diffusion of innovation, in particular of the Web technologies. Online education has increasingly become accessible, open, flexible; allowed new pedagogical models to emerge and reasoned the revolution in the digital knowledge age that enabled greater and faster human communication. At the same pace, education is not a standalone activity within the classroom. Collaboration is the central of education that led to fundamentally new forms of economic activity that produced the knowledge economy and required basic changes in education (Harasim, 2000). Our new understanding of the very nature of learning has affected the definition, design, and delivery of education. Paradigm shift in education has resulted in new modes of educational delivery, new learning domains, new principles of learning, new learning processes and outcomes and new educational roles and entities (Bates, 2005).

A constructivist approach, emphasizing the principles of adult learning and placing emphasis on the student is advocated. In regard to the pedagogical approaches, there are three identified learning approaches that are relevant to creating critical and creative thinking. First, active learning has attracted considerable attention in higher education in response to concerns about how and what students are learning. There are many different forms of active learning, yet most of them are classroom based. Studies show that there is an alternative to active learning in the classroom through active learning outside of the classroom in the form of student projects (Heriot et al., 2008).

Second, while traditional learning is supposed to increase learners' outcomes and keeps them active during the learning process, it has been widely asserted that inquiry-based learning increases learners' knowledge and skills (Nedungadi et al., 2015). Inquiry-based learning is a pedagogy that supports student-centered learning and encourages them to think scientifically. It develops evidence based reasoning and creative problem-solving skills that result in knowledge creation and higher recall (Khalaf, 2018).

Third, in-depth learning instruction provides students with the advanced skills necessary to deal with a world in which good jobs are becoming more cognitively demanding. It prepares them to be curious, continuous, independent learners as well as thoughtful, productive, active members. Deep learning is less focused on teaching many topics and providing a breadth of information, and more focused on promoting meaning and understanding, on making connections and building relationships between relevant information and ideas, and on fostering advanced analysis, interpretation, and application. There are many opportunities for students to process information and images as they develop and use literacy and thinking skills. Students are less passive and more engaged in the learning process. Review of relevant literature found that formative is a key to deep learning (Rushton, 2009). In line with the paradigm shift, the assessment culture has emphasized the importance of formative assessment.

Therefore, the study decided to adopt the three approaches to address the issues of effectiveness in online and distance learning.

## Methodology

This is a project-based action research. As action research is essentially a collaborative, democratic, and participatory approach to systematic inquiry into a problem of practice within a local context. Action research has become prevalent in many fields and disciplines, including education. This prevalence can be understood in the way action research lends itself to action-based inquiry, participation, collaboration, and the development of solutions to problems of everyday practice in local contexts (Towns et al, 2000).

It is an experimental type of project-based action research to find the most appropriate method of teaching creative and critical thinking skills. Multiple attempts were made to restructure the class delivery between 2011 to 2017. From 2011 till 2015, the location of classes allowed the tangible presentation of outputs and ample space for activities. However, between 2016 to 2017, the site was shifted to new learning facilities that provided limited sharing space for displaying the outcome of the course. Therefore, an online platform, such as WhatsApp and iCLASS LMS were highly dependent between 2016 to 2017.

The project was conducted using 15 groups for a total of 308 working adults aged between 20 to 40 years old from 2011 till 2017 in UiTM Shah Alam campus. The diploma classes were conducted during the weekend alternately; 5 meetings-2 hours on Sunday afternoon with a total of 10 hours face to face meeting and 30 hours online classroom using iClass LMS platform of 3 credit unit. Table 1 lists the class group and number of students participated in the project.

Table 1: List of students involved in the research project as participants

| Semester | Number of Students |
|---|---|
| 20172 | 18 |
| 20164 | 13 |
| 20162 | 18 |
| 20154 | 14 |
| 20152 | 27 |
| 20152 | 17 |
| 20144 | 12 |
| 20144 | 34 |
| 20142 | 27 |
| 20134 | 23 |
| 20132 | 24 |
| 20124 | 5 |
| 20122 | 26 |
| 20114 | 23 |
| 20112 | 27 |
| Total | 308 |

Source: LMS Record https://iclass.uitm.edu.my/Group/default.php?ttype=course&cuserid=93926773

## The Research Process

Action research generally follows a systematic and cyclical pattern of reflection, planning, action, observation, and data collection, evaluation that then repeats in an iterative and ongoing manner. The goal of action research is to inform local practice, engage in professional learning, build a community practice, solve a problem or understand a process or phenomenon within a particular context, or empower participants to generate self-knowledge (Dickens & Watkins, 1999; Elg et al., 2020). For this process, the project set 3 phases on learning approaches. The project integrated an innovative method on teaching and learning through 3 phases which has the Active, Inquiry and Deep (AID) Pedagogical Approach for Critical and Creative Thinking course delivered using the online and distance learning (ODL) mode. Table 2 summarizes the design of the class structure. The following section describes the process:

*a.* ***Process***

**Steps 1 Active Learning**

Active learning is any learning activity in which the student participates or interacts with the learning process, as opposed to passively taking in the information. In particular, for this project, active learning refers to learning activities conducted during the face-to-face 10 hours classroom setting. The class started with an understanding of the student profile, state of origin, position at workplace, and challenges in completing the course. Students were grouped accordingly by considering the ease of networking. Several active learning activities were discussed and planned with the students upon consensus.

For every 2 hours class, a traditional lecture was conducted according to the course contents for an hour. Then, active learning activities such as guided group discussion, brainstorming, role play, and business issue review and guided information-seeking events using mobile technology (YouTube, Google Search). At the end of the class, class members planned for the following active learning activities for the next class meeting.

Apart from the face-to-face class setting, the online class platform iClass LMS and Whatsapp were utilized and updated regularly to provide smooth communication among members on the progress of their preparation for the active learning activities.

**Steps 2 Inquiry Learning**

Inquiry learning is directed by questions, problems or challenges that student work addresses using online classrooms. It is a teaching and learning method that prioritizes student questions, ideas and analyses.

In this project, the Structured Inquiry was adopted to fit the level of thinking — application of business and management concept. Students were given an open question and an investigation method. They must use the technique to craft an evidence-based conclusion.

For in-class active learning, students conducted market surveys on existing products such as bottled juice, sardine, cornflakes and others. Students had to run a market survey by selecting one type of product. They had to bring samples and collect feedback for comparative product analysis using a simple matrix of decision-making factors (multi-criteria decision-making techniques) – to understand, rate and rank products for improvements.

While inquiry learning in the online classroom took about 30 hours, students were also guided on questioning techniques for critical information gathering. Some of the works that were assigned were conducting online discussion on current business issues such as sustainable development, e-marketing, Fintech, Industrial Revolution 4.0, IoT, Society 5.0 others.

**Step 3 Deep Learning**

In this project, the in-depth learning process took place between physical classes. At the same time, the students were assigned to complete their small-scale innovation project outside the classroom, instead of sitting for the final examination. Some of the small-scale innovation projects conducted were Innovative Packaging, New Product Design, and Eco-friendly Product Development. The groups were guided at every step and needed to continuously develop their projects throughout the course by conducting a few inquiry learning activities beforehand. Some of the compulsory activities are brainstorming, market survey, analysis using techniques (factor rating method, product comparative analysis matrix), drawing and creative presentation of ideas, and writing a full report. Students were also guided on presentation skills for the project proposal.

Table 2: Summary of Systematic Structure Designed based on AID pedagogical

| **AID Pedagogical Approach** | **Application** | **Skills** | **Activities & Assignments** | **Learning Outcome** |
|---|---|---|---|---|
| **A**ctive Learning<br><br>Week 1-4 | *Learning* which engages students as active participants in their learning during face to face class /online with class members. | Communication Information Seeking using Webs, whatsapp. | Creative Presentation Using White Board, Notice Board, Poster, Video, Mind Map, PPT Slides<br><br>*Presentation Kit | CO2 & CO4 Comprehension Application |
| **I**nquiry Learning<br><br>Week 5-9 | *Learning* directed by questions, problems or challenges that students work to address. | Critical Thinking using video, observation at site, youtube channel. | Market Survey and Comparative Analysis of Product Design. | CO3 Application Analysis |

| | | | | |
|---|---|---|---|---|
| | | | *Factor Rating Method | |
| **D**eep Learning<br><br>Week 10-14 | *Learning* that allows a student to take what's learned in one situation and apply it to another. | Creative Thinking using video making, voice recording, infographic and prototype making | Small Scale Innovation Project<br><br>*Design Tools | CO1 Synthesis Evaluation |

Source: Author's own work

## Results

This classroom technique of blending the online and traditional face-to-face lecture with AID pedagogical approach has allowed both students and the lecturer to achieve all the objectives that had been set for this course.

Table 3 Summary of the Outcome

| No | Course Objectives | The Outcome of AID Pedagogical Approach |
|---|---|---|
| 1 | Demonstrate skills in creative and critical thinking | **Small Scale Innovation Project** helps to achieve all the required objectives through the development of ability and skills among students.<br>Discussion on issues (CO1), fact-finding and selecting relevant information (CO2), critical and analytical thinking using appropriate decision-making techniques (CO3), display new product design and convincing the appropriateness of ideas for problem solving/solutions (CO4).<br>Students are aware of plagiarism and infringement, the ethical issue related to innovation (CO4). |
| 2 | Use Information technology and communication skills to express critical thinking and innovation | |
| 3 | Justify ideas adequately in any study/work-related discussion/events | |
| 4 | Organize events that will show understanding of processes involved in ethical innovation | |

Source: Adapted from course information of the Creative and Critical Thinking

### *Benefits of the AID Pedagogical Approach*

There are two benefits of AID pedagogical approach on innovative teaching and learning process.

First, it was proven that the support of online classroom technology, iClass LMS and Whatsapp were useful in the module. With the help of innovative education technology, the online and distance learning program was just as effective as traditional learning in achieving the objectives of creating critical and creative thinking. Online learning also allowed students to receive continuous guidance and supervision throughout their learning stages. It enabled students to learn at their pace systematically. The results of the project were recorded in the LMS IClass system.

Second, the AID pedagogical approach had significantly contributed to the teaching and learning process for the creative and critical thinking course. The AID pedagogical approach contributed to a new way of teaching for business students. The student-centred learning approach was a feasible way of learning for working adults. For a diploma program, a highly guided teaching approach is needed to help students acquire knowledge and enhancing skills for long life learning. At the same time, students will be able to pursue their studies from simple to complex tasks, and from individual competency to group networking. Records of students' work is kept in the LMS IClass system and confidential.

## Conclusion, Limitations and Recommendation for Future Studies

The AID pedagogical approach needs to be carefully designed, scheduled and planned many months ahead of the class, to assure the course objectives are achievable and doable. Clear instructions, guidance, supervision and appropriate duration of the time has to be given to students. The AID pedagogical approach was purposely arranged in sequence; shift from simple active learning activities to a more complex inquiry learning and deep learning at the end of the course. The study has been proven the effectiveness of the pedagogies in addressing the limitation of resources even in an online

and distance learning setting and thus extend our understanding on practices as discussed by related studies in pedagogical approaches (Heriot et al., 2008; Nedungadi et al., 2015; Khalaf, 2018; Rushton, 2009).

Technological advancements are awe-inspiring and provide opportunities to expose students and lecturers to the efficient and effective online learning process. Educational technology should be wisely used as a tool to enhance personal learning, not to replace traditional learning methods completely in line with the concepts recommended by Harasim (200). The implementation of a variety of innovative classroom techniques, including critical analysis and creative presentation and product innovation, has made the class an exciting session to all. The project has extended the understanding on the conduct of project-based action research as described by Dickens & Watkins (1999), Elg et al. (2020) and Towns et al (2000).

However, there are some limitations of the project, it was found that only with the availability of platform and accessibility to the internet that the ODL teaching and learning would be possible and successfully conducted. Therefore, it is recommended the course manager to flexibly design the structure of the online and distance learning by understanding the profile of the adult students attending the course and flexibly design the delivery of the course in accordance to the three pedagogical approaches. It should be taken into consideration the availability of user-friendly online learning platforms, conducive infrastructure and ecosystem, facilitating and guiding the lecturer and students into the practice of online and distance learning in assuring the quality of education.

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VSTL27

# Challenges Faced by the Tourism Industrial Training Students Due to the COVID-19

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**Abstract**

Final year undergraduates are required to undergo industrial training programs as it is a compulsory requirement to graduate. The training helps the students to experience real-life working scenarios in their field of study to develop excellent employability skills. Nonetheless, as soon as The World Health Organization, 2020 declared the COVID-19 as a pandemic, COVID-19 has affected other industries throughout the world with no exception to the hospitality industry. Tourism, in particular, has been hit massively. Almost the entire enterprise needs to be closed during the movement control order. At the same time, it affects the final students who are undergoing their industrial training. In conjunction with the current issues, a qualitative study was conducted to discover the challenges faced by industrial training students of Faculty of Hotel and Tourism Management, Universiti Teknologi MARA, Melaka Campus. This paper conducted a semi-structured interview as its qualitative method, aiming to identify issues and challenges among the students that occured during the period of industrial training due to the COVID-19 pandemic. Measures taken by industry and faculty to overcome the challenges were also discussed in this paper.

Keywords: Industrial Training, Internship, COVID-19, Tourism Industry

## Introduction

11 March 2020 became a historical date as World Health Organization (WHO) announced the coronavirus outbreak as a pandemic (Sahu, 1999). In response to Malaysia's alarming rise of infection cases, the Prime Minister Muhyiddin prohibited all non-essential social activities including worship, sporting, social and cultural events to defend against the spreading of COVID-19 through the National Movement Control Order from 18 to 31 March (Crawford, Butler-Henderson, Rudolph, Malkawi, Glowatz, Burton, & Lam 2020). Education institutions were eventually closed, and later, assisted their students through online distance learning methods to prevent the disruption of schooling (Ozer, 2020).

Baum and Baum (2020) stated that businesses in tourism industries, such as transport operators, especially airlines, were facing critical financial pressures due to the pandemic. Others also include the affected tourist's attractions and facilities, closure of non-essential retail and hostels in many destinations, loss of links to beaches and national parks. Travel and tour packages had to be cancelled, mainly affecting hotels and airlines (Karim, Haque & Anis, 2020). As for the hotel and resort industry, most businesses decided to lay off their workers and resorted to rapid-fire recruiting and staff retrenchment, as a critical tactic to minimise their wage bill to survive in challenging times (Dwomoh, Luguterah, & Duah, 2020; Baum, Mooney & Robinson, 2020).

Since the COVID-19 pandemic affected the activities in the tourism and hospitality industry massively (Dwomoh et al., 2020), it impacted industrial training students also as they lost the opportunity to undergo their training. Therefore, this research paper aimed to identify; What kind of challenges and experiences did the final year undergraduates of Tourism Management students, Universiti Teknologi MARA, Melaka Campus involve in during industrial training programs due to the COVID-19 pandemic.

This paper also discusses the measures taken by employers and faculty/institutions to overcome those challenges.

Internships have taken on an increasingly important role in education over the past decade since they present students with many advantages, ranging from gaining experience and obtaining career-related direction to networking (Gashaw, 2019; Bukaliya, Region, & Marondera, 2012). Furthermore, students often complete graduate training at different sites (King, 2020). The duration of industrial training of students depends on the faculty requirements. Usually it takes at least four to six months (Rodzalan & Saat, 2012). Remarkably, Gashaw (2019) suggested that working experience in industrial training can be interpreted as a triangle of three stakeholders: the instructor, the employer and the student. In fact, all these three different elements are responsible for its objectives and signifies a dynamic existence.

According to Bukaliya, Region & Marondera (2012), employers benefit greatly from industrial training students as a trainee could provide them with affordable assistance, new ideas, and possible future hires. However, industrial training students are not paid in full like full-time employees, and some do not give any fees or allowances. Even so, students can apply the knowledge of a position's responsibilities and duties and may pursue their interest in a sector (Gashaw, 2019).

In a different study, Gashaw (2019) also found that universities that send students to undergo training have benefited from increased business cooperation and collaborations. However, since the COVID-19 pandemic, universities have taken concerted steps to avoid and protect the high-infection disease of all parties involved (Sahu, 2020). Universities are moving to online teaching platforms, but the situation of students undergoing training should be given strict attention so that they also do not expose themselves to the dangers of COVID-19.

## Methodology

This research utilised a qualitative method through a semi-structured interview to gather data from the participants. Twenty-one final year undergraduates of Tourism Management Program, Faculty of Hotel & Tourism Management students, Universiti Teknologi MARA from Melaka campus have partaken in this study. Eight students have undergone training at parks/theme parks, seven students at travel agencies, three students at transportation operators, two of them at government organisations and one student at a resort. The data from the interview were analysed using thematic analysis.
Among the questions asked to students for this study were challenges faced by students during training due to the impact of COVID-19, the number of companies students contacted to apply for training after being terminated, effects on students during industrial training, for example, psychology, money, family or rental house, and assistance or advice received by students from universities and training companies in dealing with this situation.

## Findings and Discussion

### *The Challenges faced by the Industrial Training students due to COVID 19 Pandemic made Students more Resilient*

Industrial training students struggled with challenges due to the pandemic when they were working for 2 to 4 weeks. Findings from the interview revealed that students faced several unexpected situations. Eight students were laid off and another eight students remained training in the same place. Even so, some were ordered to take two or three months of leave of absence without knowing the possibility of continuing the training or vice versa. Five students were instructed to work from home.

The results found that for those who were fired faced obstacles in searching for a new place during the critical COVID-19 situation. There were students who have been rejected by 5 to 15 organisations. They were distressed due to being unable to fulfil this requirement to graduate on time. Some students were required by their employers to work from home, but they need to get used to working with less monitoring, a task that takes a long time to complete with a limited internet connection.

In terms of employment, the participants learnt about the job management system in the new norms and standards of procedures issued by the company. They were requested to maintain social distance with customers, wear face masks, take body temperature daily, and some even needed to wear gloves. Besides, the most valuable and different experience in industrial training students this time is; they became a part of the company staff who saw for themselves and faced with the company

struggling from losses and falls due to the pandemic and movement control orders. It is not easy for them to get such a valuable experience.

In a detrimental context, students felt they were less experienced in handling real situations. Many events were cancelled, their scope of work was reduced due to fewer customers, unlike usual. Financial problems also disturbed the emotional and mental well-being of industrial training students due to the withdrawal of allowances by the company, to some extent affecting their transportation, accommodation and parking expenses. Furthermore, they faced the risk of physical communication and frequent meeting with visitors and customers, which added to their concern on health and personal safety from the threat of this COVID-19 pandemic.

***Student Support Systems have Solved their Problems***

Although the challenges faced by students are clearly stated in this study, most of the training companies, universities and faculty are concerned and responsible for the students involved. The evidence from the interview revealed that some employers still retained their industrial training students in their companies despite their losses. The employers' empathy for industrial training students' difficulties in finding other companies as their training site made some companies keep students in their company until the end of the training period set by the university. However, not much work could be given during the movement control order period. Students could only be instructed to complete simple tasks, and some could be done from home.

All respondents agreed that the coordinator and faculty heledp students until their problems were solved and they completed the training. The vital communication channel of students was with the coordinator appointed by the faculty. From the analysis of this study, it is undeniable that the role of the coordinator is significant to ensure that students calm down in dealing with problems and difficult situations with the company. The coordinators act as intermediaries to the students and the company. The task of the coordinator is like a counsellor to give words of encouragement, stabilise emotions/psychology and motivate students to wake up from the current situation. The coordinator has helped the students to get a new place through their industry connections after being stopped. Besides, the coordinator has updated the current decisions and rules issued by the university to the students.

The university has accepted three students to work at the faculty to reduce the problem of finding a new place. Nevertheless, the university was unable to accommodate all due to the limited space and scope of work. Among other ways to help students were providing opportunities to submit assessments and final presentations via online Apps such as Google Classroom and the university's online platform such as I-learn for final assessment which was previously conducted through the conventional method. Consistent with findings by Sahu (2020) and Crawford (2020), majority of public universities in Malaysia primarily utilised online learning during the MCO period.

Studies conducted by Hamdan & Rahman (2020) stated that universities and faculties are not very efficient and less effective in the management of industrial training. Besides, the training coordinator also lacks communication with students in conveying information. However, this situation is very different from this study, where all students were satisfied even in the condition of COVID-19 problems. Moreover, another assistance provided by the university to students was through providing financial assistance such as RM30 for electricity/internet usage for each eligible student. The university acted in making final decisions in all policies and changes that occurred during this COVID-19 period by taking the views and feedback of all stakeholders involved. Finally, the evolving situation of COVID-19 has led to industrial training situation changes. The present finding also supports Crawford, et. al., (2020), which concluded that it is essential to provide information and flexibility among stakeholders for responding and reacting to a situation. Therefore, it is in good agreement with the results of the present study.

## Conclusion

Current industrial training students have encountered numerous challenges due to COVID-19 pandemic. The interview revealed that these participants were concerned about issues such as economic, psychological, losses in industry exposure, layoffs, and the uncertainty in finding potential companies in critical situations. Although this global issue has significantly impacted everyone, it is crucial for those involved in industrial training programs to play their respective roles in overcoming the challenges while maintaining professionalism to maintain positive relations between industry and universities in the future.

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VSTL30

# Technological Support of Workplace Writing

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**Abstract**

Technology supported writing is crucial especially currently when digital transformation and innovation were rife. Previous studies in the field suggested that technology-enhanced learning became more widespread as writing tools that serve multiple purposes namely evaluation, scoring and instructional. In the present study, the needs for a certain components of writing instructions that are enabled by technological support were looked into. The study focuses on the perception of workers in different service sectors in Malaysia on technology-enhanced writing supports for their workplace writing in English needs. 46 operational level workers responded to the survey. Data were analysed quantitatively using Statistical Package for Social Science (SPSS) version 26, descriptive statistics. The findings revealed that most workers believed in the importance of digital support not only struggling second language writers but also as tools to assist them with the text-level focus (language) and genre focus. In conclusion, technology support serves as tools to assist the users with the structure and mapping the direction of their text, as well as mechanics in writing, grammar and spelling.

**Keywords:** workplace writing, writing tools, technological writing support, ESL, EOP

## Introduction

Functional written communication in the workplace is now more than ever characterized by the technology. The technology advances namely the Internet, e-mail, e-commerce and teleconferencing cannot be taken for granted when discussing what 21st century workplace tasks can offer. Latest devices and innovations have contracted the world into a global village (Kolin, 2015). Besides, the crowd inflowing the professional workforce today are from the Net Generation (Steinwart, 2009). Karoly and Panis (2004) estimated that the technological synergies which demand highly skillful workforce continue to give rise to the economic sectors including the services. Technology was traditionally defined as any piece of equipment and applications that are electronic based and not confined to the Internet and computers (Oblinger & Oblinger, 2005). Technology transforms to suit users' needs and demands users to adapt them into their lives. In the past, when we thought of writing classrooms, we often imagined a solitary author, head bent, scribbling on paper with pen. The communication has been transformed by the new channels called the media and technology (Gamble & Gamble, 2013).

The notion is outlandish in many workplaces today. Writing is no longer a lonely process but has become an extended routine communication. Though it is a myth that 21st century literacies is all about technology only (National Council of Teachers of English 2011), an ethnographic study which looked into digital media and youngsters has concluded that the young people are highly engaged and "always on" relationship with digital media (Ito et al., 2008). There are the good and bad sides of these new tools in writing. It can facilitate a writing process and improve vocabulary and grammar, provides supportive and encouraging environment and boosts the quality and quantity of writing (Lam & Penninton 1995; Fidaoui, Bahous & Bacha 2010; Melor et al. 2013). In second language writing (SLW) ability in general, grammatical ability is widely accepted as a key component (Neumann, 2014). Blogs and social media are very common among the current generation of workforce. It is a platform to express their worldview. There is abundant substantiation to support that those who have personal blogs tend to be prolific writers (Melor et al. 2013). In fact, the interactivity side of blogs increases the sentence grammar. On the other hand, the use of these new tools could cause laidback attitude when they do not take their work seriously, distract their attention and give rooms to informal abbreviations (Yusuf et al., 2018).

Employing technological tools in professional writing (such as internet applications and software) mediates writing activities (Yunus & Yusuf, 2019). The innumerable tools can both promote

and restrain, shape and organize and design their writing activities (Swarts 2013). Workplace writing processes are now more than ever characterized by features of the digital workplace. Professional communication involves intense collaborations with others (both face-to-face and electronic). In the current workplace, writing for occupational purposes involves intense adoption of digital context which the workforce has a wide variety of sources, easily accessible, only a click away (Leijten, Schriver, et al., 2014). Despite technology is extensively considered a focal source of economic progress, it also has a historical record for being a source for cultural anxiety (Mokyr et al., 2015). Texts are built with the combination of language and ideas especially in a collaborative writing activities. The situation encompasses interconnecting webs, e-mails, Internet and etc. that help writers to communicate synchronously and asynchronously (Coffin et al., 2003; Hartley, 1997; Lewis & Ritchie, 2003; Poverjuc, 2010; Supyan et al., 2015).

The workplace communication, both 'internal' and 'external' to the organization relies on the intense collaborations of humans and electronic. The myriad of tools these workers rely on to help and restrain their perception is the mediator to their writing activity (Leijten, Van Waes, et al., 2014; Yang, 2014). Constructing documents for written communication every so often involves a plethora of digital sources (Leijten, Waes, Shriver, & Hayes 2014). The interaction is very dynamic that the multiple digital sources allow text and graphics evolution, refashioning and reprocessing of content from various sources. These actions frequently being alleviated by various software programs and information searching that is enabled by the internet. The workers shape, organize and design their functional written communications using these technology-enabled tools/ new media such as the internet applications, software, hardware, etc., (Swarts 2013). On the other hand, the new communication tools influence English as a second language (ESL) written composition on two different levels; content level and word, sentence and paragraph level (Supyan et al., 2015). It is a real huge relationship between the advancement of technology in both of the internet sources and software and the ESL field especially in written tasks. At workplace, companies have rapidly become fully aware as a fact that technologies or the new communication technologies are deserving of their capital invested. Countless establishments have begun to delight new tools as an essential investment aimed at generating a new standard for workplace communication (Lee, 2011). This is due to the proclaimed motivation booster that it can offer to the workforce and as a result, contributing to the companies' profit and the state development (Kruss et al., 2015; Lee, 2011).

## Methodology and Results

A survey was carried out with a group of operational level workers at five different services sectors in Malaysia. The services sector was selected as it has the most working population in Malaysia. The operational level workers are those at the bottom level of management or the employees who directly produce services and do not involve in supervision of others' works. The samples selected are also graduate from institutions of higher learning (IHL). The instrument used was a set of 43 items questionnaire. It investigated primarily with the respondents' perspectives through their experiences of dealing with the completion of workplace writing. The questionnaire looked into the two levels of text production: the micro-level and macro level text quality.

A total of 46 respondents, both female and male operational level workers responded to the questionnaires.

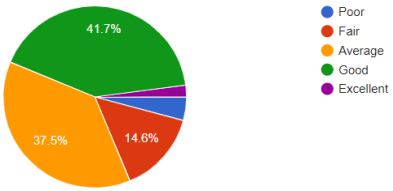


Fig. 1 **Workers' English proficiency level**

Based on Fig. 1, the data from the questionnaire have revealed that most of the respondents (42%) believed that they have good command in English proficiency and half of them (52%) thought that their English proficiency is either average or fair. Only 2% of the respondents assumed they have excellent command of English and 4% believed that their English proficiency is poor.

When asked about technological support in the execution of their workplace written tasks, 85% of the respondents believed that technology-enhanced writing supports have helped them in developing their self-monitoring and writing strategies. The tools have both assisted the workers with the factual knowledge or the language to deal with the tasks (micro-level) and maintaining the quality of text they

produced (macro-level). At the macro-level, the tools assisted them to map and specify directions of their text that is abided by their workplace genres.

## Conclusion

When considering the experience of the workers, changes are as important in writing classrooms as they have effects into their work experience. Writing support tools can assist through the interaction of both the macro and micro-level of text quality. Appropriate choices of writing support tools are considered as they affect students' experiences (DeVoss et al., 2010). The outcomes of the successful employment of the right tool can result in more efficient workers.ESL or English for Occupational Purposes (EOP) writing research needs to explore the effectiveness of available writing applications in both longitudinal studies and experimental studies or improvised the existing tools.

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VSTL31

# Application of Internet-Based Tools in Integrated English Language Skills Classes for Open/Online Distance Learning (ODL)

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**Abstract**

The application of various approaches is an integral part of a teaching and learning session. Numerous tools and techniques are readily available to be integrated into the sessions to ensure that the outcomes desired can be successfully achieved. However, thorough consideration and preparation must be done when it comes to choosing and integrating suitable tools. Some of the aspects considered are the learning outcomes, the types and function of the tools, and the usability of the chosen tools, which includes the materials and interaction tools. This paper presents the application of internet-based tools in integrated English language skills classes for open/online distance learning (ODL) which includes the pre, while, and post stages of the teaching and learning session.

*Keywords: Online learning, open distance learning, English, integrated language skills, e-learning*

## Introduction

The development of education, in-line with the progress of time has required various shifts in the landscape of teaching and learning. Students in learning institutions are steadily changing in terms of age background and generation hence the different approaches which need to be practiced to suit their needs and learning preferences. This requires the instructors to further delve into the variety of teaching approaches and use multiple platforms in ensuring the quality of the teaching and learning activities, where the objective is achieved and the process itself is meaningful and enjoyable.

Among others, Education 4.0 which is a response to the needs of Industrial Revolution 4.0 (IR4.0) where humans and technology are aligned to enable new possibilities, highlights the flexibility of learning, where it can be done anytime and anywhere (Fisk, 2017). E-learning tools is a major part of flexible learning as it offers great opportunities for such activities (Anealka A.H., 2018). As far as internet-based tools are concerned, some of the aspects worth-noting when it comes to the preparation of lessons are digital literacy of the learners, the types, function, and usability of the chosen tools.

In general, the tertiary students at present belong to Generation Z (Gen-Z) with the age range from 18 to 23 years old. This generation is revolutionized by technology, and well-engaged in flexible learning with minimal boundaries, which includes both the usage of related software or applications, as well as the devices in the process (Kozinski, 2017). They can use multiple platforms and technologies at the same time and quickly pick up new software. Information technology (IT) is a major part of their life, with no exception to learning. Therefore, the integration of internet-based tools either web or mobile apps-based is seen to fit the need in teaching and learning.
The tools readily available on the web or smartphone applications store can be categorized into different types and functions. As for the types, it can be generally divided into:

1. *Web-based* - accessed via Internet browsers
2. *Mobile apps-based* - accessed via applications for smartphone/tablet PC
3. *Combination of both web and mobile apps-based*

In general, the tool which offers handheld device applications can also be accessed via its web-based application (e.g.: Google Classroom, Kahoot, Mentimeter), but not all web-based tools offer handheld device application (UFuture, iClass).

As for the function, the most comprehensive one is the *learning management system* (Google Classroom, OpenLearning, UFuture, iClass) which integrates all integral functions related to teaching and learning such as material sharing platform, discussion board, assignment or assessment management where the learners submit their works to be checked and marked by the instructors. The assessment management functions in general also integrate the auto-marking feature which allows the instructor to automatically generate the marks of the learners once the assessment is completed.

Other individualized functions range from *communication* (WhatsApp, Telegram), *social media* (Facebook, Instagram), *media storage* (Google Drive, Dropbox), *media sharing* (Padlet, Flipgrid), *online quiz* (Kahoot!, Quizizz), *survey* (Mentimeter, Google Form), *screen recording*, (ScreenRec, Screencastify), *video conferencing* (Google Meet, Zoom), and *multimedia editing and designing* (Canva, Powtoon, Prezi). The combination of these functions can assist both instructors and learners in elevating their teaching and learning experiences.

Usability is the other factor that also needs to be considered as teaching and learning are concerned. On one hand, good usability for online learning materials means that the site, content, and media are easy to find, use, and navigate. On the other, usability for the people means the interaction tools (such as email and discussion forums) are easy to use and facilitate getting input or help as needed (Shank, 2009).

Consideration in terms of the learning outcomes of the lesson, and the applications used (types and functions), usability (for the materials and the people), and other contributing factors such as internet bandwidth required and the users' (instructors and learners) level of digital literacy are important to ensure the successful process of teaching and learning.

## Objective

The objective of this paper is to present the application of internet-based tools in an integrated English language skills class for open/online distance learning (ODL).

**Internet-based tools application in integrated English language skills class for ODL**

*Background*

The subject for this particular paper is ELC151 (Integrated Language Skills II), which is a compulsory English language subject for undergraduate students (diploma level) for numerous programs in the institution. As it is an integrated language skills course, the learning outcomes focus on the main language skills, namely reading, speaking, and listening; whereas grammar is taught incidentally in the teaching of the stated skills.

*Learning outcomes*

The general learning outcome for this particular lesson is to demonstrate the ability to listen and respond to various discourse at a higher intermediate level. The specific learning outcome is listening to details.

*Pre-listening stage*

The lesson started with a set induction for the learners to familiarise themselves with the activities and theme of the lesson. They were given a brief explanation about the lesson, including the kind of activities and the expected outcomes. The initial question given to the learners via WhatsApp group using voice notes was "*Who do you think is the strongest/the best superhero in The Avengers?"*, and they were instructed to respond also by using voice notes. All of them participated in the activity, and they were sharing their personal opinion, agreeing as well as disagreeing with others regarding the issue.

*While-listening stage*
There were two parts to this stage, which involved similar activities. In the first part, the learners were instructed to watch and listen to a video on Facebook entitled *Kids' Choice Awards - The Avengers.* For the second part, the video was on YouTube, entitled *Avengers Infinity Wars singing The Marvel Bunch.* After a few minutes given for them to watch and listen to the videos, they were instructed to complete a live online quiz on Quizizz, in which the link is given to them via Google Classroom. The types of questions were multiple-choice questions and fill in the blanks, which replicate the same type of questions for their assessment.

*Post-listening stage*
After completing the activities in the second stage, the learners were instructed to engage in a sharing session on the WhatsApp group about the challenges in the listening activity, their strategies in answering the questions, and suggestions for them to improve their listening skills. They were given options to use voice notes or text messages for this activity.

*Assessment*
The assessment was done using Google Forms with auto marking function in the Google Classroom platform. The types of questions were fill in the blanks, which is the same as one of the question types for the activities done during the lesson.

## Discussion

All in all, the application of internet-based tools presented in this paper combines the usage of various applications, which involve the consideration of the learning outcomes of the lesson, the various types, and functions of the tools, as well as the aspect of usability. The applications used are of different types and functions, which were integrated into the complete lesson to achieve the desired learning outcome, listening to details. The applications used such as Facebook, YouTube, WhatsApp, and Google Classroom are among the top apps and widely used which lead to the familiarity of their usage among the learners, who belong to the generation coined as true digital natives, in which flitting between platforms is not an issue. The combination and usage of applications are dynamic as the learning outcomes and learners need to be considered.

The best part of integrating ODL with the various internet-based tools and applications is it does not only benefit the learners, but the instructors as well by making the teaching and learning process easier. The idea of having more choices in integrating different types of applications in various learning stages helps the instructors to grab the students' interest. The instructors can always choose the most suitable applications that suit students' needs and at the same time focus on achieving the lessons' objective. Teaching listening, for example, requires a lot of activities involving listening. The ability to listen to the various authentic materials helps deliver the lesson. Incorporating various platforms such as Facebook and YouTube, opens the door for the learners and instructors to obtain a lot of authentic materials, be it from the native or nonnative speakers of English. On the other hand, WhatsApp and Google Classroom serve as mediums of communication that are easily available and free to be used by both the instructors and students. In terms of assessments, Quizizz and Google Form provide a different experience of completing a quiz or a test for the students while at the same time help instructors to reduce their marking load through the usage of auto-marking feature.

The learners also have the opportunity to study at their own pace anytime and anywhere. The idea of using platforms that students are familiar with definitely has made the activity more interesting and engaging to them. The learners seem to be more comfortable using the platforms such as Facebook, YouTube, and WhatsApp as they are using them for other personal purposes almost every day.

Whichever way internet-based tools are utilized, if its usage can assist the success of the teaching and learning process and achieve the desired objectives, there should be no boundaries for creativity among the instructors to make full use of it.

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VSTL32

# Emotional Capital and 'Care' Practices in E-Learning: A Theoretical Perspective

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**Abstract**

We are witnessing augmented movements in Higher Education recently- especially in that of online learning and in the case of UiTM, Open Distance Learning (ODL), which has accelerated tremendously. In terms of Higher Education Institutions (HEIs), both educators and learners are experiencing isolation due to physical distancing to help curb the pandemic which results in emotional distress especially in e-learning environment. Many research studies focus on how to best support both the educators and students especially in terms of technology and the use of technology in teaching and learning, but little research studies have delved into the aspects of emotional labour and 'care' in e-learning especially during this crisis. In this neoliberal era, this aspect of 'care' could sometimes be neglected and failed to be at the forefront in teaching and learning in HEIs. This theoretical paper will discuss Bourdieuian social theory especially emotional capital, and how it relates to online teaching and learning practices in a crisis. It is hoped that by stressing on emotional capital and care in teaching and learning practices, both educators and students could be better supported in e-learning environment during this crisis and beyond.

Keywords: Bourdieu, social theory, emotional capital, higher education, online learning

## Introduction

Movies such as 'Dead Poets Society', 'Freedom Writers', 'Good Will Hunting' and 'The Blind Side' are not only entertaining, but also have important lessons educators could learn from. One of the unifying themes in these movies is 'faith' that the inspiring teachers have in their students despite the challenges that their students and the teachers themselves are facing in their lives. It is moving to see the emotional investment and care that the teachers have on their students beyond the syllabus delivery. Also, as teaching and learning have been overhauled due to the COVID-19 crisis, education providers on the other hand were trying to provide platforms to continue their teaching and learning as well as assessments to best support the students. In response to the pandemic, the Malaysian Ministry announced 'Movement Control Order (MCO) for Malaysians to help control the spread of the fatal disease. In short, in terms of higher learning, the pandemic has changed the way we understand and experience learning.

Online learning is not a novel practice in Malaysia. We have been introduced to flipped classes and blended learning that compliment face-to-face learning since the year 2000. Reactions and acceptance to online learning have been mixed since the implementation—to many who are complacent with face-to-face learning, to dive into the virtual unknown, could present hesitance, to some degree. During these neoliberal times, the issue 'experience' in particular 'emotions' of the educators and students as active agents in teaching and learning are often neglected and disregarded to some extent- in order to fulfill these neoliberal concerns and agenda.

In the context of Higher Education, e-learning is accelerated due to the recent COVID-19 crisis. Research studies in education have been conducted on how to improve and support the use of technology in teaching and learning targeting both educators and students; however, the element of affective concerns are still unexplored or presents significant dearth in the literature. In particular, the 'emotions' that are experienced by both educators and students should be explored and supplemented

with care practices- and in this context, this paper will be discussing the roles of emotions and care in e-learning environment during a crisis. Highlighting the agents of 'emotions' themselves- educators and students, who use the technology is vital and therefore, theoretical insights into the subject should be explored.

## Habitus, capital and field in the digital sphere

Bourdieu's social theory has been applied in education extensively; however, in education technology, specifically in Malaysia is limited. As the theory has successfully shed light to various educational issues, it is hoped that the theory could potentially do the same in online teaching and learning. This theoretical paper will apply his toolkits- habitus, capital and field to look into online teaching and learning. Previously, these concepts have been applied widely in social research studies especially in education. With the rising use of technology in teaching and learning, the social theory could also be applied to the contemporary digital teaching and learning. In this section, I would attempt to operationalize Bourdieu's thinking tools in relation to online teaching and learning.

Field is the arena where the various elements are happening and experiences. First, the notion of field according to the French sociologist is arena where structure and agency interact. Like any other fields, higher education is a field site on its own- with its own 'rules' and the agents have to 'play the game' (Bourdieu, 1986; Bourdieu & Wacquant, 1992) and play it well to navigate this particular field. During this time— how higher education itself and the mechanics have changed drastically from it was before, this change of fields inevitably affects not only the structure (Bourdieu, 1987), but also how the agency now and the students and educators are navigating and experiencing higher education. For example, in a particular context, e-learning, the field would be the various online platforms. In addition to that, the crisis that we are in is a field in itself where 'emotions' are experienced.

Next, habitus is the dispositions that are based on one's experiences, which are not static, and it is always changing with one's everyday life experiences. Habitus are influenced by our backgrounds – notably familial and educational. Thus, this also means that habitus is highly dependent on the cultural backgrounds that one is raised in (Bourdieu 1987, Bourdieu & Wacquant, 1992) and thus, culture then also influences how we feel and react to 'emotions'.

Social capital, cultural capital and economic capital are not exclusively separate, but rather transformational and transferrable from one capital to the other (Bourdieu & Wacquant, 1992). First, economic capital means wealth or material goods that a person has, which is also transferrable to other capitals. In relation to the e-learning, this refers to a person's access to material goods which enhances online learning such as computers and mobile phones, as well as access to good Internet connection or WiFi set up at his or her respective residences. Second, social capital refers to access to people that may benefit people for their advancement. In applying this to e-learning, social capital here could refer to students and educators who have the advantage in terms of social relations to others in their network who help them in some ways with access to knowledge or infrastructure relating to their online learning.

Third, cultural capital refers to the qualifications and information that a person possesses. Cultural capital categories include: objectified, institutionalized and embodied. Objectified cultural capital means material possession a person has. Next, institutionalized cultural capital refers to qualifications and credentials that one has received. Last, embodied cultural capital refers to culture internalized by a person through their habitus, for example through his or her taste or accent. Cultural capital here refers to any prior on ongoing classes or training that a person has that would give an advantage to the person, in this case, to online learning. For example, this could refer to knowledge of qualifications in the Internet, technology, software or other relevant online-related learning that could give an upper-hand to the users.

## Emotional capital and 'care' in e-learning

Emotions can influence the way individuals process their thinking and the way they are behaving. The importance has become more relevant especially in today's neoliberal climate. In terms of the concept of capital, emotional capital could then be defined as an embodied cultural capital. Ahmed (2004) suggested the notion of "affective economies" which are freely circulated. In relation to that, the aspect of 'care' is an equally imperative affective element in any human relationships (Noddings, 1984). Noddings (2010) also stressed that although caring is experienced universally; this could be expressed in varied ways due to cultural backgrounds. Hence, the habitus and field of where the teaching and learning take place play vital roles in studying the affective elements.

Diane Reay (2004) and Helga Nowotny (1981) have introduced and developed the concept of emotional capital from Bourdieu's existing concepts of capital (cultural, economic, social and symbolic). In addition, according to Reay (2004), emotional capital can be accumulated through social relationships and distributed amongst family members. Compared to other capital, emotional capital portrays, arguably, a particularly gendered capital in which women are often perceived to have more emotional capital than men, and it is performed more often in private (a sphere implicitly gendered as 'feminine') than publicly (Nowotny, 1981). In a study conducted by Reay (2004), she explored mothers' involvement in their children's schooling experience and found that mothers are much invested in their children's academic attainment and emotionally affected by this.

Furthermore, Damasio (1994) stressed on the stressed emotions in human experience. In terms of learning motivation, emotion plays a crucial essence for the students' academic performance (Artino, 2009; Artino & Stephens, 2006). Cleveland-Innes and Campbell (2012) found in their study on emotional presence and online learning that emotions should be recognized by the learners as it would facilitate their online learning experience. However, as reported in the news, young people and students are the ones who are affected the most by the COVID-19 outbreak (Cao et al., 2020; Wang et al., 2020). According to a recent study on college students' mental health during the COVID-19 crisis by Cao et al. (2020), it was found that the students have experienced anxiety and the causes include economic instability and changes in their academic and daily life routines. The same study also stressed on the importance of support from their families, friends and HEIs. Therefore, e-learning platforms as the specific fields play an important role to teaching and learning.

Emotions indeed play a vital role in human experience in teaching and learning. Thus, in relation to the issues discussed, 'care' practices in e-learning environment, especially during a crisis, where both students and teachers are experiencing to some extent isolation and emotional stress, then should be approached differently by educators compared to face-to-face classes. For example, educators could reach out to the students in a more proactive manner to ensure that their students are doing well not only in their studies, but also in other areas in their lives that could potentially affect their performance. Besides that, educators could also design more collaborative projects for the courses, and this would encourage the students to work with one another, which in turn would increase the sense of connectedness despite the physical distance from each other. These issues related to 'emotions' should be highlighted to positively influence the students' e-learning experiences.

## Conclusion

Teaching and learning on e-learning platforms involve many intricacies and nuances- physical, mental and emotional factors. As Bourdieu's social theory has established its applicability in research in educational studies, and as discussed in earlier- albeit with some points of concerns outlined, it is hoped that future researchers in education, especially in e-learning would apply some aspects of emotions and care practices in their research studies. By looking beyond the 'physical' aspects- the teaching and learning themselves and pedagogical and curriculum design aspects of e-learning, these 'emotions' and 'care' practices in play would benefit by adding the missing important element to understand learners and learners' experiences in future research studies.

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VSTL34

# Teaching & Learning Visual Aids: PowerPoint and Visibility

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**Abstract**

Background: Visual aids play an imperative role in lecture delivery today. Visual aids enhance audience engagement and learning experience. The purpose of this study is to provide a better understanding of the illumination setting for Microsoft Office PowerPoint 2011 and its impact on learner's visibility at six-meter viewing distance during a lecture. Methods: The background illumination for Microsoft Office PowerPoint 2011 pre-set at one-quarter (25%), half (50%), three-quarters (75%), and full (100%) transparency levels in the visibility investigation. Visibility was inferred from the reading speed measurement to complete a text projected at six meters. Results: Visibility was affected significantly by different background illumination settings ($p<0.05$). The best visibility was found in a three-quarters transparency setting. Conclusions: Academicians should be more cautious about their PowerPoint text-background contrast in lecture preparation and delivery to enhance the learning environment.

## Introduction

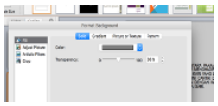
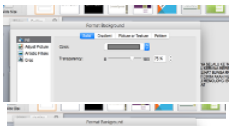
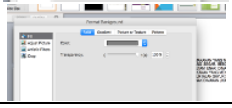
Essential components to effectively deliver a good presentation in teaching and learning are not only limited to appropriate content supported by facts, suitable designs, well-rehearsed lectures delivered with confidence, and minimum mistakes; visibility of the slides is also crucial. There are many types of digital screens used in teaching and learning, such as cathode ray tubes, liquid-crystal-displays, light-emitting diodes, high-definition televisions, and digital projectors. High text-background contrast is essential to enhance visual resolution (Buchner et al., 2009). Ambient lighting conditions have been reported to affect the text-background contrast (Boyce & Wilkins, 2018). When the luminance difference between text and background increases, the visibility becomes better (Legge et al., 1990). However, visual discomfort may occur in high contrast due to the glare factor (Jaiswal et al., 2019). The purpose of this study is to provide a better understanding of the illumination setting for Microsoft Office PowerPoint 2011 and its impact on learner's visibility at six-meter viewing distance during a lecture.

## Method

Four texts were constructed by extracting sentences from local Standard Five school textbooks in Malay language. Each text contained the same word count of sixty-three words, employing four to twelve related words per sentence. The font, color, indent, spacing, and size of the four texts were kept consistent. The text color was black. Text alignment was justified. The font size was set at thirteen points. The text content was then transferred into PowerPoint slides. Each slide was constructed with a black circle on a different background (Table 1). Started with the right click on the background, then chose “format background” and adjusted the transparency levels at a quarter (25%), half (50%), three-quarters (75%), and full (100%) respectively. Transparency levels of each background proportionally correlated to text-background contrast levels. One-quarter yielded the lowest text-background luminance contrast; full transparency (100%) yielded the highest text-background luminance contrast. A digital projector was used to project the four slides at six meters from the learners. Calibration of the projector was carried out using an online calibrator (DisplayCal) that provided a rough estimation of the gamma value using a visual matching method.

The sample size was calculated using the formula [n= (Z/Δ)²*P(1-P)]. Twenty-two learners were recruited using convenient sampling. Informed consent was obtained before participation. The study was approved by the Research Ethics Committee, Institutional Review Board. The visibility of each text-background luminance contrast was assessed by measuring the reading speed in words per minute (wpm). Four different texts were assigned randomly to minimise learning effect and memorisation.

**Table 1**
Summary of information in reading materials preparation

| Transparency levels | Microsoft Office PowerPoint 2011 setting | Illustrations of reading materials |
|---|---|---|
| One-Quarter<br>25% transparency level |  |  |
| Half<br>50% transparency level |  |  |
| Three-Quarter<br>75% transparency level |  |  |
| Full<br>100% transparency level |  |  |

## Results

The visibility of PowerPoint as visual aids was inferred from measuring the speed of the learners reading from the text projected on the screen at 6-meter viewing distance. Visibility was affected by the level of transparency setting in Microsoft Office PowerPoint 2011 that was transpired through variation in reading performance at the viewing distance of six meters ($F=2.83$, $p<0.05$). The best visibility was at three-quarter transparency level.

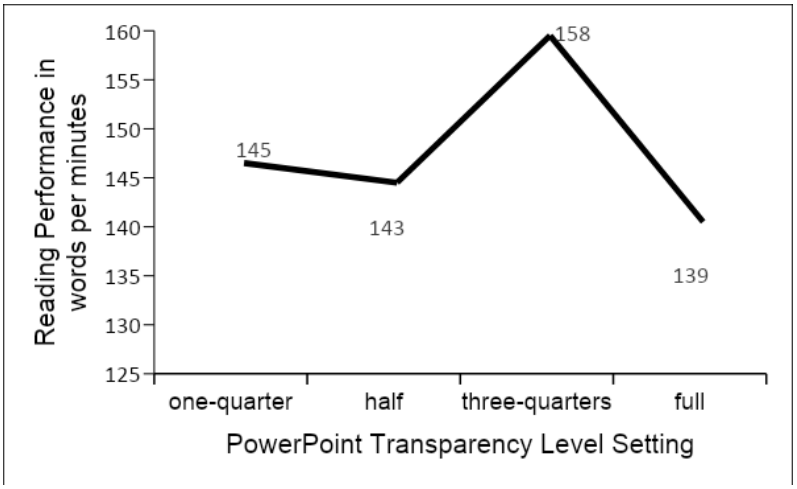



**Fig. 1** Reading performance in four different PowerPoint transparency level settings. The number indicates the mean reading speed in words per minute.

## Discussion

Reading is a complex task involving various visual and non-visual factors (Akutsu et al., 1991; Laubrock et al., 2006; Lott et al., 2001; Owsley, 2011). Factors that affect reading performance include font size, font type, field size, contrast, eye movement, temporal summation and transient mechanism, central-field loss and cloudiness of the ocular media, visual span, reading distance, and age. Contrast plays a central role in the illumination and visibility effects on reading performance (Legge et al., 1987). At the

maximum contrast, subjects have the fastest reading rates and it declines as the contrast reduces (Legge et al., 1987). The high sensitivity for neural integrity of the temporal contrast sensitivity among maculopathy patients is evident by a stronger association between temporal contrast sensitivity and reading speed (Brussee et al., 2018). Faster readers are less susceptible to environmental factors in comparison to slow readers (Rubin, 2013). The reading rate in normal vision is hardly affected by any large change in photopic luminance (Legge & Rubin, 1986). Transparency setting affects visibility through its link to contrast and illumination.

The elements of the reading process involve the physical, physiological, and psychological of the readers, the reading materials, surroundings, and environment. Reading performance can be evaluated in many ways such as acuity, speed, accuracy, comprehension, endurance, and eye movement during reading (National Research Council, 2002). Reading accuracy is determined by the number of errors (Kiely et al., 2001). Reading comprehension is the interaction of text-based and knowledge-based processes (Shihab, 2011) and can be assessed by asking questions about the content of the text (Burton et al., 2014). Endurance is assessed using longer passages and the test usually takes a longer time (Rubin, 2013). Eye movement assessment for reading can analyse the fixation duration, saccade, regression, and return sweep (Rayner, 1998). Despite having many parameters of reading, our study focuses on the speed of reading as it practically defines the functional vision. Our finding is in agreement with the previous study that reported a reduction of reading speed under low luminance, less number of saccades velocity, and more eye blinks compared to high luminance (Benedetto et al., 2014). Although the reading speed reduces at lower transparency levels in our study, the best reading performance does not occur at the highest transparency level. The reduction of reading speed at the highest transparency level might be due to the glare effect (Yoshimoto et al., 2020). The glare from the background might interfere with the clarity of the text (Wilkins, 2016). The effect of the luminous veil might reduce the contrast perceived in the retinal image (Flynn & Badano, 1999). The average reading speed at distance in this study is slightly less than the reading speed at near (164wpm) reported in the Malaysian population for contextual sentences (Chen et al., 2019).

## Conclusion

Best visibility has been revealed in the three-quarter transparency setting of PowerPoint. Appropriate contrast between background and text is vital for visibility and ease of reading during PowerPoint presentations. Contrast differences should not be excessive between text and background that might elicit visual discomfort. Academicians are recommended not to set their PowerPoint text-background transparency levels to the maximum during lecture delivery to minimise the glare effect that can affect visibility and ability to read the projected slides efficiently. Adequate text-background illuminance difference with minimum glare should be incorporated in lecture slides for better ergonomic presentation.

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VSTL35

# Level of Motivation in Project-based Learning of JKE Students In POLISAS

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**Abstract**

In education, appropriate teaching method is very important to determine the students' motivation during teaching and learning process. Therefore, a paradigm shift needs to be implemented from teacher-based approach to student-based approach in order to enhance students' intrinsic motivation. Hence, project-based learning is one of the student-based teaching methods that will enhance students' intrinsic motivation. Typically, there are five elements in project-based learning which are autonomy, authentic problem, skills, cooperative learning and teacher's roles. Therefore, this research is aimed to determine the level of intrinsic motivation that is contributed by each element of project-based learning. The samples were selected randomly comprising 115 fourth semester students undertaking Diploma in Electrical Engineering during the December 2019 session from Polytechnic of Sultan Haji Ahmad Shah. This research was a survey that utilised questionnaire as the research instrument. Through Statistical Package for Social Science (SPSS) Version 26.0, the collected data was analysed for mean scores. The results showed that in project-based learning, all elements contributed to high level of intrinsic motivation. Based on the research findings, future research on project-based learning should be continued so that the project based-learning can be used as one of the teaching methods that will enhance students' interest and motivation in line with advancement of education system.

Keywords: Teaching method, project-based learning, intrinsic motivation

## Introduction

In education, a lecturer becomes an effective moderator to all teaching and learning processes either in the classroom or outside the classroom. To create effective teaching and learning process, lecturers need to use appropriate teaching approach to increase students' motivation. It is a must for every lecturer to know how to motivate students so that they are truly engaged in learning process. Project-based learning integrates the concept of knowing and doing (Markham, 2011). Students do not only gain the knowledge and core elements of curriculum, but what is important is that they apply what they know to solve the real problem and make decisions. Project-based learning helps students to gain skills and enhance their ability to work in group and spend their times wisely (Ang & Ngu, 2014). Project-based learning gives many benefits such as enhancing the motivation of students if lecturers have great motivation to face it and increase it in the classroom (Lam et al., 2009).

## Problem statement

The motivation of students to learn was low when the things they learned were irrelevant to the real life (Shah Rizal, 2005). Hence, students need changes in learning especially technical education to shift from teacher-based approach to student-based approach. To encourage students to be active in learning, lecturers in the higher learning institutions have to create intrinsic orientation inside students. The lecturers should guide students to use natural energy to enhance intrinsic motivation. This can be done by changing the students from external rewards to enthusiasm in learning. There are many approaches that can be used to enhance students' motivation for those who are lack of motivation (Tileston, 2004).

## Research Objective

The objectives of the research are as follow:

i. To determine the level of motivation that is contributed by autonomy element in project-based learning.
ii. To determine the level of motivation that is contributed by authentic problem element in project-based learning.
iii. To determine the level of motivation that is contributed by skills element in project-based learning.
iv. To determine the level of motivation that is contributed by cooperative learning element in project-based learning.
v. To determine the level of motivation that is contributed by teacher's role element in project-based learning.

## Literature Review

Students-centered learning is a teaching environment in which students are active in the learning process (Esah, 2004). The students do not only listen to the teacher's explanation, but they are also engaged in activities such as discussion, problem solving, drawing and so on. The interaction between students and lecturer creates a harmony and conducive situation for learning.

According to Solomon (2006), project-based learning is a progressive teaching style and involves students in cooperative learning to solve authentic and challenging problems. Project-based learning believes that it can increase the mind of students (Katz dan Chard, 2000). Project-based learning is a student-based strategy that encourages students to focus on real world project that can increase their motivation. The projects do not only cover knowledge or technical issues, but practical skills too (Macias-Guarasa, 2006).

Motivation is a combination of motive and action. Motivation is an encouragement to act (Asmadi, 2000). According to Muralidharan (2006), motivation is defined as preparation to achieve the goals and capability to fulfill needs. Intrinsic means in nature or inner. This motivation comes from the inside of an individual. When it is related to learning, an individual is forced to learn by a motive to understand that is caused by curiosity (Putcher et. al., 2002).

## Research Methodology

This is a quantitative research that used questionnaire as the instrument to obtain data from the respondents. The samples were selected randomly comprising 115 fourth semester students undertaking Diploma in Electrical Engineering during the December 2019 session from Polytechnic of Sultan Haji Ahmad Shah (POLISAS). The data were analysed using mean scores to identify the level of intrinsic motivation.

## Research Findings and Discussion

Table 1 shows the mean scores and level of motivation for elements of problem-based learning among students in JKE. Firstly, the level of intrinsic motivation is highly contributed by autonomy element which is 4.34. This is in line with the research by Henry (1994) that autonomy is based on student's interest in which students can control the learning process that will increase their motivation. The autonomy to choose group member gives satisfaction to them because the group members can help and give full cooperation to complete the project.

Secondly, the level of intrinsic motivation is highly contributed by autonomy authentic problem which is 4.34. According to Gulbahar & Tinmaz (2006), the students in project-based learning environment are dealing with authentic problem. When students can identify the problems, their minds and thoughts are being challenged. Hence, they will attempt to find solution to overcome the problem.

The level of intrinsic motivation is highly contributed by skills element which is 4.06. The finding supports the research by Thomas (2000) that the project involves students in research process consisting designing, decision making, searching and problem solving, exploring and model building. These skills are important for engineers.

The level of intrinsic motivation is highly contributed by cooperative learning element which is 4.26. The finding is in line with Macraken (2005) that cooperative learning can increase interest, motivation, success, creativity, understanding and similarity of students. Each group member is aware of one's roles and responsibilities. Discussion with group members gives chances to exchange and share views among themselves.

Last but not least, the level of intrinsic motivation is highly contributed by teacher's roles element which is 4.24. This is in line with Frank et., al. (2000) that lecturers do not only give lesson to the students but enhance motivation, give guidance and help students to build their own knowledge. Besides that, discussion with students also encourages students to be actively involved in implementing the project. Furthermore, the lecturer can monitor the progress of the students' projects from time to time so that the project could be completed on time. This is opposed to the research by Ainon & Abdullah (2002) that a lecturer becomes a motivator to students when positive relationship exists between students and lecturer.

**Table 1**
Mean scores and level of motivation for elements of problem-based learning

| Elements | Mean | Level of Motivation |
|---|---|---|
| Autonomy | 4.34 | High |
| Authentic problem | 4.04 | High |
| Skills | 4.06 | High |
| Cooperative learning | 4.26 | High |
| Teacher's role | 4.24 | High |

## Conclusion and Implication

The research findings showed that all elements which are autonomy, authentic problem, skills, cooperative learning and teacher's roles contributed to high level of intrinsic motivation among students in Electrical Engineering Department when doing projects. In terms of autonomy, the students who are exercising it while doing a project can increase their effort to do their best because they can make their own decisions in all aspects. In terms of authentic problem, the students feel more motivated if they are exposed to the real problem and this has caused them to make an attempt to overcome the problem. Throughout the projects, the students will be more confident as they utilise the skills such as problem-solving, information-handling, decision-making and communication. Cooperative learning happens when a group of students working towards one goal or searching out solution for the problems. When sharing knowledge culture is applied in the project-based learning, their intrinsic motivation will be increased to be involved actively in the project. Instead, lecturers also play an important role in enhancing students' motivation in doing projects. Lecturers act as supervisors that always give support and advice in order to make sure that the project could be completed on time.

This research indirectly gives big implications to all authorities in education nowadays. In student context, project-based learning exposes students to dealing with authentic problems that leads them to figure out the possible solutions. They do not only gain the knowledge, but they are also equipped themselves with generic skills that become an added value to them in working environment. In lecturer context, it is recommended for lecturers to identify elements that will increase intrinsic motivation and improve the existing project-based learning according to the need of the courses and students' interests. For the Ministry of Education, project-based learning could be applied in curriculum and improved from time to time in line with the industrial needs and technologies. In industrial context, polytechnics can create continuous collaboration with industries to increase the activities in research and development.

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VSTL36

# Gender Differences in Students' Attitude Towards Mathematics at UiTM Terengganu

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**Abstract**

This study aims to investigate the potential impact of gender in students' attitude towards Mathematics among students in UiTM Terengganu. A random sampling of 86 students have been selected for this study. Independent sample t-test was used to examine the effect of gender on students' attitude towards Mathematics. The finding concluded that there is no significant difference in students' attitude towards Mathematics between gender. Even though there is no difference between gender, the study found that the students' attitude towards Mathematics is considered as not very satisfactory. Therefore, the management of the university should focus on the empowerment of students' attitude to improve the quality of students' achievement in Mathematics.

Keywords: students' attitude, gender differences, Mathemathics achievement

## Introduction

Mathematics is a very important subject in the academic curriculum either in primary, secondary or tertiary level. Individuals who are brilliant in Mathematics tend to develop their paths in science, technology, engineering and Mathematics (STEM) stream. Simultaneously, it will help the nation by producing the professionals in many important fields. In order to achieve the objectives, schools or academic institutions are to put extra efforts in the learning of Mathematics in ensuring students' success in the subject. Attitude has a prominent factor in students' achievements in mathematical studies in which it can be in positive or negative feelings. As stated by Kiranjit Kaur (2017), attitude towards Mathematics is the liking or disliking, approving or disapproving the subject, which implies a positive or negative attitude towards Mathematics. A significant number of educational researchers have reported a considerable gender differences in students' attitude towards Mathematics (Da'inna, 2016; Amalu, 2016; Boran, Aslaner & Cakan, 2013; Lee & Anderson, 2015; Yenilmez, & Ozabaci, 2003). The findings by Kosgey, Manduku & Bii (2015) clearly indicated that both boys and girls have positive attitudes towards the learning of Mathematics despite the facts that boys were more positively inclined than girls. Elsi (2017) found that the students' attitudes towards Mathematics differed by gender, field, and Mathematics score. According to Mohd Fadzil, Mohd Hasrul & Noriah (2018) through the findings of their study, have revealed that there was no relationship between age, gender and attitude of gifted students towards Mathematics. In UiTM Terengganu, most program will have at least one Mathematics subject which includes Diploma in Office and Management System. Pursuant to the high failure rate in MAT111, a research has been conducted. Therefore, the objective of this study is to investigate the potential impact of gender in students' attitude towards Mathematics in UiTM Terengganu.

## Methodology

A sample survey was undertaken involving a total of 86 students out of 108 students registered for Mathematics subject at UiTM Terengganu. This sample size is recommended by Sekaran & Bougie (2016). The combination of stratified random sampling and systematic random sampling were used in this study. Under stratified random sampling, the number of students for each gender was determined proportionately. Then, the systematic random sampling was used to select the students for each

gender. A questionnaire was distributed to the selected students during their common test in class. The students were asked 15 questions on their attitude towards Mathematics and they need to rate (5 Likert-scale rating) their level of agreement for each question. The data was analyzed using Statistical Package for Social Science (SPSS). Descriptive analysis was used to gauge an overview of the students' profile. Meanwhile, inferential analysis was carried out to test the following hypothesis using the Independent sample t-test:

$H_1$: There is a significant difference in students' attitude towards Mathematics between male and female students.

## Findings

Table 1 shows the demographic profile of the students. Majority of the students are female with 86% and the rest are male (14%). There are 77.9% students from part 1, 19.8% from part 2 and 1.2% from both part 3 and part 5. Most of the students scored D (43%) for Mathematics subject in Sijil Pelajaran Malaysia (SPM) examination. Only 10.5% of students scored A while the others scored B (11.6%), C (16.3%) and E (18.6%).

**Table 1**
Profile of the students

| | Category | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Female | 74 | 86 |
| | Male | 12 | 14 |
| Part/Semester | 1 | 67 | 77.9 |
| | 2 | 17 | 19.8 |
| | 3 | 1 | 1.2 |
| | 5 | 1 | 1.2 |
| SPM's Mathematics Grade | A | 9 | 10.5 |
| | B | 10 | 11.6 |
| | C | 14 | 16.3 |
| | D | 37 | 43.0 |
| | E | 16 | 18.6 |

The reliability of the items used to measure students' attitude towards Mathematics was conducted using Cronbach' Alpha. It measures the internal consistency of the items, that is, how closely related a set of items as a group. Based on the value of Cronbach's Alpha (0.878) shown in Table 2, it indicates good internal consistency of the items in the scale.

**Table 2**
Reliability Statistics

| Cronbach's Alpha | Number of items |
|---|---|
| 0.878 | 15 |

Overall, the mean score of students' attitudes towards Mathematics obtained from the students was 3.1938 with the standard deviation of 0.6030 as shown in Table 3. This finding showed that the attitude of the students towards Mathematics in the university is not very satisfactory and need to be improved.

**Table 3**
Descriptive statistics

| | Number of students | Mean | Standard deviation |
|---|---|---|---|
| Students' attitude towards Mathematics | 86 | 3.1938 | 0.6030 |

The Independent t-test requires that the variable to be approximately normally distributed within each group (male and female) and the variances of the two groups are equal in the population.

George & Mallery (2010) stated that the values for skewness and kurtosis between -2 and +2 are considered acceptable to prove normal univariate distribution. The result obtained in Table 4 shows that

the skewness and kurtosis for both male and female are between -2 and +2. Therefore, the normal assumption is not violated for both groups.

**Table 4**

Test for normality

| | Gender | Skewness | Kurtosis |
|---|---|---|---|
| Students' attitude towards Mathematics | Female | -0.006 | 1.437 |
| | Male | -0.143 | -0.071 |

Levene's Test of Equality of Variances was used to test the equality of variances between the two groups. Based on the result obtained in Table 5, it is shown that the group variances can be treated as equal (F = 0.210; p = 0.648).

**Table 5**

Test for Equality of variances

| | Levene's Test for Equality of Variances | |
|---|---|---|
| | F | Sig. |
| Equal variances assumed | 0.210 | 0.648 |

The analysis was then continued with the Independent t-test to determine whether there is a significant difference in students' attitudes towards Mathematics between male and female students. Table 6 shows that the female students obtained higher mean score in attitude (M = 3.2770; SD = 0.6097) than the male students (M = 2.9889; SD = 0.5377). However, this difference is not significant (t = 1.274; df = 84; p = 0.206). Thus, hypothesis 1 is rejected. Therefore, it can be concluded that there is no significant difference in students' attitudes towards Mathematics between male and female students in the university.

**Table 6**

Independent t-test

| Gender | N | Mean | Standard Deviation | df | T | p-value |
|---|---|---|---|---|---|---|
| Female | 74 | 3.2770 | 0.6097 | 84 | 1.274 | 0.206 |
| Male | 12 | 2.9889 | 0.5377 | | | |

## Conclusion

The purpose of this study is to compare the attitude towards Mathematics among female and male students at UiTM Terengganu. According to the test conducted, it is concluded that statistically there was no significant difference between students' gender according to the attitudes towards Mathematics. This finding is in line with some studies include Batool et al. (2020) which found that the existence of gender difference in attitude towards Mathematics was not significant, while Lee and Anderson (2015) showed that both male and female had a very similar attitudes towards Mathematics when the sample was taken as a whole. Other researchers (Lindberg, Hyde, Petersen, & Linn, 2010) also have concluded that the gender gaps in attitudes toward Mathematics are insignificant.

Based on the research findings, it is recommended for the university management and educators assessing students' attitude towards learning Mathematics. The problems associated with negative attitudes towards Mathematics' mathematical ability and about the usefulness of this subject should be addressed, so that with the possible solutions taken, the students' performance in Mathematics might be enhanced. Regardless of the gender difference, it still depends on the type of Mathematics involved, and math-skill level of the students. Therefore, these factors may be useful for researchers in this area to investigate further in relating to gender and attitudes towards Mathematics.

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VSTL37

# Effects of The Implementation of Open and Distance Learning (ODL) and Open-Ended Laboratory (OEL) on Water Engineering Laboratory

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**Abstract**

Due to the restriction of Movement Control Order (MCO), only limited essential services such as healthcare, logistics, food supply chain, and banking can operate while all schools and higher educational institutions were strictly closed. The enforcement from the government is to ensure that all Malaysians will stay at homes to stop the virus from spreading and breaking the chain of infection. On the first week of April, the Ministry of Higher Education announced that all higher learning institutions' teaching and learning sessions must be conducted online until December 31st. The aim of this study is to determine the effects of the implementation of Open and Distance Learning (ODL) and Open-Ended Laboratory (OEL) for Water Engineering laboratory. OEL is where students are given the freedom to develop their own experiments, instead of merely following the prepared set guidelines from a laboratory manual or elsewhere. The students must devise their own strategies and back them with explanations, theory and logical justification. Usually, the practice of OEL learning session is conducted by using face to face technique between students and lecturer. However, the normal practice of OEL learning session could not be implemented during MCO and the laboratory lesson is totally changed to online. From the analysis of this study, it is found that the percentage differences between ODL and OEL for CO1-PO4 is 10% while for CO2-PO6 is 13%. Therefore, it is proved that ODL is not the best method to measure the students' achievement based on their psychomotor skills.

Keywords: movement control order, open and distance learning, open ended laboratory, water engineering laboratory

## Introduction

The World Health Organization (WHO) declared the Coronavirus disease (COVID-19) outbreak as a pandemic on 11th March 2020. In many countries, including Malaysia, a pandemic action plans have been announced by the authorities. One of the action plans is known as a Movement Control Order in Malaysia (MCO) to stop the spread of COVID-19 while transmission and mitigation can be further understood. Due to the restriction of movement, only limited essential services such as healthcare, logistics, food supply chain, and banking can operate while all schools and higher educational institutions were strictly closed. The enforcement from the government is to ensure that all Malaysians will stay at homes to stop the virus from spreading and breaking the chain of infection. Then, the Ministry of Higher Education announced that all higher learning institutions' teaching and learning sessions must be conducted online until December 31st.

In Malaysia, ODL method is gaining an importance attention as an alternative teaching-learning and training medium during COVID-19 pandemic. ODL classes are quite easy to be practised for theory-based courses compared to practical based courses. In general, practical based courses are such courses where the psychomotor student skills are evaluated based on related tasks like project works, experimentations, practical test etc. Faculty of Civil Engineering, University Teknologi MARA Pasir

Gudang decided that all courses were compulsory to go through online learning for semester March-July 2020 because of COVID-19. By using online platform such as Ufuture, Google Classroom, Google Meeting, Webex and Facebook Live, majority of the students enjoyed the learning activities conducted by their lecturer. For teaching and learning theory-based courses, students can study from anywhere, choose flexibility learning session, save time and at the same time they still have social interaction with the lecturer for assessment and lecture's consultation. Meanwhile, for teaching-learning practical based courses, it is totally different where the students started their learning activities from home with no physical interaction with the lecturer and groupmates to perform laboratory experiment and practical assessment (Basantia, T. K., 2018). These are the challenges occurred when applying online learning practical based courses during a pandemic outbreak to make sure the program outcomes of practical courses were well achieved. In this study, a comparison data analysis between student's programme's outcome achievement on ODL method and OEL practical based courses were conducted.

## Content

### 2.1 Students

All semester five Civil Engineering diploma programme students will undergo water engineering laboratory course in their study plan. In the laboratory sessions, students were divided into a small group of 4 to 5 members. They were divided in a small group to allow them to communicate, work in team and discuss within peers for the whole process of laboratory investigation until the completion of technical report submission. The lab session was spread over fourteen consecutive weeks, 2 hours each. For this study the ODL implementation was for semester March until July 2020 students while OEL was for semester September 2019 until January 2020 students.

### 2.2 Methods

In normal practice, laboratory sessions were conducted using OEL method. An OEL is where students are given the freedom to develop their own experiments, instead of merely following the prepared set guidelines from a laboratory manual or elsewhere. It will encourage students to think critically out of the box and be more independent in developing their psychomotor skills when conducting an experiment. The students must devise their own strategies and back them with explanations, theory and logical justification (Abd Rahman, N., et al., 2011).

Usually, the practice of OEL learning session is conducted by using face to face technique between students and lecturer. However, the normal practice of OEL learning session could not be implemented during MCO and the laboratory lesson is totally changed to ODL. For this course, the medium used for ODL is Google Classroom and Ufuture. The videos related to each of the laboratory session and also the data will be given to the students in order to give clearer view on the laboratory testing. So, the students have no chance to conduct the experiment physically like usually being done in OEL learning session.

### 2.2 Course Outcome and Programme Outcome

Course Outcome describes what students are expected to know and able to perform or attain by the end of the course. While Programme Outcome describes what graduates are expected to know and able to perform or attain by the time of graduation which include the skills, knowledge and behaviour. So, in Water Engineering Laboratory course which consists of two CO's and PO's which are CO1-PO4, and CO2-PO6. PO4 and PO6 are the programme outcome that are being assessed related to the psychomotor domain and this data will be used to measure the comparison between ODL and OEL students' achievement.

Table 1. Course Outcomes and Program Outcomes

| Course Outcome | | Programme Outcome | |
|---|---|---|---|
| **CO1** | Construct the experiments, data analysis and intrepretations methods related to basic fluid mechanics, hydraulics, hydrology and water quality using standard test and measurement. | **PO4** | Conduct investigations of well-defined problems, locate and search relevant codes and catalogues, conduct standard tests and measurements. |
| **CO2** | Demonstrate leadership skills in task related to water engineering. | **PO6** | Demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technician practice and solutions to well defined engineering problems. |

2.4 Implementation of the Laboratory Activities

Implementation of the OEL activities at the Faculty of Civil Engineering, UiTM, Pasir Gudang was progressively introduced, monitored, reviewed and streamlined since the last accreditation exercise by EAC in 2012. New guidelines were introduced to facilitate the teaching and learning activities to benefit not only the students but new lecturers of the courses. Manual preparation for each laboratory activities would include the elements as shown in Table 3. The preamble to the laboratory manual should include introduction, objectives and learning outcomes. The lecturers may also include basic theoretical information as and when necessary.

Table 3: Elements in an OEL Manual

| Level | Preamble | Problem | Ways & Means | Answers | Common Name of Lab Activities | Degree of Open Ended |
|---|---|---|---|---|---|---|
| 0 | Given | Given | Given | Given | Traditional | 0 % |
| 1 | Given | Given | Given | Open | Partially open | 33% |
| 2 | Given | Given | Open | Open | Partially open | 66% |
| 3 | Given | Open | Open | Open | Fully open | 100% |

## Results and Discussions

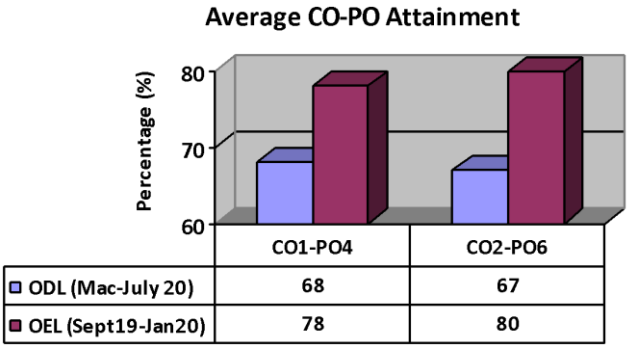


Figure 1: Students average CO-PO Attainment

Figure 1 shows the students' average CO-PO attainment according to ODL and OEL implementation. The percentage of both ODL and OEL was a combination of the reports and also the teamwork and practical skills. The bar chart shows that, the data for OEL was 78% for CO1-PO4 and 80% for CO2-PO6. While for ODL, 68% for CO1-PO4 and 67% for CO2-PO6. From the data, it was found that the percentage differences for CO1-PO4 is 10% while for CO2-PO6 was 13%. It showed that the PO achievement during OEL were higher compared to ODL.

From the result, it showed that most of the students are having some problem with online learning especially for practical based course. Many students did not prefer the laboratory session to be conducted as ODL because it could not be done physically. So, it will affect the development of the students' psychomotor skills and understanding in conducting the experiment.

## Conclusion

It can be concluded that the PO achievement during OEL implementation is better compared to ODL by measuring the students' achievement based on their psychomotor skills. It is also closely related to student's perception on their lack of communication skills throughout the course. From our experiences, the OEL increases the independent learning amongst students by giving them a platform to be innovative and creative in designing and executing their own experiments. The OEL implementation has affected the overall marks scored that represent the students' abilities in designing and conducting the experiment, analysing and interpreting the result and actively participate in the laboratory session.

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# Needs and Potential Use of Augmented Reality in Teaching and Learning Computer Architecture and Organization Course: A Pilot Study

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**Abstract**

Augmented reality generally defined as an enhanced version of the real physical world accomplished through the use of visual elements, sound, or other sensory stimulation delivered through various platforms of technology application. In the Electrical Engineering Department of Politeknik Sultan Haji Ahmad Shah, the Computer Architecture and Organization Course is still being delivered to students via conventional methods of interactive lectures and discussion in the classroom. Despite the fact that blended learning approach has been implied, students' understanding of the course is still at a low level based on their achievement in continuous assessment and final examination. Considering that this course is one of the difficult courses offered to students majoring in Diploma In Electronic Engineering (Technology Computer), the teaching and learning process always ends up with merely teacher centred learning rather than student centred learning. Hence this study aims to identify the needs and potential constructs or topics that are suitable to adopt augmented reality (AR) innovation in teaching and learning of Computer Architecture and Organization Course in order to help in increasing the students' understanding and achievement. Further findings reveal that students and lecturers showed very high perception of the necessity of using AR in Computer Architecture and Organization Course teaching and learning processes. The adoption of AR is expected to become an effective teaching innovation method for lecturers and consequently assist the students to improve their understanding and achievement in the course. Further study is also expected in reviewing the effectiveness and implementation of AR innovation model that will be developed later on.

**Keyword**

Augmented reality, teaching innovation, computer architecture, computer organization

## Introduction

Augmented reality is a new form of technology advancement that enables users to merge real-life sensory experience with perceptions of the digital environment (Azuma, Baillot, Behringer, Feiner, Julier and MacIntyre, 2001). They also suggested that AR is built up by three main characteristics which are (a) real and virtual objects incorporated into reality; (b) collaboration between real and virtual objects, and (c) real-time interaction between real and virtual objects. This strong characteristic in AR allows users to communicate with the virtual objects that are placed within the real scenes around and consequently undergo the most natural interaction between real human and computer (Cai, Wang, & Chiang, 2014).

**Fig.1 Augmented** Reality

Computer Architecture and Organization course is classified as one of the specialisation courses offered to students majoring in Diploma In Electronic Engineering (Technology Computer). This course covers a broad area of knowledge regarding the concepts and principles of computer hardware operation and computer's component logic design. Furthermore, this course also enables students to correctly evaluate the design of a typical logic computer, connection between computers. In short, this course will equip students with the knowledge about basic computer logic circuits that is widely used in computer hardware systems.

## Problem Statement

Looking at the current situation in Malaysia's Polytechnic teaching and learning environment, there are still insufficient counts of teaching aids innovation based on AR technology implementation. Computer Architecture and Organization Course is one of the toughest courses offered to students of Diploma In Electronic Engineering (Technology Computer). Referring to statistics gained from student's achievement during final examination for the Dec 2019 session, 27% of students that enrolled this course were unable to achieve less than 40 marks for the overall assessment evaluation causing them to fail the course. Findings from the questionnaires and interviews conducted to students that failed the subject suggested that they did not understand some of the construct or subtopic from the course that needed further explanation using visual aids in a more realistic way that could be achieved through innovation of teaching and learning methods via AR technology.

## Research Objective

Referring to the problem statement above, this pilot study aims to

i. investigate the needs or any specification requirements for developing a teaching aids innovation using AR.
ii. investigate specific constructs or subtopics in Computer Architecture and Organization Course that need to be implemented in the teaching aids innovation using AR.

## Literature Review

Rapid development of information technology in recent years has resulted in revolutionizing all aspects of life aligned with development of the Industrial Revolution 4.0 (IR4.0). Augmented reality technology as one of the emerging branches of the IR4.0 has been widely studied crossing all sorts of knowledge horizons. From computer games, advertising, business, medical and even educational aspects, ample studies have illustrated that AR technology is suitable to be applied in education (Billlinghurst, 2002). AR is reported to increase the level of student motivation, giving a positive impact on the learning experience especially for weak students (Frietas & Campos, 2008). Research focusing on empowering the teaching and learning methods of welding technology through the use of AR has proven that AR technology through *AugmentedArc* simulation machine is suitable to be used as an improvement of welding technology course (Asni & Fariza, 2018).

Implementation of augmented reality in teaching and learning methodology has opened up a new chapter to educators in choosing a better teaching and learning medium that is more interactive, attractive and effective to students. In fact, the application of augmented reality in teaching and learning has proven to be a catalyst in developing more creative thinking, increase understanding and paradigm shifting of student learning methods (Huda Wahida et al, 2010). Therefore, the study of the necessity and suitability of AR as a teaching and learning aid for Computer Architecture and Organization course is mandatory.

### Research Methodology

The method used in this study is divided into two which are:

i. quantitative method that used questionnaires as the research instrument to investigate specific constructs or subtopic in Computer Architecture and Organization Course that need to be implemented as potential use and contents in the teaching aids innovation using AR. Respondents for this pilot study include 18 students that had failed the course in Dec 2019 session and 5 lecturers that had the experience teaching this course at various sessions

ii. qualitative method that used interviews questionnaires as the research instrument to investigate

the needs or any specification requirements for developing a teaching aids innovation using AR. The interview was conducted between the researcher and 5 lecturers from the Electrical Engineering Department of Politeknik Sultan Haji Ahmad Shah who had the experience teaching this course at various study sessions.

## Summary of Findings and Discussion

A set of questionnaires have been distributed to review students and lecturers' interpretation regarding the needs or any specification requirements for developing a teaching aids innovation using AR.Another set of questionnaire is also distributed among the same target to investigate specific construct or subtopic in Computer Architecture and Organization Course that need to be implemented in the teaching aids innovation using AR

In this research, Likert Scale with five levels of agreements has been applied to respondents. The five points of agreements are: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree. The tendency level of mean score is summarised in **Table 1** while **Table 2** onwards represents the mean score range frequency level for each element investigated in the questionnaires.

**Table 1**

Mean Score Range Frequency Level

| Mean Score Range | Frequency |
|---|---|
| 1.00 – 2.33 | Low |
| 2.34 – 3.67 | Average |
| 3.68 – 5.00 | High |

Sourc: Landell 2001

**Table 2**

Items based on constructs or subtopics in Computer Architecture and Organization Course

General question: I still found out the * subtopic is hard to understand even though after completing the lecture regarding each topic

| No | Item* | Mean | Frequency |
|---|---|---|---|
| 1 | Bootstrapping Process in BIOS System | 4.54 | High |
| 2 | Pipeline techniques in computer architecture operation | 3.73 | High |
| 3 | Arithmetic operation for numbering system in computer architecture | 3.42 | Average |
| 4 | Five-step of pipelined execution process | 3.57 | Average |
| 5 | Arithmetic operation in Binary System components comprise in Arithmetic Logic Unit | 3.20 | Average |
| 6 | Basic process in Arithmetic Logic Unit | 3.65 | Average |
| 7 | Operation of virtual memory in memory organization: Paging and Segmentation | 4.07 | High |
| 8 | Operation of cache memory in memory organization: Associative Mapping, Direct Mapping, Set-Associative Mapping | 3.81 | High |
| 9 | Block diagram of memory address decoder | 3.73 | High |
| 10 | Block diagram of interconnecting system components: Buses and Interfacing | 4.14 | High |
| 11 | Synchronous and Asynchronous data transfer technique | 4.20 | HIgh |

Based on **Table 2**, there is no item that reaches the lowest level of mean scores. It is understandable that the targeted respondents are from the students that already failed in the particular course. None of the constructs are easily understandable by them. Few items from the questionnaire had touched the score at average level due to their preliminary knowledge gained from previous courses which cater the fundamental knowledge of Digital Electronic. While the rest of the construct items had achieved high level frequency of mean score because these knowledges derived from these constructs are theoretically new to them. The constructs that reached a high level of mean scores will be further included as the potential content in the development of teaching aids innovation using AR methods.

**Table 3**
Summary of findings from interview

| Item | Summary of statements |
|---|---|
| Selection of constructs | Focus on construct with high mean scores |
| Reason for construct selection | Students need more understanding regarding those construct |
| Suggested delivery method via AR | Demonstration and simulation |
| Reason for suggested delivery method | Students are unable to imagine most of the process happen in a computer organization and process. Hence the constructs have the potential to be applied in AR |
| Suggestion improvement of current teaching delivery method | Development of teaching aids innovation using AR |

**Table 3** shows a compress summary of findings from the interviews series with lecturers that have experience teaching this course. All of them agreed to make a massive improvement to the current teaching delivery method by developing an innovation of teaching aids using augmented reality technology in order to increase the understanding of students about this course.

## Conclusion

In a nutshell, this pilot study shows that developing an innovation of teaching aids with augmented reality approach is very necessary and significant in order to secure students' understanding of Computer Architecture and Organization course. The development of innovation of teaching aids by implementing the AR technology is expected to become an effective delivery method for lecturers and consequently assisting the students to improve their understanding and achievement in the course. Further study is expected in reviewing the effectiveness and implementation of AR innovation model that will be developed later on.

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# Factors Influencing Student Achievement in DEP30013 Communication System Fundamentals

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**Abstract**

The purpose of this research is to identify the factors that influence students' achievement in DEP30013 Communication System Fundamentals course at the Department of Electrical Engineering, Sultan Haji Ahmad Shah Polytechnic (POLISAS). These factors are student interest, student attitude, student learning methods, polytechnic environment and lecturer teaching. The study population is 120 people comprising third semester students who have taken this course in June Session 2019. The study sample of 35 people was taken at random. The instrument used was a questionnaire. The data collected were analyzed descriptively using Statistical Package for Social Science (SPSS) version 26.0. From the five factors studied, it was found that the mean for the lecturer's teaching factor was the highest at 4.51. Followed by attitude factor (4.39), polytechnic environmental factor (4.36), interest factor (4.27) and student learning method factor (4.25). Based on the research findings, the study found that the teaching factors of lecturers most influence student achievement.

Keywords: Student Achievement Factors

## Introduction

The DEP30013 Communication System Fundamentals course is a compulsory core course for all third semester students who follow the Diploma in Electronic Engineering (Communication) and Diploma in Electrical and Electronic Engineering programs at the Department of Electrical Engineering, POLISAS. This course is credit hours under this department's diploma programme framework which is 3 credit hours.

## Problem Statement

Several internal and external factors can affect a student's excellent achievement in a course. There are many studies that have been conducted on the factors influencing students' achievement. Among the studies conducted by Ahmad, Nurul and Saifullizam (2005) found that the factors influencing the achievement of diploma students in three polytechnics in mastering the subject of Electronic System 1 are factors of attitude, environmental factors and lecturer teaching factors. A study conducted by Muhamad Abdillah and Haleefa (2011) found that the factors of student interest, attitude of students, teachers and facilities of Reka Cipta subjects in schools can influence students' excellent achievement in Reka Cipta subjects.

## Research Objectives

The objectives of the research are as follow:

i. Identify the level of interest factor in the Communication System Fundamentals course.
ii. Identify the level of attitude factor in the Communication System Fundamentals course.
iii. Identify the level of factor of student learning methods on Communication System Fundamentals course
iv. Identify the level of environmental factors of the polytechnic on the

Communication System Fundamentals course

v. Identify the level of teaching factors of lecturers on the Communication System Fundamentals

## Research Questions

The research questions are:

i. What factors have the highest levels?
ii. What factors have the lowest levels?

## Literature Review

According to Omardin (1996), interest is an important factor as a motivator for students to be active in learning activities. Ismail (1992) supports the statement by stating that interest in something or activity will encourage a student to explore further.

In the attitude factor, the findings of previous studies as conducted by Zainun (1991), Masita (2002) and Chong (2003) found that attitude influences student achievement in Mathematics. Pupils who are high on Mathematics will usually complete the work given in the allotted time, attend classes, are eager to learn, ask if there are any doubts and so on. With such an attitude will definitely improve the achievement of the student.

In terms of learning methods, according to Cooper and Foy (1996), more study time does not necessarily provide excellent success. This may be because they do not pay attention to what they read.

Mok Soon Sang (1996) states that a conducive physical learning environment is an important factor in improving the effectiveness of teaching and learning in the learning environment. The physical factors of the place of study include the physical atmosphere in the place of study and the surrounding area.

According to Atan (1993), the teaching style used in the teaching and learning process has a great impact on students' interest and understanding in a single subject taught. In turn these two elements can motivate a person to progress in their studies. The factors that influence students' achievement in polytechnics need to be identified and further action taken as it is important to produce excellent graduates and contribute their ideas to develop society and the country in the future.

## Methodology

This research uses a questionnaire instrument. Questionnaire technique is a popular data collection technique by holding questions or items that make it easier for respondents to give answers (Mohamad Najib, 2003). The use of questionnaires is a data collection tool that is widely used by researchers. This is due to the fact that questionnaires are able to collect and collect data in a structured and standardized manner. In addition, the instrument is easy to administer, saving the researcher's time, mind and money during data collection.The questionnaire of this study consists of the items related to the factors that influence student achievement in the course of Communication System Fundamentals. These factors are divided into five types, namely interests, attitudes, student learning methods, polytechnic environment and lecturers' teaching. The questionnaires consist of 24 items in the form of a 5-point Likert scale in the table 1 below:

**Table 1**
Likert Scale

| Method | Scale |
|---|---|
| Very satisfied | 5 |
| Satisfied | 4 |
| Neutral | 3 |
| Unsatisfied | 2 |
| Very Unsatisfied | 1 |

## Data Analysis

The data of this research consists of two parts, namely Part A is about the Student Achievement and Part B is about the items related to the factors that influence students' achievement in the course of Communication System Fundamentals.

Part A Table 2 shows the achievements of the respondents in the Communication System Fundamentals course. The level of honors achievement recorded the highest value of 51.4%. Meanwhile, the second highest passing achievement level is 40% and the excellent level is only 8.6%.

**Table 2**
Student Achievement

| Grade | Frequency (N) | Percent (%) | Percent (%) | Level of Achievement |
|---|---|---|---|---|
| A | 3 | 8.6 | 8.6 | Excellent |
| A- | 7 | 20 | 51.4 | Credit |
| B+ | 7 | 20 | | |
| B | 4 | 11.4 | | |
| B- | 4 | 11.4 | 40 | Pass |
| C+ | 5 | 14.3 | | |
| C | 2 | 5.7 | | |
| C- | 2 | 5.7 | | |
| D+ | 1 | 2.9 | | |

Part B described the data obtained were analyzed descriptively by obtaining a mean value using SPSS 26.0. To facilitate the process of data analysis, researchers have used the interpretation of the mean score presented by Wiersma (1995) as a reference to the interpretation of the mean score as in the table 3 below.

**Table 3**
Score Interpretation Min

| Mean Score | Level |
|---|---|
| 1.00 – 2.33 | Low |
| 2.34 – 3.67 | Moderate |
| 3.68 – 5.00 | High |

**Student Interest Factors**

**Table 4**
Mean Analysis of Interest Factors

| Factor | N | Min | Level of Interpretation |
|---|---|---|---|
| Interest | 35 | 4.27 | High |

Table 4 shows the results of mean analysis of items related to interest factors. The mean value of the interest factor is 4.27 and this value is high.

**Student Attitude Factors**

**Table 5**
Mean Analysis of Attitude Factors

| Factor | N | Min | Level of Interpretation |
|---|---|---|---|
| Student Attitude | 35 | 4.39 | High |

Table 5 shows the results of the mean analysis of the items related to attitude factors. The mean value of the attitude factor is also high at 4.39.

**Student Learning Method Factors**

**Table 6**
Mean Analysis of Student Learning Method Factors

| Factor | N | Min | Level of Interpretation |
|---|---|---|---|
| Student learning method | 35 | 4.25 | High |

Table 6 shows the results of the mean analysis of the items related to the factors of student learning methods. The mean value is 4.25 and this value is high.

**Polytechnic Environmental Factors**

**Table 7**
Mean Analysis of Polytechnic Environmental Factors

| Factor | N | Min | Level of Interpretation |
|---|---|---|---|
| Polytechnic Environmental | 35 | 4.36 | High |

Table 7 shows the results of the mean analysis of items related to polytechnic environmental factors. The mean value is 4.36 and this value is high.

**Lecturer Teaching Factors**

**Table 8**
Mean Analysis of Lecturer Teaching Factors

| Factor | N | Min | Level of Interpretation |
|---|---|---|---|
| Lecturer Teaching | 35 | 4.51 | High |

Table 8 shows the results of the mean analysis of the items related to the teaching factors of the lecturers. The mean value is 4.51 and this value is the highest.

**Research Findings and Conclusion**

Of all the aspects studied, the teaching factor of lecturers recorded the highest mean level of 4.51. Then followed by attitude factor 4.39, polytechnic environmental factor 4.36 and interest factor 4.27. The student learning method factor recorded the lowest mean level of 4.25. Overall, all factors have high mean value interpretations.

The results of this research can be concluded that the teaching factor of lecturers is the factor that most influences the excellent achievement of students in Communication System Fundamentals course. While the factor of student learning method recorded the lowest mean value, and this shows the least influence on student outstanding achievement. The results of this study are supported by Muhamad Abdillah and Haleefa (2011) who found that the teacher factor recorded the highest mean value.

In this regard, the teaching of lecturers needs to be further enhanced so that the achievement of excellent students will increase further in the future. In addition, students' attitude towards this course should also be given attention by always providing advice and motivation. Therefore, the final result can conclude as a figure 1 Mean scores and level of interpretation factor.

**Research Recommendations**

This research examines the factors that influence the outstanding achievement of students in the DEP30013 Communication System Fundamentals course. This study is also limited to third semester

students who follow the Diploma in Electronic Engineering (Communication) and Diploma in Electrical and Electronic Engineering programs in the Department of Electrical Engineering, POLISAS June 2019 session. However, further research can be conducted by expanding the population involving all polytechnic students.

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VSTL40

# ERD Plus as A Solution for Teaching and Learning of Database System Course

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**Abstract**

Nowadays, the 'chalk and talk' learning approach has nearly been replaced by online teaching and learning methods all over the world. In two decades, the Internet has changed the teaching and learning paradigm resulting in better learning outcomes while combating the reduction of resources, especially in tertiary level education (Nguyen, 2015). The approach of online and blended learning has been embedded in order to improve the quality of teaching and learning accordance to the Malaysia Education Development Plan 2015-2025 (Higher Education) which focuses on online learning as an important component in higher education. The use of online modeling platform of ERD Plus has given the opportunity to students to learn by themselves at their preferred time. The study aims to focus on the effectiveness of using ERD Plus, a web-based modeling platform as a learning tool for topic Database Model in DEC40073 Database System course. 50 students from Electrical Engineering Department of Politeknik Sultan Haji Ahmad Shah, Kuantan Pahang who took DEC40073 Database System course during December 2019 session had been selected as respondents. The results of the study show the increasing marks of students' assessment after using the ERD Plus simulation in related topics showing that the experience they gained from the online modeling platform prepares them to answer the assessment question accurately.

**Keyword:** Online learning, blended learning, database model

## Introduction

Nowadays the demand of using online learning tool has grown extensively as various online learning platform made available through the Internet. Many scholars have agreed that performing teaching and learning through online over the Internet has brought many benefits and effectiveness both to students and educators. The approach of online and blended learning has been embedded in order to improve the quality of teaching and learning accordance to the Malaysia Education Development Plan 2015-2025 (Higher Education) which focuses on online learning as an important component in higher education. Moreover, online learning also supports the professional development of students through students centered learning activities via online platforms (Bowen, 2013). Thus, the use of online modeling platform of ERD Plus has given the opportunity to students adapting the student-centered learning concepts by learning by themselves at their preferred time and space.

To ensure that the quality of teaching and learning is constantly improved by time, researchers have conducted a study on the effectiveness of using an online modeling platform for teaching and learning of DEC40073 Database System course. In order to achive the effectiveness of using ERD Plus, several topics in the Database System course selected as targeted topics. The topics are Entity Relationship Diagrams, Relational Data Model and Physical Data Model. These topics were selected based on the poor achievement of students' assessments and understanding about that particular topics.

ERD Plus is a web-based database modeling software developed by Loyola University Chicago in partnership with Aptitive, a data analytics consulting firm based in Chicago, Illinois from the United States. This web-based modeling platform has been chosen as an online learning platform due to its features as an open source web-based application that does not acquire any installation to student's workstation either in institution facilities or the student's personal computers. The web-based features also enable students to perform online learning by accessing the platform using their mobile devices from anywhere at any time. Students can manipulate all the modeling tool provided through the website

to design their own Entity Relationship Diagrams, Relational Data Model and Physical Data Model.

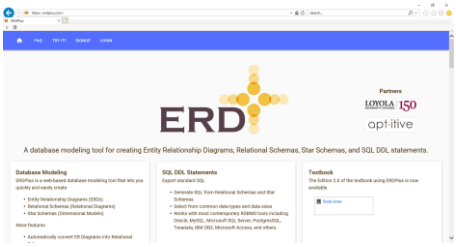


**Fig.1 ERD** Plus Interface

## Problem Statement

Based on the items analysis of continuous assessment of DEC40073 Database System, more than 50% of students from Diploma In Electronic Engineering (Technology Computer), Electrical Engineering Department of Politeknik Sultan Haji Ahmad Shah who enrolled in this course during June 2019 session had shown weaknesses in the concept of Database Model and Design. Most of them were not able to design the correct model based on sample problems given through the assessment. Findings from the questionnaires and interviews conducted to them, 75% of the respondents did not like to ask the lecturer if they did not really understand the concept of Database Model, Furthermore, around 83% of them were not interested in finding other references on their own and consequently resulted in poor achievement of the continuous assessment.

## Research Question

This research has been conducted based on two main question:

i. Does the use of ERD Plus as online learning tool increase or decrease student's achievement in Database System course?
ii. Is ERD Plus suitable to be used as an online learning tool based on these four specifications: user friendly, interactivity, user handling and suitability?

## Research Objective

Generally, the aim of this research is to find out the effectiveness of using the ERD Plus which is an online learning platform to increase students' understanding and achievement in the continuous assessment of DEC40073 Database System course. The objectives of this research are to:

i. Evaluate the effectiveness of online learning using the ERD Plus based on student's achievement in the continuous assessment.
ii. Evaluate students' interpretation regarding four elements of the interfaces designed in ERD Plus as an online learning platform.

## Literature Review

In recent years, technology in the field of education has evolved over time. The use of computers has become increasingly important to improve the quality of teaching and learning. Computer applications today are not only focused on using the computers and software, but also integrated in the teaching and learning of certain subjects through ample of online learning platforms available through the Internet. Privileges and facilities provided by online learning platform can enhance students' achievement in learning in the classroom (Azelin Mohamed Noor, 2012).

Scholars agreed that the use of online learning's platform by educators can certainly reduce the challenge for the educators in balancing teaching loads. For excellent students, they have extra time and the opportunity to relax while for weak students they have the opportunity to repeat learning several times (McGinnis, 2005).

All Polytechnic Institutions in Malaysia are no exception in laying the policy for teaching and learning to be implemented in the form of online and blended learning. This has been included in the e-learning policy that was published in 2012. The Malaysian Education Development Plan (Higher Education) 2015-2025 launched requires all higher educational institutions to carry out teaching and learning based on online and blended learning. Therefore, teaching and learning based on online learning must be

carried out not only to fulfill the policy of the institution itself but also to meet the vision and aspirations of the national education.

## Research Methodology

The method used in this research is divided into two which are:

i. quantitative method that used questionnaires as the research instrument to evaluate student's interpretation regarding four elements of the interfaces designed in ERD Plus.
ii. data collection methods through Database Model topic related assessment tests that have been conducted before and after using the ERD Plus web-based design platform.

This study was conducted by targeting a group of students who had enrolled the course which are selected from 50 students of Diploma In Electronic Engineering (Technology Computer) from Electrical Engineering Department, Politeknik Sultan Haji Ahmad Shah, Kuantan Pahang who enrolled DEC40073 Database System course during December 2019 session.

## Summary of Findings and Discussion

### a) Questionnaires

Researchers have prepared a set of questionnaires based on QUIS (Questionnaire for User Interface Satisfaction) developed by Chin et al (1988). The original QUIS has been altered and modified to meet the research questions and eventually evaluates student's interpretation regarding four aspects of the interfaces designed in ERD Plus as an online learning platform to master the topic of Database Model in DEC40073 Database System course.

In this research, Likert Scale with five levels of agreements has been applied to respondents. The five points of agreements are: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree. The tendency level of mean score is summarised in **Table 1** while **Table 2** onwards represents the mean score for each element inspected in the questionnaires.

**Table 1**
Mean Score Tendency Level

| Mean Score | Level of Tendency |
|---|---|
| 1.00 – 2.33 | Low |
| 2.34 – 3.67 | Medium |
| 3.68 – 5.00 | High |

Source: Landell 2001

**Table 2**
Items for user friendly element

| No | Item | Mean | Level of Tendency |
|---|---|---|---|
| 1 | User friendly display | 4.30 | High |
| 2 | Easy accessible menu | 3.25 | Medium |
| 3 | Easy folder navigation menu | 2.54 | Medium |
| 4 | Helpful option to navigate between menu | 3.77 | High |
| | Total Score | 3.46 | Medium |

Based on Table 2, there are certain items that show mean scores at medium level. This situation happens most probably by lack of experience in using ERD Plus and a modeling tool. As a whole mean score for user friendly elements is medium which is 3.46

**Table 3**
Items for interactivity elements

| No | Item | Mean | Level of Tendency |
|---|---|---|---|
| 1 | Interactive menu for each modeling phase | 4.04 | High |
| 2 | Easy to manoeuvre modeling canvas | 3.58 | Medium |
| 3 | Diagram can be change into differents data model accordingly | 4.17 | High |
| | Total Score | 3.93 | High |

Findings from Table 3 shows a mean score of 3.93 for the interactivity element which clearly illustrates that the ERD Plus modeling tool that had been developed are interactive in nature for students to practice online learning.

**Table 4**
Items for procedure handling Element

| No | Item | Mean | Level of Tendency |
|---|---|---|---|
| 1 | Easy to handle Entity design and setting | 3.85 | High |
| 2 | Clear option of Attribute preferences | 3.70 | High |
| 3 | Clear option of Relationship cardinality | 4.07 | High |
| 4 | Various types of Relationship notation | 4.20 | High |
| 5 | Easy to understand SQL DDL statements | 3.53 | Medium |
| | Total Score | 3.87 | High |

As for the procedure handling element, with a mean value of 3.96 proves that the web-based application produced is beneficial and helpful for the students in mastering the concept of Database Model Design.

**Table 5**
Items for suitability as a learning tool Element

| No | Item | Mean | Level of Tendency |
|---|---|---|---|
| 1 | Helpful online Data Modeling platform | 4.04 | High |
| 2 | Increase understanding of Database Model | 3.88 | High |
| | Total Score | 3.96 | High |

Lastly for the suitability of ERD Plus as a learning tool element, the overall item has recorded a high score with the overall mean value which is also the highest at 3.96. Thus, it shows that students are very keen in using the web-based platform in their online learning journey.

b) **Post Test and Pre-Test**

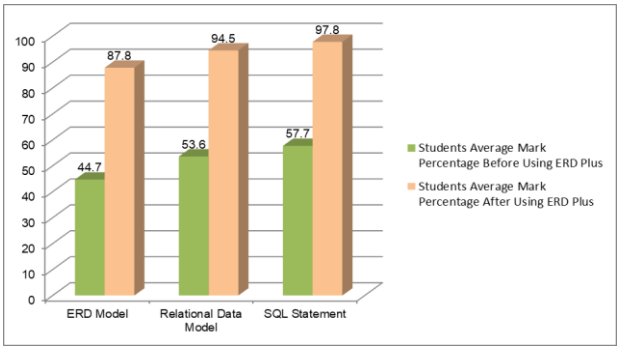


**Fig.2 Pre** Test And Post Test Average Marks

Based on **Fig. 2**, we can see a clear significant increase for students' average marks in Post Test for all topics related to Database Model compared to Pre test that were obtained by the students before using ERD Plus as a modeling tool. This result also proves that there is an improvement of understanding related topics among students after applying ERD Plus Database Modeling tool via online learning.

## Conclusion

This research shows that applying an online learning approach using ERD Plus platform by students can increase their percentage of understanding in certain topics of DEC40073 Database System course. Furthermore, the research also proved that online learning approaches can have a positive impact and effective impact on students' academic achievement because the experience they gained from online learning platform prepares them to answer the assessment question accurately.

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# Student Centered Learning: Teaching Strategies

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**Abstract**

In education, appropriate teaching method is very important to determine the students' motivation during teaching and learning process. Student-centered learning is one of the key factors of a memorable educational journey. In this article, we have reviewed about the Student-Centered Learning (SCL) Teaching Strategies that seek to explore the methods, techniques or approaches relevant to student-centered learning. The student-centered learning principle and the contrast between student-centered learning and lecturer-centered teaching will be defined in this study. The methods or techniques discussed from the study of problems or issues related to teaching and learning. In addition, the discussion will focus on appropriate contemporary teaching methods to be applied with the concept of student-centered learning. Among the student-centered learning methods that are meant are cooperative methods, group approaches, discussion techniques, problem solving and project-based learning.

## Introduction

The Malaysian education system had gone through many transitions in the past decades. Most universities and polytechnics worldwide are going through several changes. This means ensuring that students excel in finding a good job after graduated from college and satisfying the requirements set by their employers. This is because most parties point the finger at the education system for failing to produce quality graduates and subsequently getting jobs. According to Arco-Cobbah (2004), the Teacher Centered Learning approach is usually practiced in universities and claims that it is not enough to prepare students to face the job market. So, a new approach is needed to be taken which is Student Centered Learning.

In line with that, Malaysia's Ministry of Higher Education Polytechnic has taken steps from the June 2010 Session to implement a curriculum focused on learning outcomes for students, namely using the Student-Centered Learning (SCL) approach. By applying OBE teaching and learning concepts in the Ministry of Higher Education Malaysia's polytechnics, it is hoped that the graduates produced would be in line with the country's needs and requirements as well as comparable to graduates from other higher learning institutions. According to Mursheed and Yusef (2004),

"*OBE is considered to be a learner-centered, result-oriented education system which is based on the belief that individuals have the capacity to learn, as well as to demonstrate learning after having completed an educational activity. Its main aim to equip all learners with the knowledge, competence and orientation needed for success after they leave school."*

Teaching and learning should be based on a continuous process of interaction between students and lecturers. This interaction process can be student-centered, or lecturer centered. Based on teacher-centered learning (TCL), lecturers are fully responsible for determining learning objectives, designing learning assignments and selecting learning resources for their students. On the other hand, in student-centered learning (SCL), students are 'autonomous' and they are fully responsible for determining the direction of the learning process. The learning process and direction from TCL to SCL takes time. The process will increase according to the age and maturity of the students.

## Concept of student-centered learning

Student-centered learning is a term widely used today to describe and understand the teaching and learning process that takes place in and outside the classroom. There are many ideas and descriptions that can be made about SCL. However, it leads to a basic idea that is students. SCL can be defined as a discipline that involves interaction between teams of students experiencing creative learning that will be applied in real situation.Student-centred learning. SCL is a learning approach during which students generate learning opportunities and reconstruct knowledge dynamically in an open-ended learning environment (Lee & Hannafin, 2016).

In the traditional approach to higher education, the burden of communicating course material resides primarily with the instructor. In student-centered instruction (SCI), some of this burden is shifted to the students (Felder and Brent, 1996). SCL is a comprehensive learning approach that includes techniques such as actively transforming the learning experience, solving problems that require critical and creative thinking, involving students in simulations and the role of using self-paced techniques and cooperative learning. Indirectly SCL provides students the opportunity to study independently. SCL will increase motivation, comprehension and students will be more interested in the lessons taught. Unlike Teacher Centered Learning, SCL strategies contain a variety of training methods that can build students' social skills. When students learn in different ways and applying various methods will increase the likelihood that students will be exposed to at least one of the methods implemented. The use of only one method may be boring for students. Keep in mind that different students and different training goals require a flexible approach. This learning approach emphasizes the active involvement of students in the teaching and learning process.

Students play important role in planning learning, conducting in-depth research, evaluating work outcomes, as well as interacting with instructors, students and other sources of information in their learning process. In this case, the lecturer only acts as a mentor or facilitator in the learning process. Thus, such a learning environment will be able to form a highly motivated student personality, always have a high curiosity instinct, able to manage time wisely, and skilled in finding information. Thus, student-centered learning is the most appropriate and effective learning teaching strategy to cultivate soft skills among students.

## Difference between Lecturer-centered learning and Student– centered learning

The concept of student-centered learning can be further clarified through a comparison between student-centered learning approaches and lecturer-centered learning in terms of student and teacher roles, as well as features of teaching-learning involving the use of learning-based approaches, methods and techniques. The change in perspective suggested here is that the focus should be on learning and not on teaching to expand the experience of students whether they are studying in polytechnic or university. Briefly, the differences between lecturer-centered learning approach and student-centered teaching from several aspects of teaching and learning such as exploration of knowledge and information, lecturer role, learning assessment, type of motivation possessed by students in the learning process and types of learning perspectives for students.

## Student-centered learning strategy

Student-centered learning (SCL) identifies students as the owners of their learning. According to Suhaida Abdul Kadir (2006), learning strategy refers to the special characteristics of a student to see, interact and respond in a learning environment. Students adopt an active role in learning by assuming responsibility to organize, analyze, and synthesize information rather than acquire content from the teacher (Lee & Hannafin, 2016). The teacher's role is to support students in the learning process and scaffolding the learning experiences. This implies that a student is accountable for his own learning and, by the different teach ing methods, the teacher must play an important role as a stimulant, motivator and facilitator. Here, listed among the student-centered learning strategies include:

## Cooperative Learning

A cooperative approach is learning that involves students working together to learn and take responsibility for each member of their group (Suhaida Abdul Kadir, 2002). Cooperative learning is also

a teaching and learning strategy where students help each other in small groups with shared goals. Cooperative methods take into account the cognitive, behavioral, emotional and social aspects of students. According to Devisch et al., (2019), cooperative learning can be achieved only through good supervision and aptitude of the tutors to handle the situation. Thus, teachers must explain specific procedures for handling their respective groups. The target is the maximum level of learning not only for yourself, but also for other friends. Five basic elements in cooperative learning:

i. positively dependent on each other
ii. interact face to face
iii. individual accountability for self-learning
iv. cooperative skills
v. group processing

**Group Approach**

The shift toward student-centredness through the use of interactive small group activities based on primary resources appears to have significantly enhanced students' learning in this case (Barraket, 2005). Group learning is based on the principles of social psychology and group dynamics where group activities should have a purpose. Teachers need to choose group teaching procedures that can help students achieve specific objectives, identify appropriate topics for group work and actively involve students in groups. Effective group work will exist if individuals are given responsibilities and the spirit of teamwork should be nurtured. In addition, the advantage of group teaching is that it enables students to identify, analyze and solve problems cooperatively.

**Discussion Techniques**

Discussion is a group activity where students interact with each other and discuss an issue or problem. Important features, students have the opportunity to submit issues, opinions and ideas on a topic and the teacher and students will make a conclusion at the end of the discussion session. Students will give a reaction or response to a topic or problem and the discussion will be conducted under the control of the teacher. Discussions can be implemented in all subjects and any classroom situation and the main purpose of the discussion is to encourage students to develop self-skills in presenting arguments, opinions, questions and problem solving (Azela Abdullah, 2009).

**Problem Solving**

Tarhan and Acar-Sesen (2013) describe problem-based learning (PBL) as an active learning approach which was first developed in medical education. Before students start learning, they are acquainted with a problem and then have to learn some new knowledge about the topic in order to solve the problem. Problem solving is a mental process that requires one to think creatively and critically in finding alternative ideas and specific steps to overcome the shortcomings and subsequently solve the problems encountered. It is also a way of using the power of thought to handle a difficult situation, overcome obstacles, produce something desired, and solve something complicated. An important aspect to know is that the purpose of problem solving is to enable students to think rationally, logically and objectively when facing problems, to enhance students' creative and critical thinking and its advantage is to create a student-centered learning process and result in active student involvement in lessons. Through PBL students learn to work in groups, become partners in teaching/ learning process where they can work successfully, can deal new situations and develop life- long learning skills (Sheeba, 2019).

**Project Based Learning**

According to Kokotsaki et al., (2016), project-based learning is an extended piece of work in which the learner is involved in in-depth research and/or development leading to detailed understanding of the topic and ability to apply learning.

A project is a method in which students conduct an experiment or activity in a real situation and produce something. It is an activity carried out by students inside or outside the classroom and they learn through the process of producing something. The purpose of the project method is to develop students 'creativity and expand the students' experience while carrying out the project. This also helps students work together and instill a positive attitude in producing a project, developing learning through the experience of performing activities. The project to be made should be meaningful and beneficial to students. The materials needed for the project should be readily available and the project should be in line with the

learning objectives. The advantage of the project method is that students achieve success and satisfaction if they can complete the project and the knowledge gained is permanent and effective.

## Conclusion

The purpose of this research is to provide understanding and knowledge on student-centered learning (SCL) as SCL has very good implications for the development of education today, especially in the polytechnics of the Ministry of Higher Education Malaysia. This is because, this SCL emphasizes the aspect of student involvement compared to traditional methods centered on lecturers. Through SCL students are increasingly daring to give ideas and views and actively engage in learning. Lecturers only act as facilitators in learning using this method. Next, the graduates produced will be in line with the needs and requirements of the country and comparable to graduates from other institutions of higher learning.

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# Covid-19 Pandemic: The Challenges that Malaysian Secondary School Students Faced with Online Learning

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**Abstract**

Most schools in Malaysia had been temporarily shut down as a consequence of the Covid-19 pandemic. This has changed the norm of education in schools dramatically whereby most teaching and learning were done on digital platforms. With this unplanned and sudden transition from traditional classroom settings to online learning, some are wondering whether these students could adapt to this transition. Therefore, this study focuses on challenges faced by Malaysian secondary school students with online learning.

**Keywords**. Online learning, Covid -19 pandemic, secondary school students

## Introduction

Covid-19 outbreak has spread all over the world including Malaysia. The Movement control order (MCO) and Conditional Movement Control Order (CMCO) were implemented by the Malaysian government to curb Covid-19 in this country. As a result of that, most schools in Malaysia were temporarily shut down for almost 4 months. Teachers, concerned about completing the syllabus, transitioned from face-to-face learning to online learning via digital platforms. Singh and Thurman (2019) defined online learning as education being delivered in an online environment through the use of the internet for learning and teaching. In other words, internet connectivity is used to enhance the learning environment in online learning. However, online learning had been challenging. Fully online learning during MCO and CMCO was Malaysia's first experience involving a nationwide learning on such platform. Therefore, it is more likely that many challenges were encountered.by Malaysian secondary school students. This study was conducted to identify the challenges that Malaysian secondary school students faced with online learning.

## Methodology

An online survey was conducted to identify the challenges faced by secondary school learners in online learning. The survey comprised questionnaires which were distributed to secondary schools' students in Malaysia from March 15 to May 25, 2020 that was almost two months after schools were forced to close due to Covid-19 pandemic. The survey form was organized into several sections that include socio-demographic information of respondents, information related to internet connectivity for online learning, identification of problems faced by respondents in online learning and respondents' acceptance and readiness of online learning. The information obtained and data collected were processed and analysed using descriptive statistics such tables and percentages.

## Results and Discussion

The survey was conducted among 3,584 secondary school students throughout the country. Respondents were from various locations where 66.52 per cent were from urban sites, 27.34 per cent from rural sites and 6.14 per cent, from remote areas. This composition was reflective of a fair

representation of the population. The respondents who participated in the survey represented 54.21 per cent of the low-income earners (B40), 31.03 per cent medium income earners (M40) and 14.76 per cent high income earners (T20). In term of racial breakdown**,** the sample consisted of 78.13 per cent Malays, 9.04 per cent Indians, 7.81 per cent Chinese while the remaining 5.02 percent included other races.

A total of 92.80 per cent of the respondents stated that their schools conducted online learning while 7.20 per cent said that their schools did not conduct online classes. In terms of accessing the online learning platform, one needs stable internet connection. However, the survey showed that 12.05 per cent of the respondents did not have access to the internet while the majority (85.30 per cent) came from B40 families followed by 13.10 per cent from M40 families and 1.60 per cent from T40 families. The findings suggest that not all students were able to participate in online learning conducted by their schools especially those who came from low income families because they had no internet access. Among respondents who had internet access, 9.2 percent of the respondents said their access was slow while 63.6 percent reported that they had moderate internet speed. Only 27.2 percent said that they had a strong internet connection.

## Student feedback on Online Learning Enjoyment

Students were also asked to respond whether they enjoyed their online classes. A slim majority of respondents (50.60 percent) stated they did so. The factors stated are displayed in Table 1. From the students' responses, the main contributing factor (21.12 per cent) is they experienced a new learning environment. For most students, this is their first-hand experience as online students and the findings show that many of them had positive experiences with online learning.

Another reason that led to this enjoyment was the flexible learning time and space (17.47 per cent). This was mostly due to the fact that with online learning, they were not bounded by time and space. Also, online learning allowed for students to learn at their own learning pace, set their own schedule and participated in classes from anywhere. This finding is consistent with the argument made by Poole (2000) that online learning provides flexible ways to learn without time and place constraints. Moreover, Petrides (2002) asserted that flexible learning environment is the strength of online learning.

Another factor that made students enjoyed learning online was that they could repeat the lesson if necessary, to get a better understanding (16.46 percent). With online learning, the students were able to review and repeat the notes or exercises as many times as needed. Other factors included easy access to information (16.29 percent), conducive learning environment (12.49 percent), no school-presence requirement (8.59 percent), and finally eased in asking the teacher questions without embarrassment or fear (7.58 percent).

**Table 1**

Student feedback on Online Learning Enjoyment

| Reasons for students' enjoyment over online learning | Per cent |
|---|---|
| Experience new learning environment | 21.12 |
| Flexible learning time and space | 17.47 |
| Possibility repetition if necessary | 16.46 |
| Easy access to information | 16.29 |
| Conducive learning environment | 12.49 |
| No school presence requirement | 8.59 |
| Ease in asking the teacher questions without embarrassment or fear | 7.58 |

## Student Feedback on the Lack of Enjoyment in Online Learning

While a slim majority of the respondents enjoyed online classes, 49.40 per cent said that they did not. As shown in Table 2, the main reason was they were not being able to have direct interaction with their teachers (27.96 per cent). These findings suggested that most students were more comfortable learning in a physical classroom setting where face-to-face interaction with their teachers was possible. The lack of direct interaction with friends (18.48 per cent) was another factor that contributed to not enjoying studying online learning. These findings suggested that most students viewed that interaction among friends in the classroom as vital to the learning process. Stodel et al. (2006) reported that students felt that the bond with other students in online classes was not as strong as that of face-to-face classes. The results obtained concur with the previous work carried out by Pozgaj & Kneevic

(2007) where the lack of direct interaction was seen by students as the biggest disadvantage with online learning. Moreover, Howland & Moore (2002) stressed that the communication between instructor and students and between students was an important issue. The students felt unconfident with supervision and guidance when the feedback from instructions was delayed. Next, 16.86 per cent said that another reason was they took longer time to complete assignments.This was probably due to the fact that they took extra time to study and understand online lessons on their own. Other reasons included having poor internet connectivity (15.33 per cent), working long hours on the computer (13.88 per cent) and sharing digital devices with other family members (7.49 per cent).

**Table 2**
Student Feedback on the Lack of Enjoyment in Online Learning

| Reasons causing students not to enjoy over online learning | Per cent |
|---|---|
| No direct interaction with teachers | 27.96 |
| No direct interaction with friends | 18.48 |
| Taking longer time to complete assignments | 16.86 |
| Poor internet connectivity | 15.33 |
| Working long hours on the computers | 13.88 |
| Need to share digital devices with other family members. | 7.49 |

## Student feedback on Online Learning-Stress

Another critical finding of the survey was that almost half of the respondents (44.50 per cent) reported being stressed when studying online. The reasons causing them stressed in studying online are presented in Table 3. The survey showed that the main factor attributed to this was difficulties in understanding lessons (26.37 per cent). Other factors included being overburdened with work (22.14 per cent), poor internet connectivity (16.62 per cent), unconducive learning environment (14.54 per cent), working long hours on the computer (13.39 per cent) and the need to share digital devices with other family members (6.94 per cent). These responses were similar to the reasons given for not enjoying online classes, thus contributing to their stress levels.

**Table 3**
Student feedback on Online Learning-Stress

| Reasons causing students stress over online learning | Per cent |
|---|---|
| Difficulties in understanding lessons | 26.37 |
| Overburdened with work | 22.14 |
| Poor internet connectivity | 16..62 |
| Unconducive learning environment | 14.54 |
| Working long hours on the computers | 13.39 |
| Need to share digital devices with other family members. | 6.94 |

In assessing the students' readiness to accept online learning as another form of learning, the survey found that majority of the students (71.60 per cent) were ready to learn online as a new norm in the current times. However, 28.40 per cent said they were not ready for online learning. This is a significant finding because Dangol and Shrestha (2019) emphasized that there is a positive relationship between students' readiness and educational achievement among school students. They stressed that the absence of learning readiness spoils the teaching learning process.

## Future Research

This research focused on the challenges that Malaysian students faced with online learning during the pandemic. Future research should look at the challenges that Malaysian school teachers faced with online learning during the pandemic. The findings of the teacher feedback would be useful for improving online teaching for the teachers, and invariably, online learning for the students. Such a research is very much needed at this point in time.

## Conclusion

The findings of this study show that many Malaysian secondary school students struggle with online learning. They face some difficulties in adapting to this new normal of learning. Teachers also play an important role in online learning. Teachers must be creative enough to put online lessons in an effective way to get students engaged with their learning progress. Yengin et al. (2010) emphasized that active learning, continuous motivation and feedback are some learning and teaching strategies that can be implemented to make sure active involvement and participation of students during and after online classes.

Despite the challenges that Malaysian secondary school students face with online classes, a substantial number of them are ready to accept online learning as another form of learning. This is a key factor in ensuring the effectiveness of online learning. As highlighted by Dangol and Shrestha (2019), students' learning readiness contributes highly to students' learning achievement.

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VSTL43

# Feedback on the Usage of Flipgrid as Platform for Short Video Assignment

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**Abstract**

The world has been surprised by the COVID-19 pandemic. Teaching and learning activities have changed tremendously. Alternative online platforms have been used to cater to the need in assessing the affective domain activities such as presentations, discussions and group projects. Therefore, this paper intends to share the feedback on the approach of online assessment for the affective domain using Flipgrid as a platform for short video assignment. One of the amazing and useful online apps for video assignment that captured students' verbal responses. This app helps the students to take part in the learning process, especially in the affective domain. The process of learning to portray an idea or concept, and to convert into own understanding is the learning outcome. This paper explains the students' feedback on the usage of Flipgrid for short video assignment. Feedback process was carried out by using questionnaires to gauge students' satisfaction and their experience. The advantages of Flipgrid are easily downloadable by any user to a mobile device.

**Keywords:** Flipgrid, Affective domain, online assessment, video assignment

## Introduction

Before this pandemic surfaced, the student's individual or group presentation was conducted face to face. Since no physical class is allowed to be conducted during the period, an alternative platform must be used to replace the face to face assessment. With the students scattered in different regions, and some with the limited access for suitable video recording and editing gadgets, an appropriate online platform for video assignment must be considered. It must be accessible without any cost involved and easy to use on mobile devices such as mobile phones or tablets. The purpose of finding a suitable online platform is to avoid the students stress out in completing the video assignment. When students feel that way, creativity will cease. Thus, by creating an enjoyable learning experience during the process of video making, the learning outcome can be achieved without hassle. Flipgrid is a free and accessible social learning platform that allows students to creatively record their responses verbally to the assigned questions (Stoszkowski, Hodgkinson, & Collins, 2020).

## Method and Results

Details on the assignment, as shown below:

*a. Type of assignment*

In April 2020, 83 diploma level students for the subject of production management at Faculty of Mechanical Engineering, Universiti Teknologi MARA Johor, Pasir Gudang Campus have been assigned to short video assignment as shown in Figure 1. The duration of the assignment was two weeks.

*b. Learning outcome*

*Apply Operation Management tools and techniques for decision making* with affective domain level of A3 (Valuing).

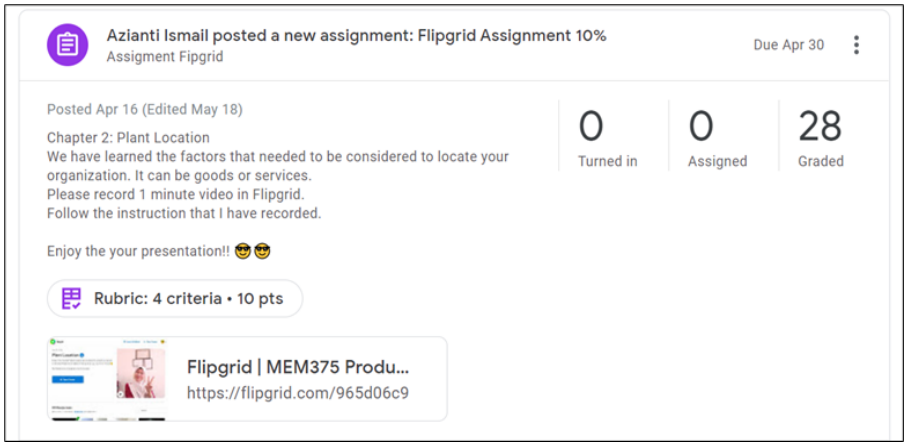


**Fig. 1** Information on the short video assignment

*c. Submission of the video on Flipgrid*

Students recorded their short video by using a mobile phone with a camera. After that, the students uploaded the videos on Flipgrid. Figure 2 shows the thumbnails of the submitted videos.

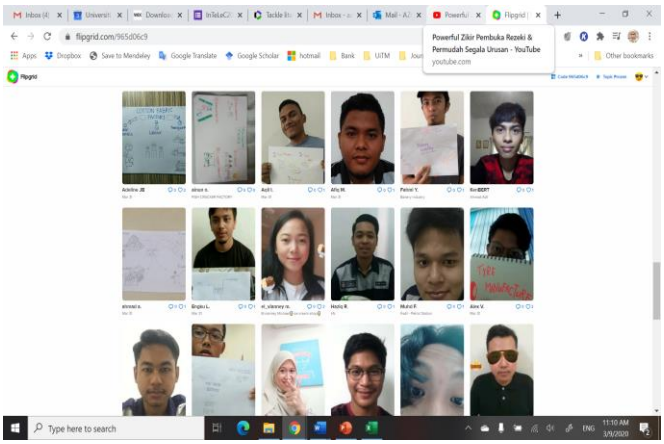

**Fig. 2** Thumbnails for uploaded videos

*d. Questionnaire for the feedback*

After completing the assignment, a questionnaire was applied to gauge the students' satisfaction on Flipgrid usage. The questionnaire comprises of six statements with three answers to choose which are agree, neutral and disagree, as shown in Figure 3.

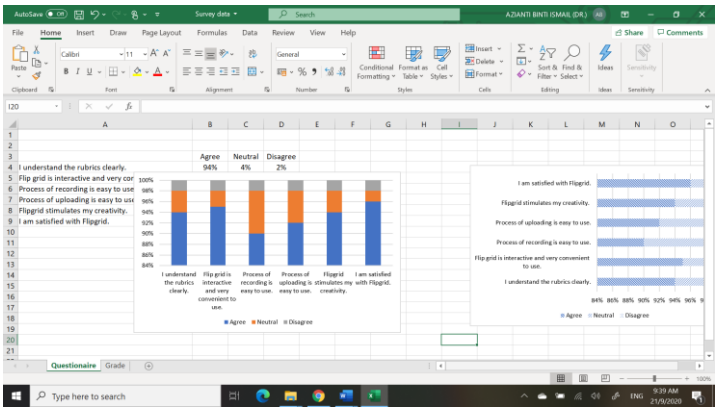

**Fig. 3** Results from the questionnaires

Figure 3 shows that more than 90% of the students were satisfied with using Flipgrid for the platform to

submit the assignment. During the process of recording and uploading the videos, more than 90 percent agreed that Flipgrid is user friendly. Finally, 94 percent agreed that Flipgrid stimulates creativity.

## Conclusion

The students found out that Flipgrid has shown that it is easy to use and encourage creativity. This online platform promotes students' creativity in delivering verbal responses through video recording (Dunn & Mulvenon, 2009). The positive feedback gauged from the usage of Flipgrid indicates that it is highly convenient in giving assignments based on student engagement and communication. Extension for future work will be focused on creating a higher level of affective domain assignments such as appreciation, enthusiasms, motivations, and attitudes. The use of Flipgrid can be extended to develop social learning by having the students to present in groups. Flipgrid can be used to empower learners and facilitate social interaction between students (Stoszkowski, 2018).

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