Faculty of Cognitive Sciences and Human Development

THE INFLUENCE OF EMOTIONS ON SECONDARY SCHOOL STUDENTS' LEARNING AND ACADEMIC ACHIEVEMENT DURING COVID-19 PANDEMIC

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Bachelor of Psychology (Honours)

2022

UNIVERSITI MALAYSIA SAWARAK

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Final Year Project Report ☑
Masters ☐
PhD ☐

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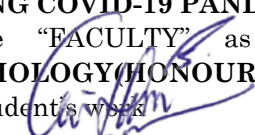
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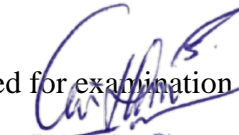
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This project is submitted
in partial fulfilment of the requirements for a
Bachelor of Psychology with Honours

Faculty of Cognitive Sciences and Human Development
UNIVERSITI MALAYSIA SARAWAK
(2022)

The project entitled **'The Influence Of Emotions On Secondary School Students' Learning And Academic Achievement During Covid-19 Pandemic'** was prepared by **Nur Puteri Sabrina Binti Mohamad 71013** and submitted to the Faculty of Cognitive Sciences and Human Development in partial fulfillment of the requirements for a Bachelor of Psychology with Honours

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ACKNOWLEDGEMENT

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ABSTRACT

This study aimed to discover the extend of emotional influence towards secondary school students learning and academic achievement while the academic year took place amidst the COVID-19 pandemic. The simultaneity of the Movement Control Order (MCO) implemented by the government and exclusive online learning conducted in secondary schools in Malaysia is a key element that this research aimed to explore as it is a relatively new experience by both the educators and adolescents. This research was conducted using the mixed method research utilizing the embedded design involving 381 participants in the quantitative survey study and 5 respondents in the qualitative study. The study has indicated the level of emotions experienced by the secondary school students are anxiety, sadness, fear, and desire. From the analysis of inferential statistics using the Spearman Correlation, the study has found that there is a relationship between enjoyment, hope, pride, anxiety, and boredom towards the students' academic achievement. The factors causing the emotions experienced during online learning was found to be lack of social interaction with peers, presence of distraction such as easy access to smartphones, unpleasant class environment, overwhelming workload, and not having to meet a lot of people on daily basis. The findings from this study will enable further understanding on the degree of the role of emotional experiences in influencing learning and academic achievement among adolescents in secondary school during online learning amidst an unprecedented time due to the COVID-19 pandemic.

Keywords: emotions, online learning, adolescents, pandemic, academic achievement

ABSTRAK

Kajian ini bertujuan untuk mengetahui sejauh mana pengaruh emosi terhadap pembelajaran pelajar sekolah menengah dan pencapaian akademik semasa tahun akademik berlangsung semasa pandemik COVID-19. Keselarasan Perintah Kawalan Pergerakan (PKP) yang dilaksanakan oleh kerajaan dan pembelajaran atas talian secara eksklusif yang dijalankan di sekolah menengah di Malaysia merupakan elemen utama yang ingin diterokai oleh penyelidikan ini kerana ini merupakan pengalaman yang agak baharu oleh para pendidik dan remaja. Penyelidikan ini dijalankan menggunakan kaedah kajian campuran menggunakan reka bentuk terbenam yang melibatkan 381 peserta dalam kajian tinjauan kuantitatif dan 5 responden dalam kajian kualitatif. Kajian telah mengenalpasti tahap emosi yang dialami oleh pelajar ialah kebimbangan, kesedihan, ketakutan, dan keinginan. Daripada analisis statistik inferensi menggunakan Korelasi Spearman, kajian mendapati terdapat hubungan positif antara keseronokan, harapan, kebanggaan, kebimbangan, dan kebosanan terhadap pencapaian akademik pelajar. Faktor-faktor yang menyebabkan emosi yang dialami semasa pembelajaran atas talian adalah kekurang interaksi sosial dengan rakan sebaya, kehadiran gangguan seperti akses mudah kepada telefon pintar, persekitaran kelas yang kurang menyenangkan, jumlah kerja sekolah yang membebankan, dan ketidak perluan berjumpa ramai orang setiap hari. Penemuan daripada kajian ini akan membolehkan pemahaman lanjut tentang peranan pengalaman emosi dalam mempengaruhi pembelajaran dan pencapaian akademik dalam kalangan remaja di sekolah menengah semasa pembelajaran atas talian dalam situasi yang belum pernah berlaku akibat pandemik COVID-19.

Kata kunci: emosi, pembelajaran atas talian, remaja, pandemik, pencapaian akademik

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This study aims to explore the influence of emotions towards the students' learning and achievement during the current COVID-19 pandemic considering the students is currently experiencing different learning setting compared to the pre-COVID-19 days. Given the circumstances that students and instructors are in separated locations, including the movement control order (MCO) instructed by the government, this study aims to discover the effect of the current learning situation towards students' emotions whether it will influence their studies and academic achievement. As students must adapt to the sudden change of learning environment and methods, this study is carried out in hopes to answer questions on to the extent of emotion's influence towards students' learning and academic achievement during COVID-19 pandemic. This chapter will describe the foundational components of this study such as the background of the study, problem statement, research objectives, significance of study, possible limitations of the study, and definition of terms involved. In this introductory chapter, the information regarding emotions and past similar studies related to academic achievements and the influence of emotions towards students' learning will be presented in the following sections.

1.1 Background of Study

The COVID-19 pandemic has been affecting the lives of people from all around the globe. To curb the infection rate of the COVID-19, countries all around the world has initiated lockdown to limit the movement of their citizens. Most academic institutions worldwide have been adapting new methods of teaching and learning whereby learning is depended greatly on the use of technology by utilizing online platforms, including distribution of students' learning

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materials and communication. Data reported by the United Nations Educational, Scientific and Cultural Organization (UNESCO) discovers that approximately 90% of students worldwide are affected by the closure of academic institutions to help contain the infection of the virus (Commodari & Rosa, 2021). The transition from physical learning to online learning might give positive or negative impact towards students, depending on their perception towards this change. A key concern with online learning is the lack of sufficient interaction between the students and instructor (Adnan & Anwar, 2020). A study by Adnan and Anwar (2020) has discover that students believed that face-to-face interactions with instructors are crucial for learning and that distance learning student-instructor interactions is insufficient. In addition, Artino (2012) suggests that emotions are prevalent in the online education context.

According to Valiente, Swanson, and Eisenberg (2012), emotion is an individual's reaction to stimuli, which is complemented with the evaluations of the circumstances encompassing the stimuli. Learning related emotions has been studied by researchers where they compare the effect of positive and negative emotions towards academic achievement. In 2018, Putwain et al. carried out a study to discover the corresponding relationship between academic achievement, enjoyment, and boredom. The findings from this study suggests that emotions and achievement interact in a recurring pattern such that enjoyment in learning can resulted to greater achievement and lower academic achievement can resulted to boredom.

A study by D'Errico, Paciello, and Cerniglia (2016) highlighted the challenge encountered by students during online learning is emotion cues sharing. The absence of physical face-to face interaction has somehow gives an impact towards their motivation to learn in a restricting environment of the online learning where it is hard for the students to share nonverbal communication with their peers. In other words, previous studies are only focusing on the students' emotional impacts towards learning as they faced challenges due to limited interactions and emotional cue between their peers. The limiting non-verbal interaction

between peers is also identified as an obstructing factor in distance learning (Khalil et al., 2020). Nevertheless, there are a considerable number of previous studies focusing primarily on the effect of motivation or stress towards learning (Valiente, Swanson, & Eisenberg, 2012; Pascoe, Hetrick, & Parker, 2019). Although most previous studies have shown interest in similar topic of the influence of the emotions towards students' learning and achievement, most of the previous research conducted highlighted their interest in measuring the role of emotion in which it focuses on the context of social emotions (peer-to-peer, instructor-student interactions) of their subject of interest.

In the recent years, the field of educational psychology has been giving more interest in studying the association between emotions and learning towards an individual. Some of the emotion of interest that was studied in this scope of study includes enjoyment, worry, and frustrations in which was highlighted in research done by Artino (2012) where he studied the association between emotion and online learning among university students. Research conducted by Pekrun (2006) proposes the Control-Value Theory of Achievement Emotions. Achievement emotions is defined as emotions associated to the actions or outcomes that are linked to success (Pekrun, 2006). Pekrun suggested the control-value theory, which explained emotions as being strongly linked to cognitive and motivational encounters, as well as cognitive and motivational consequences. The control-value theory developed by Pekrun has been used as an integrative framework for studying diverse emotions encountered in the context of achievement (Mega, Ronconi, & Beni, 2014; Pekrun, 2006; Pekrun, et al., 2011; Putwain et al., 2012; Putwain, et al., 2018). Pekrun's control-value theory is one of the extensively described theory used by researchers in educational psychology to facilitate the discovery on association between learning and emotions that is related to achievement emotion.

The control-value theory has significantly broadened the scope of the study regarding emotions and learning not only exploring emotions as a mediating factor but also as a

moderating factor of students' learning and achievement. Self-regulation is also one of the factors that researchers have been interested withing the study to discover the influence of emotions and achievement. In this context, self-regulation refers to planned and methodically adapted self-generated ideas, feelings, and actions that affect one's learning and motivation (Schunk & Ertmer, 2000). Villavicencio and Bernardo (2012) have conducted a study to determine the effect of positive emotions as a moderating factor that aids in self-regulation and achievement in undergraduate students. The result from this study suggests that the impact of self-regulation on student learning is dependent on the student's ability to experience good emotions throughout learning activities. Researchers suggests students who are self-regulating and experience happiness and pride while learning are more likely to appreciate both the task and the outcomes, and hence are more likely to reach higher levels of learning achievement (Putwain et al., 2012; Sainio et al., 2019; Villavicencio & Bernardo, 2012).

Despite the considerable amount of interest received by the scope of study regarding the influence of emotions towards students' learning and achievement, the current situation that was influenced by the pandemic might show different results due to the sudden change of learning environment that the students had to adapt as part of the new normal. In addition, educational institutions in Malaysia standardized their teaching and learning to transition fully to online during the sudden spike in the COVID-19 infection trend nationwide. As the concurring event of the Movement Control Order (MCO) and sudden shifts towards online learning, the emotional state of the students as a learner might show different results in their academic achievements. Some of the students might encounter greater obstacles to cope with their academic syllabus due to lack of tools and sources needed for distance learning such as connectivity issues, proper learning environment, and financial restrictions.

Although it is unavoidable that there are circumstances that could make it impossible for some underprivileged students to adapt to exclusively online learning, it is evident that a

further study is needed to be carried out based on the current situation. With that being said, the emotional state experienced by the students during this period is essential to be discovered as it would be insightful to know the common emotions that is experienced by the adolescents while attending classes remotely. The lack of preparation for the transition of physical classes to online classes could be the key indicator to discover and understand whether students' emotional state plays a major role in facilitating their learning and achievement.

1.2 Problem Statement

As the worldwide population is faced with the uncertainty of the situation due to the pandemic outbreak, changes had to be made for people to continue living. The ambiguity of what to expect during the pandemic has a negative outcome towards an individual's psychological well-being as people fear the unfamiliar virus that has endangered the lives of many. According to Liu et al. (2020), COVID-19 outbreaks all around the world have a potentially high impact of emotional contagion towards people such that people will be vulnerable to the increasing risk of psychological problems including fear and anxiety.

The unexpected turn of events due to the COVID-19 outbreak has changed the teaching delivery methods of educational institutes globally. It is no doubt that the abrupt change in the current situation due to the pandemic has caused impacts towards the learning experience of students. Moreover, the emotional well-being of adolescence is at risk as they had to be adapted to an entirely unfamiliar learning experience whereby, they had to adapt to autonomous learning. In addition, adolescence well-being is a crucial resource for growth and a requirement for successful learning (Holzer et al., 2021). While online distance learning may not be a major obstacle towards university students, this sudden change may be a huge concern for adolescents in secondary schools. The unanticipated and involuntary establishment of remote learning due

to the pandemic has presented not only obstacles, but also opportunity for learning and satisfaction of basic needs of the adolescents (Holzer et al., 2021). In other words, the changes of traditional teaching and learning method could give a positive and negative impact to adolescence as the current situation could give them an opportunity to explore and developing themselves towards a greater human potential.

The unplanned transition of learning to fully online has induced a gap in the study of the influence emotions towards learning. Although there have been studies regarding the influence of emotions on online learning, past studies with similar interest majority limits towards undergraduate students (eg. Artino, 2012; D'Errico, Paciello, & Cerniglia, 2016; Khalil et al., 2020; Mega et al. 2014; Pekrun, 2017; Villavicencio & Bernardo, 2012). It is crucial to note the effect of the current situation towards adolescents as the current change is an entirely unfamiliar experience for them. According to a study conducted by Klootwijk et al. (2021), the closure of schools may have linked in increasing social isolation and alterations in mental health, which may affect the adolescents' learning motivation. In addition, the study also suggests the characteristic level of autonomous academic motivation is positively linked with everyday academic motivation.

Similarly, a discovery by Holzer et al (2021) indicate the role of self-directed freedom in learning of the adolescents during the pandemic is different whereby the freedom does not guarantee positive effect towards motivation and learning. Even though there is a flexibility in learning schedule, the role of adolescents' self-regulation plays a huge role as an autonomous learner in which it could be an opportunity for students to spend more time in committing to improving their academic excellence. Adolescence is the most crucial age in psychological development as adolescents are in the stage where they conflict with identity vs role confusion as described in Erik Erikson's theory of psychosocial development. The inability to utilize the time for self-improvement may not give a positive impact towards the basic need satisfaction

of the adolescents. Furthermore, adolescents are expected to develop a sense of self or identity that gives significance to their lives (Klimstra, 2012).

Additionally, adolescents' emotional state during the pandemic may not be the same as the pre-pandemic days. A study done by Magson et al. (2021) suggests that living with constraints and concerns about the COVID-19 is linked to higher levels of decreasing mental health well-being as well as lower levels of life satisfaction. In another similar study, it has been suggested that due to the social isolation and health risks posed by the COVID-19 condition, people may experience emotions of fear and loneliness as social media was a useful method used to cope with these sentiments (Cauberghe et al., 2021). To further understand the issue of adolescents' emotions during the pandemic, a study by Kilinçel et al. (2020) found that the presence of a positive COVID positive patient among or close to the family resulted in 3.81 times more rise in anxiety. School issues, such as anxieties about passing classes, managing schoolwork with other duties, and poor-quality online programmes, appear to be uniquely related to increases in depression symptoms, according to multivariable analyses done by Hawes et al. (2021). Therefore, it is crucial to also take into consideration the role of the emotional state experienced by adolescents as the pandemic situation and committing to their unfamiliar role as a student learning remotely amidst the pandemic has added pressure to their academic performance where it might be too overwhelming for them to cope.

Previous studies present a limited expository of the influence of emotions towards learning and achievement during the COVID-19 pandemic. Considering the fact that students are faced with the concurring event of Movement Restriction Order (MCO) and exclusively online learning environment, a further study is essential so that results from this study could contribute to the body of knowledge in the educational field such that students and instructors will be able to construct or identify efficient delivery methods of teaching and learning in online learning. Furthermore, the research of similar interest in the Asian context is inadequate as

most of the previous studies are carried out in the western country setting. It is important to note that individual differences in cross-cultural context may generate different results of similar studies.

1.3 Research Objectives

1.3.1 General Objective

To explore the effect of emotions on the learning and academic achievement of secondary school students amidst the COVID-19 pandemic in Malaysia.

1.3.2 Specific Objectives

1. To determine the level of emotions experienced by secondary school students during online learning.
2. To determine the effect of level of the emotional state towards academic achievement of secondary school students during online learning.
3. To identify factors that caused the emotions experienced during online learning.

1.4 Research Questions

1. What is the level of emotions experienced by secondary school students during online learning?
2. Is there any relationship between the level of emotional state and the academic achievement of secondary school students during online learning?
3. What are the factors that caused the emotions experienced by the secondary school students during online learning?

1.5 Research Hypotheses

Based on Research Objective 2 and Research Question 2, the hypothesis is as follows:

H_{1_2}:   There is a significant relationship between the level of emotional state and the academic

achievement of secondary school students during online learning.

1.6 Conceptual Framework
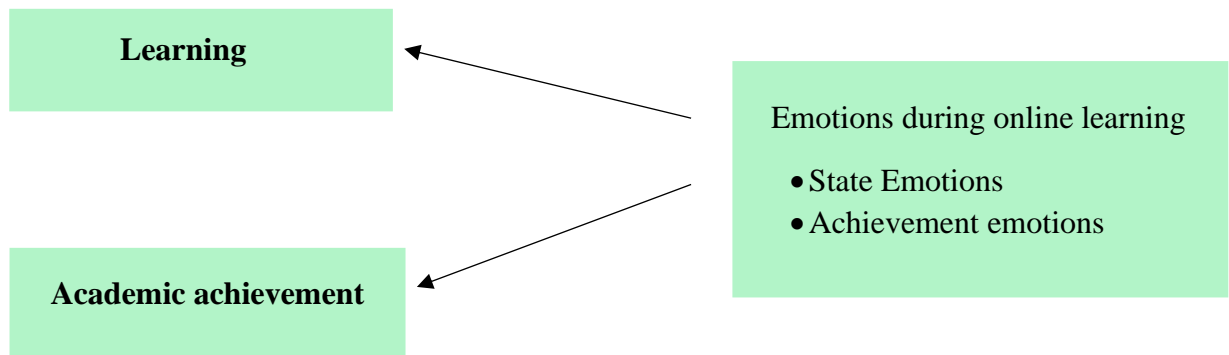
Figure 1: Conceptual framework of the current study.

1.7 Significance of Study

Through the exploration of the emotional influence on students' learning, this study will provide insights on how emotional elements have an actual effect on a person's learning and academic success. Subsequently, information that will be gained from this study will benefit the educational field where it will help educators, students, and the community to be aware of the emotional consequences towards one's learning. Since this research is being carried out during the COVID-19 pandemic, it will focus on the affective impact on learning, as the present condition may have varying effects on students' emotional well-being. This is due to the fact that the pandemic might have made a considerable effect on one's personal life such as loss of

family members due to the infection, loss of monetary source, constant fear of the risk of getting infected, anxiety, domestic violence, and more. It is also worth noting that teenagers are at the peak age of trying to build their own self-identity.

There is inadequate research that explores on the effect of emotions towards adolescents learning and academic achievement during the pandemic as most studies focuses on university students. With regards to that matter, secondary school students might have a greater impact on the emotional factors during this pandemic compared to adults as they are not used to self-directed learning compared to university students. Additionally, the discovery of the effect of adolescents' sentiments towards learning in the current pandemic is important as they are only exposed to physical class settings and instructor-directed classroom delivery methods or the traditional method. The abrupt shift in environment and method of delivery may have a substantial impact on their learning and achievements.

1.8 Definition of Terms

1.8.1 Emotions

Conceptual definition: A response to significant events that develops action readiness and many forms of alternative, potentially conflicting action tendencies, but not as a necessary cause for their action (Scherer, 2009).

Operational definition: In the present research emotions will be defined as the present state of moods that the secondary school students felt at the current time.

1.8.2 Achievement Emotions

Conceptual definition: Achievement emotions are emotions that are closely linked to achievement activity or output (Pekrun, 2006).

Operational definition: The achievement emotions in this study will be defined as the emotions experienced by the students related to their academic commitments.

1.8.3 Academic Achievement

Conceptual definition: Academic achievement refers to how well individuals do in intellectual domains taught in educational institutes. Academic accomplishment is the most significant prerequisite for individual and society prosperity as a measure of intellectual education (McCoy et al., 2005).

Operational definition: The academic achievement in this study will be measured by the range of exam scores mostly obtained by the secondary school students in their final assessments.

1.8.4 Learning

Conceptual definition: Learning is defined functionally as alterations in behaviour that occur as a result of experience, and mechanistically as changes in the organism that occur due of experience (De Houwer et al., 2013).

Operational definition: In this study, learning will be measured by students' perception of their overall level of understanding towards learning materials based on their online learning experience.

1.8.5 Teaching Methods

Conceptual definition: Teaching methods are the means of delivering learning materials to students in order to achieve the targeted objectives (Mandaniyati & Sophya, 2020).

Operational Definition: The teaching methods will be measured by the type of teaching tools or medium utilized by the teachers during the class.

1.8.6 Online learning

Conceptual definition: Online learning is described as education offered through the use of the internet for teaching and learning in an internet-based environment. This includes students' online learning that is not dependent on their physical or virtual co-location. The teachers create teaching concepts that promote learning and interactivity in a synchronous or asynchronous setting, and the content is provided online (Singh & Thurman, 2019).

Operational definition: Online learning in this study is described as attending classes from home by the methods of utilizing virtual meeting platforms and related tools.

1.9 Summary

The sudden transition of the learning method and environment has attracted the interest in studying how these changes affect the emotional well-being of the students towards their learning and academic achievement from these situations. This chapter is the introductory section of the research whereby this chapter helps to give the overview by stating the purpose and approach of the current study and the issues that indicates the interest to further study the emotional factors affecting learning among adolescents due to the current circumstances. Additionally, the variables that will be involved in this study is also indicated in this chapter.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter will evaluate on the past related studies that involves the association of emotions towards learning and academic achievement. The literature review will include the findings and discussions on the themes related to the discovery on the emotional factors' relation to academic performance.

2.1 Emotions in Learning Context

Every individual has experienced feelings that is due to a certain event that they can relate. Emotion is viewed as a response to significant events that develops action readiness and many forms of alternative, potentially conflicting action tendencies, but not as a necessary cause for their action (Scherer, 2009). Other than that, the psychoneural mechanisms that impacts the vigour and sequencing of actions in the interactive flow of intense attitudinal interchanges between living creatures and other objects that are essential for survival are also known as emotions (Tyng et al., 2017). Often time, the current emotions may affect the way an individual reacts to certain situations due to the sentiments resulting from previous experience. Emotions is often related to moods, feelings, and affect. These terms are often associated when emotions are involved but each of these has different meanings in its application towards an individual psychological process. According to Hagenauer and Hascher (2010), emotions emerge from an assessment of one's personal perception of a previous occurrence of an incident. Tyng and colleagues (2017) have suggested that emotions are characterized by positive and negative moods, but moods linger longer, while feelings are valanced mental experiences that are followed by internal psychological changes in the body,

notably viscera for preserving or fighting homeostatic balance. Additionally, emotions are rarely the source of feelings. Meanwhile, affect is a broader term that refers to feelings that are readily available (Fredrickson,2001). In daily living, these elements are related to an individual's experiences but sometimes they are not aware that emotions are one of the disposing factors of their actions.

The study of emotions includes a wide range of discoveries in the body of knowledge such as memory, attention, perception, and cognition. Emotions are subjective based on the context in which has heightened the interests of scholars in studying the effect of emotions on the psychological responses of an individual in their learning process. Bieleke and colleagues (2020) suggests that academic environments elicit a wide range of feelings in students, including excitement to learn something new, pride in their exam scores, annoyance at the quantity of homework assigned, and boredom during a boring class or learning session. It was also suggested that as far as how emotions shape relationships, feeling and displaying emotions is likely to have an impact on student accomplishment (Valiente et al., 2011). This statement indicates that learning is most likely associated with the emotions felt by the learner. According to Pekrun (2017), he proposed that taking by surprise about a new assignment, interest, bewilderment, and disappointments over difficulties, as well as satisfaction when the challenge is completed, are examples of epistemic emotions. He then further added that epistemic emotions are a crucial element for non-routine material learning of students. For instance, non-routine material has been widely used in Malaysia such that the students were required to apply their higher order thinking skills (HOTS) in solving the problems presented to them. Students were required to utilize and apply their creativity and critical thinking skills during learning and assessments as the learning activities and assessments were no longer based on straightforward or routine problem. According to Muis and colleagues (2018) information-oriented appraisals such as the cognitive component of emotion about the alignment or

misalignment between new information and existing beliefs, existing knowledge structures, or recently processed information are referred to as epistemic emotions. When a person sets the epistemic goal of comprehending something, emotions may emerge. When the individual managed to fulfil the goal, they may feel pleased about it. When an epistemic goal is hindered, however, the individual may feel anxious, frustrated, or angry (Muis et al. 2018).

2.1.1 Achievement emotions

Achievement emotions are identified as emotional responses directly correlated to accomplishment actions or achievement results (Pekrun, 2006). In the study conducted by Pekrun (2006) it is also suggested that achievement emotions also include sentiments associated with achievement-related tasks. The emotions that are related to achievement activities as mentioned by Pekrun (2006) include enjoyment, hope, pride, relief, anger, anxiety, shame, hopelessness, and boredom. In the same study, the scholar has conceptualized achievement emotions as a one-time event that occurs within a specified environment at a specific point in time involving achievement-related activities. These emotions were then conceptualized in the Control-Value Theory whereby emotions are said to be significantly connected to cognitive and motivational experiences, as well as their outcomes.

It was suggested that since emotions have an impact on adolescent attention, motivation, and learning processes, and they ought to have an effect on academic performance (Pekrun, 2017). This statement suggests that students' performance has the tendency to be related to the emotions that they experienced while they are in the learning context. For example, students' that have experienced a negative event right before taking an exam might score lower on their academic performance or examinations due to the influence of the negative emotions that they are currently feeling. Negative emotions are suggested to be derived from a sense of ability and

control are insufficient (Pekrun et al., 2017). This indicates that, if the student feels that they are not good enough or do not have the ability to master their learning materials, they tend to obtain lower scores in their academic assessments. Hasher (2010) suggests that negative emotions force a person to focus on their inner feelings since they are attempting to figure out how to get rid of the awful feeling. Such situations may be the factor that affects the academic performance negatively as the person is not able to use their full potential during their academic assessment due to solely focusing on resolving their negative emotional encounter.

The achievement emotions that were suggested by Pekrun (2006) has been widely studied by researchers on its relations towards learning and performance among students (eg. Ahmed et al., 2013; Camacho-Morles et al., 2021; Mega et al., 2014; Luftenegger et al. 2016; Pekrun et al., 2017; Putwain et al. 2012; Sainio et al. 2019; Toti et al., 2020). The findings from these studies have stated that the activating achievement emotions (enjoyment, hope, and pride) are associated with student achievement. This statement is supported by Yu and colleagues (2020) whereby their study discovered that learning persistence was positively correlated with student happiness meanwhile anxiety and boredom, on the other hand, were found to be negative predictors of academic learning perseverance.

In addition, Hernick and Jaworska (2018) conducted a study to discover the impact of enjoyment on students' learning process. The condition or phase of feeling pleasure in anything is referred to as enjoyment. In their study, they presume that if the lecture is delivered with humour, learners will be more engaged and satisfied and that enjoying learning is one of the conditions that lead to positive outcomes. The study's main focus is to discover the association between the enjoyment emotions towards understanding and memory of the learner in memorizing the lesson. Their findings revealed more participants were satisfied with lessons after humorous meetings, claiming to have learned something new, and more reported that meetings make them feel good. It has been discovered that students remember more from

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relaxing and engaging lectures than from rigid and dull lectures. According to the findings, 58 percent of students recalled lecture content in the hilarious lecture, compared to 55 percent in the normal lecture (Hernick & Jaworska, 2018).

2.1.2 Adolescence Identity Development and Academic Achievement

As suggested by Klimstra (2012), adolescents are anticipated to form a concept of self or identity that gives their lives meaning. The developmental stage of adolescents is aimed to explore their identity such that the identity is associated to their goal of the person that they aimed to be in the future. Adolescents' identity development is usually associated to their efforts to invest in their academic commitments as they are in the stage of trying to resolve the conflict of finding their purpose or meaning in their life. These events are in line with the theory suggested by Erik Erickson which is the Identity vs Role Confusion stage from his theory of psychosocial development.

Adolescents are meant to be concerned with establishing educational and professional goals as well as moulding their image of who they are and what they would like to become (Verhoeven et al., 2018). The study then further added that uncontroversial educational developments may indirectly shape how teenagers come to view themselves and provide suggestions as to how learning experiences that help adolescents' identity development might be implemented into the curriculum. As adolescents are in the stage where they are actively seeking to value self-worth, the process of reaching their view of 'success' might be overwhelming as the academic commitments and demands might cause them to feel pressured as the idea of failure might be meant their failure in life.

The discovery on the self-identity among adolescents has been conducted by Toti and colleagues (2020) focusing on the population in Sarawak. This study has found that education

plays a vital part in moulding a student's personality and self-identity, in which educational plan should be developed regularly in light of the issues that today's young generation encounters. Additionally, they also suggest students with a strong sense of self-identity should be able to deal with the obstacles and pressures that come from outside influences that might impair their resilience and sense of self-identity. Toti et al. (2020) propose that parents, peers, and parents' past experience is associated with the children's developmental processes. Parents have a vital influence in educating their children about the values and ethics that they follow in their daily lives, and this form of informal learning serves as the foundation for their children's character and identity formation. The role of the parents in this situation is to educate their children on the moral values that they should apply in which will determine the value and beliefs that the children apply in their life. As peers are usually around when in the school environment, peers have a role in contributing towards self-development as adolescents learn and discover new things in the education institutions along with their peers in which has made peers as significant groups involved in self-development process. The indirect environmental experience such as parents' past experience also indirectly effect the developmental process of the adolescent such that parent's way of interaction or parenting style relates in shaping the child's identity (Toti et al., 2020). This can be interpreted whereby the rules and limits set by the parents due to their parenting style have influenced their child's development as they have been accustomed to the ground rules set by their parents.

In a literature review done by Verhoeven, Poorthuis, and Volman (2018), there are several findings that they have concluded based on their analysis of identity development done by other researchers. Their study has discovered that school is the most significant factor in the process of identity development besides parents. There are broad learning processes that unknowingly play a part in teenage identity development. In light of this event, adolescents can be encouraged to explore new identity perspectives by working in broad exploration, or they

can be assisted to discover even further and specify current self-understandings by engaging in an in-depth investigation (Verhoeven et al. 2018). To support the self-development of secondary school students, their study also mentions that educational institutions should consider their current practices such that educators could modify their lessons to become exploratory learning sessions, and schools should consider re-evaluating their curriculum to allow for various forms of exploratory and descriptive learning experiences.

2.1.3 Self-regulatory emotions among adolescents

In 2011, Pekrun and co-workers have discovered that enjoyment, hope, and pride are positive activating emotions that are associated with self-motivation, perseverance, comprehension of learning content, and learner's self-regulation. They also found that the achievement by the university students is related positively to the activating emotions. This statement has been supported by various scholars that have studied the effect of emotions on learning (eg. Bieleke et al.,2021; D'Errico et al.,2016; Sainio et al., 2019). Self-regulation refers to personality attitudes, sentiments, and behaviors that impact one's learning and performance that are organized and systematically altered (Schunk & Ertmer, 2000). Since self-regulation implies cognitive flexibility in adopting meta-cognitive, meta-motivational, and meta-emotional techniques for adapting learning to objectives and task demands, positive emotions like the enjoyment of learning are considered to facilitate students' self-regulation of learning (Wolters, 2003).

The capability of a learner to perceive positive emotions during learning activities determines the impact of self-regulation on student learning (Villavicencio & Bernardo, 2012). This statement could indicate that the ability of the learner itself is the key factor that determines the emergence of self-regulation emotions based on how they view their learning

experience and the affectual factors during that situation. Izard (2009) suggested that emotions' feeling component aided in the development of consciousness as well as the affective, cognitive, and action processes involved in goal-oriented activity. According to Izard's remark, self-regulatory emotion is a crucial component that might influence students' dedication to their academic responsibilities, particularly during individual learning during the pandemic. Furthermore, because remote education allows learners more choice in terms of where and when they participate, their capacity to manage their own learning appears to be critical (Sun & Rueda, 2011). Self-regulatory is important to ensure that students are able to create excellent academic outcomes because they are accountable for tracking their own learning progress throughout online learning.

2.1.4 Adolescents Emotional Well-being During the Pandemic

To understand the significance of investigating the impacts of the COVID-19 pandemic on teenage psychological health, someone must comprehend the developmental changes that take place during adolescence, which may make this an especially distressing time (Magson et al., 2021). As the adolescence developmental stage can be acknowledged as the crucial part in psychosocial developments, the constraint to engage in social activities among their peers may be difficult for them to adapt. Puberty's hormonal changes combine with adolescent social dynamics to make them hyper-aware of their social standing, peer group, and connections. Teens may feel frustrated, apprehensive, detached, nostalgic, and bored as a result of the current pandemic social isolation (Imran et al. 2020). Poor social bonds during this critical developmental period can lead to a negative self-image, a weak sense of self-worth, and eventual anxiety and depression symptoms, while positive relationships with peers might have resulted in social and emotional support (Magson et al., 2021).

Adolescents who miss school regularly or have fewer social contacts as a result of lockdown measures, as well as poor and disadvantaged children and children with mentally unwell parents, are in danger of being more pressured, according to the study by Ravens-Sieberer and colleagues (2021). In their findings to discover the effect of the pandemic on the health-related quality of life, changes in parents' professional position as a result of the pandemic, as well as family disputes, were linked to poor health-related quality of life and mental health in children and youth (Ravens-Sieberer et al., 2021). This statement can be supported by Magson et al. (2021) whereby COVID-19-related distress, family problems, and regular media exposure throughout the pandemic would all contribute to an increased risk of mental illness. Besides, it was also found that adolescents and university students have an abundance of energy, excitement, ambition, curiosity, and passion, making it difficult to confine them at home (Imran et al. 2020). With that being said, their inability to be confined at home could be a factor that contributes to the increasing number of mental health problems among the youths.

2.2 The Basic Emotion Theory

Basic emotions are a group of connected affective states rather than a singular affective state (Ekman & Friesen, 1971). Kowalska and Wrobel (2020) suggests that basic emotions are a subset of emotions from which all other emotions are derived. They are innate, universal, and different affective states, according to most theorists (eg. Izard, 2007), which thus arose to perform adaptive tasks. Basic emotions, according to theory, are distinguishable and short-lived states involving physiological, subjective, and emotive components that enable humans to respond in ways that are typically highly adaptable in regard to evolved significant problems, such as negotiating status hierarchies, avoiding danger, and caring for vulnerable offspring (Ekman, 1992; Ekman & Cordaro, 2011; Keltner et al., 2019). Anger, fear, and disgust, for

example, were viewed by Darwin as individual entities or modules (Ekman, 2009). Prior to categorizing the basic emptions into a single list, it is necessary to organize the basic emotions into families and groups. Each emotion is a group of connected states rather than a single affective or psychological state (Ekman, 1992; Ekman & Cordaro, 2011). According to Ekman (1999), there are 15 basic emotions that includes amusement, anger, contempt, contentment, disgust, embarrassment, excitement, fear, guilt, pride in achievement, relief, sadness/distressed, satisfaction, sensory pleasure, and shame. The discovery of these 15 emotions done by Ekman (1999) has indicated that these emotions is related to one another, in which can be further expanded into more unique emotions.

The most significant argument involving the basic emotions is the "big six" or the "basic six". The 'big six' refers to the 6 emotions that was suggested by Ekman (1969) in his preliminary study of the basic emotions. Ekman (1969) first suggests that there are 7 basic emotions (fear, anger, joy, sad, contempt, disgust, and surprise) but later changed it to 6 emotions, excluding the contempt emotion, whereby the six emotions have been widely studied by emotional theorists up to the present day. Anger, fear, sadness, disgust, surprise, anticipation, trust, and joy, as per Plutchick, are the eight primary emotions (Gu et al., 2019). According to Gu and collaborators (2019), psychologists have the same opinion on the basic emotion's theory, albeit there is disagreement over the exact number of emotions that can be classed as fundamental emotions. For instance, there is a debate by emotion theorists that suggested there are lesser than 6 fundamental emotions. In research by Jack and associates (2016), the study proposes that the fundamental emotions consisted of 4 instead of 6 which was proposed by Ekman. In accordance with the earlier inquiry on emotional recognition, individuals outside from Western culture tend to misclassify fear and disgust as surprise and anger (Jack et al. 2016). This finding has been supported by the findings from a recent study by Wang and

coresearchers (2018) that lead to the conclusion that basic emotions are often not exclusive of each other after noting confusions between "disgust vs rage" and "fear vs surprise."

Emotion theorists, Izard (2007), states that basic emotions are practical and encouraging in different ways during early development of an individual. In an extended study, it was reported that emotion exploitation is adaptive thought or action that originates directly from emotional experience and in part from learned cognitive, social, and behavioural skills (Izard, 2009). It is often centred on effective emotion-cognition interactions. This statement has been supported by Kowalska and Wrobel (2020) as they indicate that the basic emotions have specific motivational and regulatory qualities because they developed to perform important biological and social roles. The biological developmental alterations affect the basic emotion response mechanism (Izard, 2007). Ekman and Cordaro (2011) supported this statement in their research whereby they indicate that emotions progressed as a result of our adaption to our environment. In other words, emotions theorists have agreed that emotions are evolutionary as it is actually subjected to the developmental process of an individual that develops as early as during their infancy age (e.g., Ekman & Cordaro, 2011; Gu et al., 2019; Izard, 2007; 2009; Kowalska & Wrobel, 2020). However, it's equally important to keep in mind that emotions could and would happen even when we are not currently in the company of others or thinking about a specific person (Ekman, 1999). He then further adds that emotion's principal job is to mobilise creatures to cope promptly with critical interpersonal experiences, preparing them to do so via past responsive behaviour patterns. The past means to what has been adaptable in our species' previous history, and the past also refers to what has been adaptive within one's personal history.

2.3 The Control-Value Theory

Pekrun (2006) proposed the control-value theory, which explained emotions as being strongly linked to cognitive and motivational experiences, as well as cognitive and motivational effects. Pekrun's control-value theory has been used as an integrative framework for examining a variety of emotions that arise in the context of achievement (Mega, Ronconi, & Beni, 2014; Pekrun, 2006; Pekrun, et al., 2011; Putwain et al., 2012; Putwain, et al., 2018). Pekrun's control-value theory is one of the most well-known theories utilized by educational psychologists to aid in the finding of associations between learning and emotions associated with achievement emotion.

In the study done by Pekrun, he suggests that appraisals are also significant because they are thought to modulate the effects of contextual circumstances and can be addressed by educational institutes in their intervention strategies aimed at promoting healthy emotional development among its students. Subjective control over accomplishment pursuits, including their outcomes, and subjective values of these activities and consequences are two sets of assessments that are of unique importance for achievement emotions, according to the Control-Value Theory. According to Pekrun (2006), expectancies and attributions referring to causal relationships between accomplishment situations, the self, one's achievement actions, and their outcomes are seen to be significant in terms of subjective control. Causal expectancies and causal acknowledgements can both refer to almost the same cause-effect relationships but from opposite angles. Positive emotions, such as learning enjoyment, are thought to boost innate and extrinsic motivation, whereas adverse sentiments, such as boredom and hopelessness, are seen to be counterproductive (Pekrun et al., 2002). This statement has been supported by another study conducted by Pekrun in 2006 while he further added that negative emotions, on the other contrary, are thought to make dependence on exterior assistance. According to the Control-Value Theory, different achievement feelings have different attributes of a product determinant.

A study by Putwain et al. (2018) centered on the Control-Value theory demonstrates that achievement predicts future enjoyment whereas dullness predicts future boredom. This could be owing to a variety of competing and interacting elements, in addition to and in conjunction with emotion, that influence achievement. On the other hand, there are fewer influences on the control and value evaluations that underpin emotions, allowing feedback on learning and achievement to play a larger role in shaping emotional development.

2.4 Education during COVID-19 Pandemic

Most academic institutions throughout the world have adopted new teaching and learning practices that rely heavily on the use of technology, such as online platforms for the dissemination of students' learning resources and communications. Due to this event, teachers and students are not prepared enough to be adapting to the remote learning method. Students believe that face-to-face interactions with instructors are critical for learning, and that distance learning student-instructor interactions are insufficient, according to Adnan and Anwar (2020). Similarly, Holzer et al. (2021) discovered that the role of self-directed freedom in teenage learning during the pandemic is different, with freedom not guaranteeing a beneficial influence on motivation and learning. With that being said, the autonomy obtained by adolescents to be responsible in their own learning might not produce a promising result reflected on their academic achievements. As suggested by Vansteenkist and colleagues (2012), students that are autonomously driven learn out of curiosity and interest because the learning activity is personally important to them. They learn to meet externally or internally imposed expectations with regulated motivation. This statement implied that adolescents that can manage their emotions to be motivated in their self-learning can engage in learning although they were not supervised due to their own intrinsic motivation.

The pandemic gives the academic institutions no other options but to use online platform to carry out teaching and learning processes. Such case may not be a huge problem to students of higher education institutions, but the secondary and primary school students may face difficulty to adapt to this method. In a study by Adnan and Anwar (2020) found that due to their face-to-face interaction with the lecturer and classmates, students in regular classes are more likely to participate in academic activities. Learning in traditional classrooms seems to be more inspiring than virtual classrooms, according to 71.4 percent of respondents in the study. According to Khalil et al. (2020), e-learning can be difficult for pupils due to a shortage of effective communication and lack of non-verbal cues. This statement can be supported by an earlier finding by Cleaveland-Innes and Campbell (2012) whereby students who were participating in online classes had difficulty finding enjoyable ways to communicate with their classmates and instructors. E-learning environment can also indicate the insufficient emotional presence. Emotional presence encompasses the entire online experience, not only the affective reaction that manifests itself via social existence. The outward projection of emotion, affect, and feeling by individuals and groups in a learning community as they relate to and engage with technology in education, course content, students, and the teacher is referred to as emotional presence (Cleaveland-Innes & Campbell, 2012). Note that, the timeframe of these research is different whereby the more recent research by Khalil has taken place during the pandemic whereas the study by Cleaveland-Innes and Campbell was conducted during the period that is not anywhere near to the pandemic outbreak phase. Therefore, the current study will expect results similar to these findings considering the fact that the current study is similar to Khalil et al. (2020) although the population of interest in previous study were focused on university students.

2.4.1 Teaching approach toward learning outcomes in distance learning

Methods and approaches applied by educators in their lessons might be a key factor that could determine the engagement level and effectiveness of teaching. As suggested by Sun and Rueda (2011), multimedia may seem to be a useful resource for instructors looking to boost student emotional involvement in an e-learning setting. This has been proven in their study whereby the students agree that they were able to learn more due to the use of multimedia. Note that the sample in this study was mentioned to be using mainly pre-recorded videos as their learning materials. Thus, multimedia and discussion boards are examples of online activities and tools that can help boost student participation in online distance learning. It is critical to increasing student engagement by using a range of tools in the classes to stimulate their interest, keeping in mind that first-time e-learners may have difficulties emotionally interacting in the learning environment. As a result, teachers should pay close attention to the needs of younger students for tactics that will help them self-regulate their learning through distant learning (Sun & Rueda, 2011).

2.4.2 Teachers' role in supporting students during remote learning

Educators can be seen as another source that drives students to be motivated in their academic performance and learning. The interaction between the teacher and student could induce emotional outputs. As discussed by Artino (2012) emotions are prevalent in remote learning environments. Given the circumstances that the teacher and students are in different locations during the learning process, students might feel confused, frustrated, and lonely as they did not have a direct interaction due to the virtual learning environment. The difficulty of coping to the role as a distance learner can induce a variety of affectual outcomes for the adolescence. As described by Cleveland-Innes and Campbell (2012), owing to the overwhelming inability to combine different tasks and obligations, distant learning can induce

stress and anxiety. The individual may find it difficult to manage and blend academic, family, and social life, making it even more difficult to deal with the multiple demands that come during their educational pursuit. Thus, teachers should be supportive to their students to ensure that the learners are able to find support during these tough periods of the concurring event of the pandemic and abrupt shift from the traditional physical learning to online learning.

In the study by Lessard and Puhl (2021), their findings highlight the importance of schools ensuring that instructors have the equipment they require to properly support their learners although the pandemic era is causing the teaching staff to be under massive pressure due to their personal commitments outside of their teaching life. It is worth to consider the overwhelming pressure faced by the secondary school students as the online learning is a totally unfamiliar experience to them. Emotion will occur during the adjustment to distance learning as well as during the learning process altogether (Cleveland-Innes & Campbell, 2012).

As remote learning requires students to be responsible in their learning, most learning methods employed in educational institutions are self-directed learning. Schweder & Raufelder (2019) found that since students' learning behavior is enabled regardless of their positive emotions, age, or gender, self-directed learning is a wise approach to learning throughout adolescence. As a result, instructors that are capable and willing to expose the students to self-directed learning frameworks and provide guidance based on the students' learning needs and requirements are advised for schoolchildren in self-directed learning (Schweder & Raufelder, 2019). Similarly, Yu and colleagues (2020) in their recent paper has also come to suggest educators should place a greater emphasis on student-centered engagement by providing comments on students' work and projects to keep them informed about their progress. The educator's role is a significant factor that can ensure that the students were able to indicate the level of their learning as they could have a tendency to view their teacher as their role model.

Collectively, these findings suggested that distanced learning experience can be enhanced if the teachers are emotionally present during the learning process of the learner.

2.5 Summary

To summarize, this chapter has summarized and compared the related research and their findings based on the study associated with the discovery of the effects of emotions in academic settings. This chapter gives a clear view to further understand the scope of the study and therefore will help to understand the gap that will be addressed and filled in the study regarding the affectual components in a learners' learning process.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter will elaborate on the methods and the targeted population that will be used to carry out this study. The following sections will elaborate more on the design of this study including the instruments, data collection procedures, and data analysis methods such as the statistical tests involved in this study.

3.1 Research Design

The current research is based on the research philosophy of positivism. The design that was used in this research mixed method research. Mixed methods research is described as a type of study in which the researcher applies both quantitative and qualitative research techniques, methodologies, approaches, concepts, or language in one study (Johnson & Onwuegbuzie, 2004). The primary idea of the mixed method technique is that combining quantitative and qualitative data collecting and analysis allows for a more comprehensive and synergistic use of data compared to the use of a single type of research method of the quantitative or qualitative data analysis (Wisdom & Creswell, 2013).

The type of mixed method design that was applied in this study is the embedded design whereby the correlational model is applied in this study. The embedded design is a paradigm stresses a significant main type of data gathering (e.g., surveys), as well as a small secondary form of data collection (e.g., a few interviews with some of the survey participants). Although both types of data are not equivalent in amount and thoroughness, the study's scope can be narrowed and made more manageable in terms of time and money (Creswell & Creswell, 2017). An embedded design collects and analyses both sorts of data at the same time, but within the

context of a larger quantitative or qualitative design. The importance of one form of data over the other cannot be underestimated (George, 2021). In line with the aim of this study which is the qualitative data will act as the supporting form of data to the quantitative data, the embedded design is the most appropriate design to be utilized in this study as the aim of conducting the qualitative data collection is to further explore the factors that contributed to the emotions experienced by students during online learning amidst the pandemic.

The approach used is deductive as the aim of the study is to make a generalization whether emotions influence students' learning and academic achievement. The data-gathering technique of choice for this study is through online survey forms, hence the research strategy will mostly centre on surveys. In line with the statement by Rahi (2017) in a review on the research design, it was recommended that quantitative technique was shown to be the best for data collection in a study conducted under positivist philosophical elements, and survey questionnaire is used to assess respondents' preferences, feelings, and actions in a group or individually. Thus, the selected design applied in this study is appropriate to the context of the research. Since the research is based on the mixed method design, the qualitative section of the research is utilizing interviews with participants that has responded in the online questionnaire survey to further inquire the factors that influence their response.

Due to the short amount of time available to perform this study, the time horizon for this research will be cross-sectional. In this study, the score generated from the data collection of respondents' responses is used to make statistical judgments to investigate the correlations between the variables that were stated in the hypothesis. Finally, the study's findings was examined and interpreted to answer the research questions and hypotheses that were stated in Chapter 1.

3.2 Population and Sample

The targeted population in this study is secondary school students in Malaysia aged 13 to 17 years old. As the targeted population was too large, sampling was done to ensure that the data is possible to obtain for this study. Non-probability sampling is the type of sampling method that was utilized to choose the samples for this study.

For the quantitative segment of the research, questionnaires was utilized as an instrument to gather data from the respondents. Since the questionnaire was distributed via online surveys due to the restrictions caused by the pandemic, convenience sampling was identified as the best sampling method. The sample of the study was secondary school students in Kuching, Sarawak that is about 44815 students in total (Department of Statistics Malaysia, 2021). The data on the number of secondary school students in Kuching, Sarawak was obtained from the Department of Statistics Malaysia website based on the recent publication of Pocket Stat Sarawak Quarter 3 2021. According to the Department of Statistics Malaysia (2021), Pocket State Stats publishes socioeconomic information on a quarterly basis to assess each state's economic status and to suit the needs of formulation of policies and state development planning.

The chosen sample size for the quantitative section of the study consists of 381 respondents. Sample size selection for this study was made based on the guidance from the table that was proposed by Krejcie and Morgan (1970). The table will be presented as below:

Table 1

Krejcie & Morgan (1970) Table Determining Sample Size for Given Population.

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size.
S is sample size.

The qualitative segment of the research utilized interviews with selected participants to gather more information on the factors that affect the emotions that was experienced by the respondents. Purposive method of data sampling was employed during the sampling process. Purposive sampling, also known as judgement sampling, is the purposeful selection of a subject based on the subject's characteristics. It's a non-random strategy that doesn't require any underlying ideas or a predetermined quantity of participants (Etikan et al., 2016). Etikan and colleagues (2016) additionally mentioned in their discussion whereby purposive sampling is predicated on the notion of focusing on persons with specific qualities who will be properly suited to contribute and assist during the process of the research. In this research, 5 participants

were chosen based on their gender with the ratio of male to female 3:2 whereby the lesson delivery method experienced by the students is synchronous or live class.

3.3 Instruments

As the design of the research was using surveys, the participants of this study was given a set of self-report questionnaires to assess their learning and achievement-related emotions. The instrument employed in this study was based on adapting The Discrete Emotions Questionnaire (Harmon-Jones et al. 2016) and the short version of the Achievement Emotions Questionnaires (AEQ-S) (Bieleke et al., 2021).

The Discrete Emotions Questionnaire (DEQ) was established based on the aim to create a tool that could measure the emotional experiences. Harmon-Jones, Bastian, and Harmon-Jones (2016) aim of developing the tool is to establish a new discrete emotion measurement tool that may be used to assess subjective emotional experiences in terms of understanding not only emotional responses but also the emotional processes that underpin many cognitive and social processes along with behavioural tendencies (Harmon-Jones et al., 2016). The researchers that developed the DEQ has addressed the shortcomings and the limitations in using the well-established positive and negative affect scale (PANAS) (Watson et al., 1988). Therefore, the DEQ was established to ensure that there is a tool that can measure state emotions that was included as the basic emotions as proposed by emotion theorists (eg. Ekman, 1969; Ekman & Cordar, 2011; Izard, 1994). The DEQ was adapted in this study by inserting the phrase that describe the current situation of the shift of teaching and learning methods to online due to the pandemic. The phrase is stated as follow.

"Malaysia has been adapting to online learning to conduct learning and teaching process to all schools during the outbreak of the COVID-19 virus. While attending classes from home as you listen and watch your teachers

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teaching you from the screen of your gadgets (e.g., laptop, tablet, and phone),

there are some emotions that you may have felt during these situations."

The DEQ contains the above statement followed by the 32 emotions that is listed following the statements. The respondents were required to rate the 32-items (emotions) by using the provided Likert scale ranging from 1 to 5 where the scale 1 indicated that the respondents does not feel the feelings at all whereas scale 5 indicated that the feelings was strongly felt by the respondents.

The AEQ-S was developed by adapting the original Achievement Emotions Questionnaire (AEQ) (Pekrun et al., 2005) by applying the changes based on the re-evaluation by Pekrun et al. in 2011. The development of the AEQ is for the purpose of exploring the academic emotions among students related to their studies and situations that occurred in their academic journey. The subject matter of the AEQ consists of the 8 achievement-related emotions (enjoyment, hope, pride, anger, anxiety, shame, hopelessness, boredom) in various conditions consisting of class-related, learning-related, and test-related. Each of the conditions is further divided into three parts to indicate the emotional experience of the students before, during, and after their academic-related situations. The AEQ-S contains 32 items for each academic-related situation. It is also stated that the AEQ-S are appropriate to be administered in a study that was time-limited (Bieleke et al., 2021).

The AEQ-S was modified slightly to fit the nature and the population selected for this study. The modification of the AEQ-S will be done based on the interest of this study whereby the targeted emotional experience of interest will be cantering on the contextual based of the emotions experienced by the adolescents due to online learning situation amidst the pandemic. To ensure that the items in the questionnaires are understandable and able to be interpreted by the participants, some of the words was altered to match it based on the Malaysian secondary

school context. The modifications of the items in the questionnaire were relevant as the aim is to ensure that the item uses clear language clarity that will be understandable to the age group of the secondary school students. There are a few items in the AEQ-S that were rephrased as part of the adaptation to ensure the instrument is appropriate to the current study. The items that were rephrased for AEQ-S consist of 3 items to enable language clarity. The alteration in the statements was ensured to be as minimal as possible to retain the original structure of the statements. The statement "When I think of the time I waste in class I get aggravated" was modified to "When I think of the time I waste in class I get annoyed". Next, the statements that uses the word 'course' was changed to 'subject' and sentence that uses the word 'lecture' was changed to 'class'.

3.3.1 Instrument Structure

The structure of the instrument that was utilized to measure the effect of emotions during learning was divided into 3 sections consisting of demography, level of emotions state during online learning, and level of emotional state related to learning situation during COVID-19. The division of the sections will be as follows:

1. **Section A: Demography**

    This section will contain questions to gather details for the respondents' information. The questions consist of 8 items in which the respondents will choose one option from the listed of answers and fill in the blanks where relevant (eg. respondents' email address).

2. **Section B: Level of emotions state during online learning**

   This section of the questionnaire contains the questions with the items related to the feelings that are associated with the context of learning. There is a total of 32 for this section whereby the respondents are required to rate the listed emotions based on what they feel when based on the statement by indicating their answers based on the 5-point Likert scale given.

3. **Section C: Level of emotional state related to learning situation during COVID-19**

   This section contains 32 items pertaining the learning related emotions. The respondents will indicate the appropriate responses in the box provided based on the given Likert scale.

3.4 Pilot study

A pilot study was conducted prior to the actual data collection period. Conducting a pilot study prior to bigger research sample can help to discover important concerns that may have an impact on the larger study's results (Morin, 2013). In this study, a pilot test was conducted to ensure that there are no errors in the instrument utilized in this study. The items in the questionnaire were reviewed and checked for any errors and language clarity. Each item was carefully reviewed to ensure that the language used are understandable to the targeted participants of the study. The items in the questionnaire were also tested for its reliability by running the reliability test of coefficient, Cronbach Alpha. The result obtained for the Cronbach Alpha, α, from the pilot study is presented in the table below:

Table 2

Reliability of instrument based on the pilot study

Section	Variable	Number of items	Cronbach Alpha Value
B	Level of emotional state during online learning	32	0.860
C	Level of emotional state related to learning situation during COVID-19	32	0.906

3.5 Data Collection Procedures

The surveys was delivered to the study's intended sample, which is the secondary school students residing in Kuching, via an online survey form. The respondents' demographic information was collected through the section A of the questionnaire to enable classification of the respondents during the data analysing process. The respondents rated each question in Section B to Section C based on a Likert scale of 1 to 5, with (1) representing "strongly disagree," (2) representing "disagree," (3) representing "neutral," (4) representing "agree," and (5) representing "strongly agree". The usual Likert scale is a 5- or 7-point ordinal scale used by respondents to rate how far they agree or disagree with a particular statement. It was introduced in 1932 by Rensis Likert to measure attitudes (Sullivan & Artino, 2013).

To further discover on the factors that could have caused the emotions experienced by the students during online learning amidst the pandemic, an interview session was conducted among the students that has participated in the survey in which their participation was voluntary. The respondence was interviewed once they have confirmed through the informed consent that was presented to them and their guardian before to the beginning of the interview. Semi-structured interview was employed during this data collection method to enable the

identification of the factors that causes the emotions felt by the students. The interview with the respondence was conducted face-to-face. A set of questions was prepared to assist the researcher during the interview. Although the questions were constructed in English, the interviewees were also welcomed to answer the questions in native language (Sarawakian Malay). Such procedure was conducted to allow the interviewees to feel at ease during the interview in order to ensure that they are able to give responses that are genuine and factual based on their experience during the time when they attended online class. The responses of questions answered in the native language was carefully translated and transcribed in English.

3.6 Ethics of the Study

The most expressive data collection design or data analysis of sample survey must consider a wide range of ethical concerns, such as safeguarding human subjects from all types of harassment, safeguarding information privacy, and reporting data that accurately reflect the relevant data given by the respondents (Oldendick, 2012). Ethics in a study is important to ensure that no participants will be harmed during the study. The participants are allowed to withdraw at any time and the individuals that participate in the study should be voluntary and not forced by any individuals. Prior to the participants took part in the study, an informed consent was presented to the participants to give information on what the study is all about. The information of the participants was kept confidential and all the data that was obtained in the data collection phase shall be only used for the research purpose only. This is especially essential in circumstances when the respondent may have a personal connection to the survey sponsor, such as in an evaluation of a service delivery programme, where a potential respondent may be afraid that refusing to comply could negatively impact the services they receive (Oldendick, 2012). The distribution of the participants' data to other irrelevant individuals is considered unethical behaviour of the researcher.

In the current research, the informed consent was presented at the cover page of the questionnaire for the quantitative survey. As this study will be utilizing google form to distribute the questionnaire, the introductory page of the questionnaire will inform the participants on the purpose of the research and relevant information regarding the study. The participants that agree to participate will click the 'next' button. Next, they will be directed to the survey questions and data presented by them was used in the current study. Participants that disagree to participate will not be forced to complete the questionnaire and they are free to disregard the online survey forms.

For respondents in the qualitative study, they were debriefed on the purpose of the interview, and they will be guaranteed that their information will remain confidential. Before proceeding with the interview, they were also asked to confirm whether they agree to participate in the interview and was given assurance that they can freely withdraw anytime during the interview. The interviewees was also be informed that they are able to skip the questions that they may feel uncomfortable to answer or elaborate on. A consent letter was also presented and signed by the guardian and the interviewees to indicate that they have understood the purpose of the study and their responses to the questions asked during the interview will be used as part of the research for educational purposes.

3.7 Data Analysis Procedures

Throughout the statistical analysis of all the obtained data, the gathered data from the respondents' responses was analyzed using IBM SPSS software version 26.0. The output from the data analysis is then further interpreted in the findings and elaborated to answer the research questions and hypothesis of this study. The current study involved performing statistical data analysis that consists of descriptive data analysis and inferential data analysis. The descriptive data obtained from the demographic information of the respondents and the emotions that was

identified by the respondents to be significant in online learning whereby it is measured using the Discrete Emotions Questionnaire (DEQ). Meanwhile the inferential statistics data was obtained from the responses in the following sections of the questionnaire which is the emotions encountered in academic situations or can be identified as the achievement emotions that will be measured by the short version of the Achievement Emotions Questionnaire (AEQ-S).

Given that the current study also utilizes the qualitative design as a supporting data in the discovery of the extent of emotional factors towards academic related achievements, the data analysis procedures also include the process of identifying, collecting, organizing, and analyzing the qualitative data. The data for this section of the study was obtained from the input and insights received from the interview with the selected participants in which has also participated in the quantitative study.

3.7.1 Descriptive Data Analysis

Descriptive statistics describe the relation between observable variables or populations to describe data in a structured manner (Kaur et al., 2018). Perez-Vicente and Ruiz (2009) suggest the goal of descriptive statistics is to characterize the most essential aspects of the data sample, which we refer to as the quantities that offer information on the issue of concern that we are researching. The data will generate information on the measures of the variables such as the central tendency, distribution, and frequency as suggested by Kaur et al. (2018). In this study, the descriptive data is obtained by analysing the items in Section A of the questionnaire, excluding the respondents email information, and the data obtained from the Section B which represents the demographic data and the level of emotions experienced by students participating as respondents in this study.

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3.7.2 Inferential Data Analysis

According to Marshall and Jonker (2011), inferential statistics are being used to generalize conclusions from a sample group to a larger population. In other words, inferential statistics facilitates in making an interpretation of a population from a tested sample. The Spearman correlation analysis was used in this study to indicate the relationship between the emotions experienced in academic situations by the students towards their academic achievement. The items from section C will be used for the data analysis to indicate whether the emotion of achievement is related to the exam grade that is obtained by the secondary school students that participated in this study.

The justification for using Spearman Correlation test in the data analysis is due to the variable that was used to test the hypothesis of the current study. The spearman correlation is appropriate for ordinal data (Schober, Boer, & Schwarte, 2018). Given that the academic achievement of students in the current study was determined based on the grade of exam marks they obtained the most during their examination, students were classified according to their grades of scores. Therefore, the Spearman Correlation test was the most appropriate test to determine the correlation of the tested variables in this study.

3.7.3 Qualitative Data Analysis

The current study utilizes the qualitative data to explain and gather insights of the factors impacting the emotional experiences of adolescents distanced learning situations during the pandemic. The information gathered from the interviews and descriptions of the adolescents' personal views of their experience as a beginner of distanced learner will help to further generate understandings of the impact of emotions in their academic achievements from the students' perspectives. In line with as suggested by Rai (2018) in their study, depending on the

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original contexts, the qualitative data has the ability to generate deep and detailed understandings of human experiences, emotions, attitudes, and behaviour patterns. This statement has supported the main aim of including qualitative data in the research as emotions are subjective to the interpretation of the individual. Therefore, this type of data is the most suitable type implemented to enable further discovery of the factors that can be considered in a study involving emotions as an outcome of a situation.

The data collected from this section of the study has undergone processes whereby the collected data will be organized, compare, then analyzed. The data were categorized accordingly to determine whether there is any similarity between the responses due to the emotions experienced by the pupils. This has eased the process of data comparison to enable further exploration and discussion in the following chapters of the research. Additionally, these processes enabled a smoother process in deducing the conclusion of the findings from the study.

3.8 Summary

This chapter presented the methods and the procedures used in the data collection process in this study. The description of the relevant procedures and steps taken in data gathering will ensure the information gathered will be organized and sufficient to enable the analysis of data. Such measures are essential in research as it helps the researcher to identify whether the data collected is relatable and can be analysed in accordance with their interested subject of discovery.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.0 Introduction

This chapter will discuss the findings of this study based on the data collected from the targeted population of the current study, which is the secondary school students residing in Kuching, Sarawak. The findings will be based on the objective and hypothesis that was stated in the first chapter of this study. The results obtained from the data analysis will also be compared and discussed in line with the reviewed literature in this study.

4.1 Demographic Data

In accordance with the targeted population and sample size of this study, the overall number of respondents for the quantitative segment of the research is 381 participants consisting of secondary school students residing in Kuching, Sarawak. The respondents' demographic characteristics consisted of gender, age, year of study, class delivery method, and final assessment methods. The overall frequency and percentage of the participants are demonstrated in the table as follows:

Table 3

Overall Frequency of participants' demographic data

Demographic	Sub-profile	Frequency (*n*)	Percentage (%)
Gender	Male	102	26.8
	Female	279	73.2
Age	13 years old	27	7.1
	14 years old	43	11.3
	15 years old	52	13.6
	16 years old	99	26.0
	17 years old	160	42.0
Year of Study	Form 1	27	7.1
	Form 2	43	11.3
	Form 3	52	13.6
	Form 4	99	26.0
	Form 5	160	42.0
Class delivery	Synchronous	292	76.6
method	Asynchronous	44	11.5
	Self-learning	45	11.8
Final assessment	Online exam	333	87.4
methods	Project/Assignment	47	12.3
	Face-to-face exam	1	0.3
			N=381

Based on Table 3 above, it can be observed that most of the participants were female students which are consisting of 279 respondents (73.2%) whereas the male respondents totaled 102 respondents (26.8%). A large amount of the respondents in this study were from the age 17 years old represented by 160 students (42.0%) followed by 16-year-olds students by 99 students (26.0%) with the rest of the respondents from the age 15 years old with 52 students (13.6%), 14 years old with 43 students (11.3%), and 13 years old with 27 students (7.1%). The overall frequency of the respondents' year of study is similar to the frequency of the respondents' age group due to the fact that year of study in Malaysian secondary school is divided accordingly based on their age. Based on the class delivery method used by the educators, it was discovered that the majority of the respondents experienced synchronous or live class in which consisting of 292 participants (76.6%), followed by self-learning or self-directed learning with 45 participants (11.8%) and an asynchronous class consisting of 44 participants (11.5%). According to the division of the participants based on the final assessment methods, the majority of the participants were assessed via online examination which consisted of 333 participants (87.4%), followed by the participants that were assessed via project and assignment methods consisting of 47 participants (12.3%) and 1 participant (0.3%) reportedly was assessed via face-to-face examination.

In the qualitative component of this research, 5 individuals ranging in age from 16 to 17 years old were interviewed. There were three male students and two female students among the participants. All the participants were secondary school students from Kuching, Sarawak, with four from National Secondary School (Sekolah Menegah Kebangsaan, SMK) and one from Fully Residential School (Sekolah Berasrama Penuh, SBP). Every single respondent has had experience with online learning when they attended class using an online video communication network known as Google Meet. The table below summarizes the demographics of the interviewees:

Table 4

Summary of interview participants information

Participant	Gender	Age	Type of School
Fizuani	Male	16	National Secondary School (SMK)
Zikri	Male	17	National Secondary School (SMK)
Adly	Male	17	Fully Residential School (SBP)
Alia	Female	17	National Secondary School (SMK)
Iman	Female	17	National Secondary School (SMK)
			N=5

4.2 Reliability and Validity of Instruments in Actual Study

4.2.1 Reliability of Instrument

The instrument utilized in this study was checked for its reliability by using the IBM SPSS Software version 26.0. The value of the reliability Cronbach Alpha, α, was generated as follows:

Table 5

Summary of Cronbach Alpha, α, value for instrument reliability

Section	Variable	Number of items	Cronbach Alpha Value
B	Level of emotional state during online learning	32	0.862
C	Level of emotional state related to learning situation during COVID-19	32	0.864

Based on the reliability analysis of the instrument, the Cronbach Alpha, α, the value obtained from the analysis generated a value of 0.862 for the items measuring the level of emotional state during online learning, whereas the items of the level of emotion state related to learning situation during COVID-19 generated the Cronbach Alpha value of 0.864.

4.2.2 Validity of Instrument

The instrument validity was checked by using the Principal Component Analysis (PCA) and Varimax rotation with Kaiser normalization. Two variables from the questionnaire were tested for their validity. According to Shrestha (2021), factor loading values convey each variable's link to the underlying factors. Variables with loadings values greater than 0.40 imply that they are representative of the factor. The item from the instrument that was tested consisted of 64 items whereby each section (Section B and Section C) consisted of 32 items respectively. From the analysis, the loading factor for each item from the level of emotional state during online learning is ranging from 0.483 to 0.722 whereas the items for the level of emotional state related to the learning situation during COVID-19 have a loading factor ranging from 0.412 to 0.719. Since items from both sections of the instrument obtained a value of greater than 0.4, the items included in the instrument for this study are valid. Therefore, it is recognised that the instrument employed in this study is valid and has the ability to measure the intended subject of discovery in line with the purpose of this study. The full result generated from the analysis of the loading factors for each item is presented in the table below:

Table 6

Item validity for the Discrete Emotion Questionnaire (DEQ).

DEQ Items	Factor
Emotion subscale: Anger	
1. Anger	0.554
2. Rage	0.581
3. Mad	0.555
4. Pissed off	0.634
Emotion subscale: Disgust	
5. Grossed out	0.722
6. Nausea	0.655
7. Sickened	0.589
8. Revulsion	0.514
Emotion subscale: Fear	
9. Terror	0.582
10. Scared	0.647
11. Panic	0.586
12. Fear	0.545
Emotion subscale: Anxiety	
13. Dread	0.507
14. Anxiety	0.595
15. Nervous	0.654
16. Worry	0.637

Emotion subscale: Sadness

17. Sad	0.607
18. Grief	0.483
19. Lonely	0.651
20. Empty	0.586

Emotion subscale: Desire

21. Wanting	0.678
22. Desire	0.526
23. Craving	0.654
24. Longing	0.589

Emotion subscale: Relaxation

25. Easy going	0.632
26. Chilled out	0.490
27. Calm	0.586
28. Relaxation	0.679

Emotion subscale: Happiness

29. Happy	0.537
30. Satisfaction	0.644
31. Enjoyment	0.638
32. Liking	0.572

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Table 7

Item validity for Achievement Emotion Questionnaire Short version (AEQ-S)

AEQ-S item	Factor
Achievement emotion: Enjoyment	
1. I enjoy being in class.	0.578
2. I am looking forward to learning a lot in class.	0.412
3. I am motivated to go to this class because it is exciting.	0.699
4. I enjoy participating so much that I get energized.	0.639
Achievement emotion: Hope	
5. I am confident when I go to class.	0.617
6. I am full of hope.	0.509
7. I am confident because I understand the material.	0.582
8. Being confident that I will understand the material motivates me.	0.647
Achievement emotion: Pride	
9. I am proud of myself.	0.568
10. I think that I can be proud of what I know about this subject.	0.542
11. Because I take pride in my accomplishments in this subject, I am motivated to continue.	0.527
12. When I do well in class my heart throbs in pride.	0.517
Achievement emotion: Anger	
13. I am angry.	0.567
14. When I think of the time I waste in class I get annoyed.	0.613
15. I wish I didn't have to attend class because it makes me angry.	0.662
16. I feel anger welling up in me.	0.606

Achievement emotion: Anxiety

17. I feel nervous in class.	0.548
18. Even before class I worry whether I will be able to understand the material.	0.642
19. Because I'm so nervous I would rather skip the class.	0.460
20. I get tense in class.	0.466

Achievement emotion: Shame

21. I get embarrassed.	0.520
22. When I say anything in class I feel like I am making a fool of myself.	0.655
23. After I have said something in class I wish I could crawl into a hole and die.	0.612
24. Because I get embarrassed I become tense and inhibited.	0.611

Achievement emotion: Hopeless

25. I feel hopeless.	0.511
26. I have lost all hope in understanding this class.	0.559
27. Because I've given up I don't have energy to go to class.	0.719
28. I feel so hopeless all my energy is depleted.	0.704

Achievement emotion: Boredom

29. I get bored.	0.662
30. The lesson bores me.	0.663
31. I think about what else I might be doing rather than sitting in this boring class.	0.606
32. I get restless because I can't wait for the class to end.	0.641

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

4.3 Main Findings

4.3.1 Level of emotions during Online Learning

　　To discover the most common emotions experienced by the students during online learning, the Discrete Emotions Questionnaire (DEQ) was used by calculating the sum of the scores from each emotion subscale. The emotions that were experienced by students during online learning was measured by calculating the sum of score obtained from their rating of each emotion from the subscales of the basic emotions (anger, disgust, fear, anxiety, sadness, desire, relaxation, happiness). To indicate the strength of the state emotions experienced by the students, the scores obtained were divided into 4 categories consisting of very strong (score 16-20), moderate (score 11-15), weak (score 6-10), very weak (score 1-5). The emotion subscale with the highest score obtained (score ranging from 16-20) by the students was identified as the level of emotions most experienced during online learning.

Table 8

Frequency of emotions associated with online learning.

Emotion subscale	mean	Frequency	Percent	Standard Deviation
Anger	10.7900	38	10.0	3.50458
Disgust	8.6772	9	2.4	2.99969
Fear	12.0184	76	19.9	3.69312
Anxiety	15.3176	193	50.7	2.73023
Sadness	13.6247	88	23.1	2.60128
Desire	12.2572	62	16.3	3.30820
Relaxation	10.6063	17	4.5	2.90143
Happiness	11.5696	23	6.0	2.75175

From the analysis of the frequency of the emotions experienced by the students during online learning, it was found that the most common emotion strongly felt by the majority of the students is anxiety with a frequency of 193 (M=15.3176, SD=2.73023). Students also reportedly experience the emotion of sadness as reported by 88 respondents (M=13.6247, SD=2.60128), fear with a frequency of 76 (M= 12.0184, SD= 3.69312), and desire with a frequency of 62 (M=12.2572, SD=3.30820).

Similarly, it was also discovered from the interview with students whereby it was mentioned that the most felt emotions were related to sadness and dread. Based on the DEQ (Harmon-Jones et al., 2016) the emotions grouped in the emotion subscale of sadness include lonely, emptiness, grief, and sadness meanwhile the emotions grouped under anxiety consists of dread, anxiety, nervousness, and worry. Based on the interview, two emotions from each subscale respectively were mentioned.

"I would say it's lonely, empty, unpleasant, dreadful, and sometimes nervous due to not understanding what was taught in class."- (Fizuani)

"I think mostly I feel stressed, dreadful, lazy or demotivated, and somewhat frustrated."- (Adly)

The full score obtained by participants related to the level of emotions related to online learning is represented in the table below:

Table 9

Summary of respondents' scores for state emotion associated with online learning.

		Frequency	Percent	Valid Percent	Cumulative Percent
Anger	Moderate	156	40.9	40.9	40.9
	Very Strong	38	10.0	10.0	50.9

	Very Weak	26	6.8	6.8	57.7
	Weak	161	42.3	42.3	100.0
Disgust	Moderate	86	22.6	22.6	22.6
	Very Strong	9	2.4	2.4	24.9
	Very Weak	56	14.7	14.7	39.6
	Weak	230	60.4	60.4	100.0
Fear	Moderate	178	46.7	46.7	46.7
	Very Strong	76	19.9	19.9	66.7
	Very Weak	12	3.1	3.1	69.8
	Weak	115	30.2	30.2	100.0
Anxiety	Moderate	169	44.4	44.4	44.4
	Very Strong	193	50.7	50.7	95.0
	Weak	19	5.0	5.0	100.0
Sadness	Moderate	251	65.9	65.9	65.9
	Very Strong	88	23.1	23.1	89.0
	Very Weak	1	0.3	0.3	89.2
	Weak	41	10.8	10.8	100.0
Desire	Moderate	217	57.0	57.0	57.0
	Very Strong	62	16.3	16.3	73.2
	Very Weak	14	3.7	3.7	76.9
	Weak	88	23.1	23.1	100.0
Relaxation	Moderate	186	48.8	48.8	48.8
	Very Strong	17	4.5	4.5	53.3
	Very Weak	14	3.7	3.7	57.0
	Weak	164	43.0	43.0	100.0

Happiness	Moderate	235	61.7	61.7	61.7
	Very Strong	23	6.0	6.0	67.7
	Very Weak	14	3.7	3.7	71.4
	Weak	109	28.6	28.6	100.0
	Total	**381**	**100.0**	**100.0**	

4.3.1.1 Discussion

The current study has reported that the most common emotions are rated as strongly associated with distant learning experiences. The findings have suggested that anxiety, sadness, fear, and desire as the most experienced emotion by online learners. These emotions can be identified as negative emotions. In other words, it can be observed that the emotions that were identified to be common during online learning are related to negative affectual experiences.

With regards to the level of emotions experienced by the students during online learning, the most common emotion that was experienced by students during their time as distanced learners are identified as anxiety. Such event may have been caused by the worry that the students faced as they were uncertain of their expectations towards their shift from learning in school to depending solely on technology for their learning process concurs with the event of being in constant worry regarding the infection rate of the virus during the peak time of the viral infection. This result is in line with the research done by Kilinçel et al. (2020) that has discovered that the presence of a positive COVID patient or close contacts among or near one's family resulted in a rise in anxiety level 3.81 times. The adolescent may not only feel anxious due to the concern of the risks to be infected by the virus, but it may also cause by the uncertainty of the outcome of online learning have towards their academic achievements.

As mentioned in the literature review, adolescents are at the age of trying to build their self-identity through their educational goals (Verhoeven et al., 2018). The unpreparedness of the students to obligate as distanced learners may have contributed to their feeling of anxiety. This statement can be supported by the study done by Cleveland-Innes and Campbell (2012), emotion arises as part of the transition to virtual learning and the learning altogether. In addition, the virtual learning experience is different compared to the traditional teaching and learning in school as students were assessed differently given the nature of virtual learning that utilizes technological devices and platforms. Tech-savvy adolescents might not have any difficulty in coping with the different methods of assessment since it is common for teenagers nowadays to own a smartphone or gadgets. In households that might not have the same privilege, depending on gadgets for learning purposes might be a burden since it is known that gadgets are expensive which makes it even more inconvenient if the child had to share the device with their siblings if the household could not afford to own multiple devices to fit the needs of each child. Given that adolescence take their academic achievement seriously as part of their identity development journey, anxiety may arise as part of their concern towards their ability to cope with the lesson as a student learning from home while being responsible to facilitate their learning process.

Referring to our findings, sadness was found to be the emotion besides anxiety that was strongly felt by the students. The finding from this current study supports the result of past discovery by Cockerham and colleagues (2021) whereby it was discovered that unpleasant state of mind increased considerably throughout the pandemic, indicating that individuals experienced an increase in negative feelings such as despair, fear, and loneliness. The unfamiliarity of online learning in adolescents could contribute to such events. As students were not well-prepared to be exclusively committed to online learning, it could be assumed

that students are uncertain of their academic outcomes which could generate a possible number of negative emotions.

As our findings discovered that sadness was associated with emotional experience in online learning, such emotion could be caused by the performance of the students when they were assessed during the academic session amidst the pandemic. Considering the fact that students might have a high expectations of their academic achievement, sadness might be due to their high expectations of themselves whereby the student might expect that they perform better during online school. Staying at home during the Movement Control Order would give students opportunities to have ample time to invest in their academic duties, students could have expected that their academic performance would be better as information sources are wide given that they have the opportunity to utilize the internet as their source of information. Their final examination scores could be lower than their expectations as the assessment methods are different compared to the past which could be the contributing factor to such negative sentiment.

4.3.2 The Relationship Between Level of Emotional State and Academic Achievement

Research hypothesis 1 utilizes the Spearman Correlation tests to determine the relationship between the level of emotional state during online learning and academic achievement during online learning amidst the COVID-19 pandemic. The research hypothesis is as stated below:

H_{1_2}:   There is a significant relationship between the level of emotional state and the academic achievement of secondary school students during online learning.

To further understand and identify the common emotions experienced by students during online learning, the sum of scores for each achievement emotion (enjoyment, hope, pride, anger, anxiety, hopeless, shame, and boredom) was calculated and the total score each emotion was analyzed using the Spearman correlation test to identify the emotions that correlates with the academic achievement of the students.

Table 10

Summary Table of Spearman Correlation Analysis

Variable	M	SD	r	p
Enjoyment	12.5092	2.89883	0.153	0.003
Hope	13.4304	3.11845	0.315	0.000
Pride	14.5013	2.89793	0.461	0.000
Anger	10.6562	3.47849	-0.079	0.122
Anxiety	14.0052	3.27510	0.228	0.000
Shame	12.9055	3.65938	0.048	0.353
Hopeless	12.9055	3.37506	0.027	0.604
Boredom	15.2310	2.80492	0.180	0.000

From the analysis to determine the correlation between the level of emotional state and academic achievement, it has been found that there is a correlation for emotions of enjoyment, hope, pride, anxiety, and boredom based on p-value obtained which is p-value is less than 0.05. As the value generated was lesser than 0.5 the strength of the correlations for the variables was weak positive. Although all of these emotions demonstrated a weak positive correlation, the emotion that shows to have greater strength in association to the academic performance is pride with p=0.000 and r=0.461. The mean value for pride is 14.5013 with standard deviation 2.89793. in other words, it can be said that there is a weak positive significant relationship

between level of emotional state and academic achievement of secondary school students during online learning.

Subsequently, the findings also revealed that there is a relationship between enjoyment and academic achievement with r=0.153 and p=0.003. From this result, it is identified that the strength of the correlation is weak positive, with mean score of 12.5092 and standard deviation of 2.89883. Referring to this result, it can be said that there is a weak, positive correlation between enjoyment and student's academic achievement during online learning, which is statistically significant.

The result also demonstrated the link between hope and academic achievement. The p-value obtained by the achievement emotion from the analysis is 0.000 with r=0.315 which indicated that there is a weak positive relationship between the tested variable. The mean value was demonstrated to be 13.4304 and standard deviation of 3.11845 for achievement emotion hope. Thus, it can be observed that emotion of hope can have an effect on academic achievement of students.

Anxiety was also found to have a correlation with academic performance with r=0.228 and a p-value of 0.000 which is <0.05. The observed mean was 14.0052 with a standard deviation of 3.27510. From this value, the outcome of academic achievement is contributed by the emotion related to anxiety that was experienced by the adolescent learners. It can be said that there is a weak, positive correlation between anxiety and academic achievement of secondary school student during online learning.

The emotion related to boredom was also demonstrated based on the result of the analysis whereby the Spearman Correlation indicated that there is an association with academic achievement. The relationship was significant at 0.00 with coefficient value of 0.180. The mean score for boredom was 15.2310 with standard deviation of 2.80492. From this association, the

finding indicated that there is a weak, positive correlation between boredom and academic achievement of student during online learning, which is statistically significant.

In contrast, the findings shows that there is no association between anger, shame, and hopelessness towards academic achievement. The p-value obtained for these emotions was observed to be 0.122 for anger, 0.353 for shame, and 0.604 for hopelessness which indicated that there is no relationship between the variables whereas the correlation coefficient for these emotions were at -0.079 for anger, 0.048 for shame, and lastly 0.027 for hopelessness. In other words, it can be generalized that there is a weak, negative relationship between anger and academic achievement of students during online learning, which is not statistically significant. Meanwhile, it was observed that there is a weak, positive relationship of shame and hopelessness towards academic achievement of students during online learning.

4.3.2.1 Discussion

The overall findings suggested that emotional state is in fact, correlated to the academic achievement of the students whereby emotions related to enjoyment, hope, pride, anxiety, and boredom are the contributing emotions for this relationship. In contrast, emotion related to anger, shame and hopelessness are found to be not affecting the student's academic achievement. The finding from current research supported the finding from past research done by various scholars (Ahmed et al., 2013; Camacho-Morles et al., 2021; Mega et al., 2014; Luftenegger et al. 2016; Pekrun et al., 2017; Putwain et al. 2012; Sainio et al. 2019; Toti et al., 2020) whereby the finding found that achievement emotion of enjoyment, hope, and pride are related to the performance of students.

The finding from this study aligns with past research whereby it was discovered that learners who are self-regulating and experiencing satisfaction and pride while learning are more likely to acknowledge both the work and the results, and so are more capable of reaching

greater levels of learning accomplishment (Putwain et al., 2012; Sainio et al., 2019; Villavicencio & Bernardo, 2012). As students were solely responsible for tracking their learning progress, those who experience pride could indicate that they have better motivation in committing to the academic responsibility. According to Falicidad and Bernardo's (2013) research, pupils who reported lower levels of pride, self-regulation appeared to be not linked to examination scores. Thus, previous statement indicates that the learning situation of students during the pandemic required students to be responsible to their learning such as planning their own time management schedule, monitor own progress, seek additional information from various sources, and reflect on their academic progress. In other words, distant learners are expected to be self-regulated learners due to the absence of educators as the learners and educators are at different location with online meeting platform as their sole method of communication.

The limited interaction between student-teacher may also be a contributing factor that will affect the level of understanding of the pupils towards their lesson. The finding from the interview with the respondents in the qualitative segment of this research supports this statement whereby it was mentioned by one of the interviewees that they feel that they prefer learning from school instead since the educators are physically present in which makes it easier to ask questions and discuss if there is a need for further explanation regarding the learning materials.

"I think I will be able to understand better if learning is not conducted online. As teachers are physically there, it is easier to ask them for further explanations whenever I have difficulty in understanding the lesson. Taking directly to teachers will help clarify any unclear topics that was taught during class." – (Alia)

The inability of educators to constantly track the progress of students individually due to various commitments and time constrain will require students to be a self-regulated learner and strive for the sake of their academic excellence. If students feel proud throughout their learning process, it could predict that such student will be able to obtain excellent academic result.

Referring to findings from past similar research (Ahmed et al., 2013; Pekrun et al., 2006), our finding demonstrated similar result for the correlation of enjoyment and pride towards academic achievement. As mentioned by Ahmed et al. (2013) in their study, they found that pride and enjoyment usually will show similar pattern in its relation to self-regulation and academic excellence. As an explanation, it can be assumed that student who experience enjoyment will be able to self-regulate their learning, which in turn will produce higher academic outcomes and thus resulted to feeling of pride.

In addition, hope is also associated to predict academic achievement along with enjoyment and pride. The finding in this study proves that these three emotions is somewhat related to be the predicators of academic excellence in which can be supported by similar findings from previous research (Mega et al., 2014, Pekrun et al., 2011). The linking of pride, enjoyment, and hope to academic achievement has been suggested to be relevant in learners' self-regulation and motivation (Mega et al., 2014). It is assumed that hope is associated to learners' motivation. If student experience emotion of hope in learning over the course of their learning, student might be motivated to actively participate in class which in turn will help them to grasp the concepts of the lesson effectively. In conjunction to this event, understanding will induce learning enjoyment that will subsequently, enable self-regulation and produce good grades that will end with experiencing pride. As suggested by past research (Mega et al., 2014; Pekrun et al., 2011; Pekrun et al., 2002), the finding from the current study indicates that the

positive emotions consisting of hope, pride, and enjoyment are predictors of academic excellence.

4.3.3 Factors Influencing Emotions Experienced by Students During Online Learning

As emotion is complex and is different for individual due to individual differences, an exploration of the factors that contributed to the sentiments experienced by adolescents during online learning was carried out, in line with the research objective 3 and research question 3. The outcome of this discovery was obtained from the response of the students that has participated in an interview with the researcher. Prior to inquire on the factors influencing the emotions experienced during online learning, respondents were asked to recall their experience when they were attending their online classes and list a few emotions that they felt during that specific time based on the strength and occurrence of the emotions. The emotion that was ranked to be the strongest was inquire on the factor that caused such emotion.

Emotions Experience during online learning

From the enquiry via the dialogue with the respondents, each respondents experience different emotions which is due to the different environment that 4 out of 5 participants has experienced during the time that they were attending class online. The common trait of emotions that each participant experienced can be identified as negative sentiments. When queried about their affective experiences as a remote learner, each participant has a unique set of emotions experiences.

> *"I would say its lonely, empty, unpleasant, dreadful, and sometimes nervous due to not understanding what was taught in class."-(Fizuani)*

"I think mostly I feel stressed, dreadful, lazy, or demotivated, and somewhat frustrated."

-(Adly)

"Anger, stress, mostly rage and irritated. Other feelings that I felt during that time is annoyed." - (Alia)

"I feel that there are a pleasant and unpleasant feelings during that time. If I were to list the feelings, I would say I feel annoyed, stressed, relief, and happy in some ways but these feelings are different for each day." -(Iman)

While only one participant felt emotions related to positive affectual experience. It was mentioned that the emotions were influenced due to being in the comfort of their personal space. The participant also described other emotions that was associated to their experience as remote learner which can be identified as negative emotions.

"I feel relaxed since I can be at home, in my room and comfortably listen to teachers teaching. Sometimes, I would feel confused as it is harder to understand sometimes, and it makes me feel 'blurred'. There are times when the teacher calls our names in class, I will panic and nervous since I might be called anytime because my teacher always calls peoples name randomly to answer question in class." -(Zikri)

Contributing Factors to Emotions Experienced during Online Learning

Prior to discovering the factors of contributing to their emotions, participants were asked to rank emotions in order of most felt to the least occurred emotions. The participants then will describe the contributing factors to the specific emotion that have occurred most of the time during their online class period. The first respondent mentioned that the most common feeling was loneliness. When asked to describe the factor that caused such emotion, Fizuani

clarified that online learning makes him feel lonely due to lack of social interaction with his peers. He then adds that online learning feels different:

> *"Being at home and listen to the teacher teaching feels different without a friend beside me. Besides, in normal school time I would usually hangout with my friends." - (Fizuani)*

Besides loneliness, the feeling of demotivated was also described by one of the interviewees as feelings that is strongly felt as an online learner. The 17-year-old male student mentioned that the main cause of the emotion is due to the distractions surrounding him:

> *"Learning from home is a lot harder since there are distractions around. For me I think the strongest distraction is that my phone is always beside me so I would end up playing with my phone and scrolling social media during class." –(Adly)*

Similarly, another student that has participated in the interview also mentioned that she was easily distracted by her phone even when the teacher is teaching which prevented her from focusing on class.

> *"...if at home I will always be distracted by my phone." –(Alia)*

Alia's response above is when she was asked to describe whether she would prefer learning by going to school physically or online class, in which she mentioned that she did not prefer online class due to the distractions that was around in the learning environment at home. In her description when she was asked to indicate the most common emotion as online learner, Alia mentioned that she experiences 'rage' most of the time. She then further added that it was due to the class environment that she felt was not pleasant due to technical problems from the teacher's side and the unconducive environment at home. She explained that there is always some high-pitched sound present when the teacher was teaching which she mentioned might be due to the issues regarding technical things on the teacher's side:

"There always seem to be technical problem faced by our teachers during teaching. I get very irritated when the voice sounded too high pitch or too loud even when my laptop volume is on low, mostly caused by the teacher's mic. The high pitch sound makes me feel irritated and enraged as it makes me feel angry most of the time since I can't focus on the lesson" – *(Alia)*

Apart from loneliness, demotivation, and rage, other emotion describe from the perspective of virtual learners are the feeling of 'annoyed' mentioned by Iman and feeling of 'relaxed' by Zikri. From Iman's perspective, she mentioned that the factor to her feeling as such is due to the workload given by the educators which she thinks it is more compared to when school was done by going to school physically.

"I feel annoyed because there is too much work given by our teachers. There are always some class activities that we need to do. Each subject will have their own class activity that need us do. It does makes me feel overwhelmed sometimes."-*(Iman)*

As for Zikri, he justified his experience is due to the flexibility of online learning and not having to meet many people on daily basis. He also added that online learning resulted to him having more work that needs to be done. Although both participants mentioned different emotions experienced as a remote learner, it is found that both Zikri and Iman somehow felt relieved that classes are done online due to not having to meet a lot of people on daily basis.

"It is because I don't have to meet people like when I go to school. Plus, I am a comfortable at home as I can relax more. I feel that learning online is more flexible compared to going to school. But then, the workload is more compared to normal school. So, both have its good side and bad side."-*(Zikri)*

"..learning online makes me feel relief because I feel that it is good that I don't have to meet a lot of people every day. I always feel insecure when I am at school surrounded by people."-(Iman)

Thus, from the overall responses regarding the contributing factors of sentiments as virtual learners, it can be summarized that each emotional experiences were due to different circumstances that was contributed by a variety of reason. Whether it be an unconducive setting, demanding workloads, a lack of peer contact, the availability of distraction, or flexible scheduling, each individual's experience is unique based to their surroundings.

Intriguingly, it is found that some of the emotional experiences has some similarity. For instance, two of the respondents mentioned that they feel relieved and relaxed since they do not have to meet people in person, yet the sense of tension was also characterised as a feeling that was commonly felt throughout the learning experience as a first-time remote learner. Although there is no definite set of feelings that was experienced by each respondent, it can be noted that the experiences are to some extent comparable given that the respondents are generally 17-year-old students with the exception of one 16-year-old student.

4.3.3.1 Discussion

The aim of our study is to discover the influence of emotions towards academic achievement which consequently will be beneficial if factors contributing to the affectual experience is also considered. From the findings on the factors influencing emotions of online learners, it was found that the factor that has contributed such emotion is due to coping with the responsibility of a distant learner. The respondent mentioned that task given has increased compared to the pre-pandemic days. As mentioned by one of the respondents, the contributing factor to feeling stressed is due to the overwhelming tasks given by educators. This finding

aligns with the discovery made by Cleveland-Innes and Campbell (2012) whereby the study found that owing to the overwhelming inability to combine different tasks and obligations, distant learning can induce stress and anxiety. Similarly, our findings matched with the findings from a study by Commodari and Rosa (2021) regarding adolescence as remote learners during first wave of COVID-19 pandemic in Italy, whereby it is mentioned that students complained that they were burdened by the overwhelming task given to them by their educators. Thus, our finding suggested that educators should consider giving lesser task for students to complete during online learning. No doubt that giving more homework could benefit the students in the long run as homework can be seen as a medium that could help student discover and practice their knowledge through the activities given by their teachers. However, it is crucial that considerations should be given to these adolescents given that they are too, unfamiliar with the different learning environment considering that they have been used to the traditional face-to-face class ever since they entered school way back in their pre-school days.

The interviewed participant mention of feeling demotivated due to distraction during e-learning. This indicated that the learner's motivation in learning was lower as a result of online education. Findings from this study confirms to the similar study by Klootwijk et. al (2021) with regards to adolescents' motivation in academics for the period of COVID-19 pandemic. Their study found that students were less motivated to commit to their academic commitments during online school compared to physical school period. The lack of motivation to commit in online learning can also indicate learners are less engaged in learning session. Similarly, it is also found that increased screen time and smartphone accessibility were frequently recognised as key causes of distraction; nevertheless, underlying variables are likely to include unexpected changes in everyday settings, anxieties about personal and family health, and future uncertainty (Cockerham et al., 2021). The various possible events mentioned are possible contributors of adolescents less engagement and motivation as learners amidst the pandemic. Due to the fact

that the information regarding the virus was very limited with concurring event of increasing daily infection rate and death count, it is notable that students might be less interested in committing to their duties as learners due to the overwhelming events that has taken place during the pandemic. For instance, the students might feel overwhelmed with the constant updates regarding the latest news of the COVID-19 situation that occurs not only in Malaysia but all the countries across the globe. Various variants of the virus were reported such as the Alpha (B.1.1.7) variant that was identified from United Kingdom at the end of the year 2020 and the Beta (B.1.351) variant that was reported in South Africa not long after the variant of concern was reported in United Kingdom (Cascella et al., 2022). The concern regarding the reported variant of the virus could be a contributing factor that influences the emotions of these adolescents as the new variant were reported to be more deadly compared to the first discovered variant of the virus that was first reported. Additionally, as vaccines was still underway with virologist worldwide are collaborating to find the best method of creating the vaccines during that time, it is no doubt that such situation is affecting the emotional states of these adolescents which makes them have the difficulty to put their focus entirely on their academic commitments.

Lack of social interaction among peers was also identified in the present study as the contributing factor of emotional experiences as distant learners amidst the pandemic. As suggested by Adnan and Anwar (2020), academic institutions serve as hubs for socialising and events. Many children and young people would miss out on social engagement activities that are essential for growth and learning if curriculums are halted. According to the participating respondent, it was mentioned that the absence of their peers in learning environment has contributed to the feeling of loneliness. With regards to such emotion, learning was less enjoyable.

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Although it can be acknowledged that the students have no choice but to comply to make use of online platform for their academic session during the pandemic, their emotional well-being was affected due to this transition. In addition, the whole pandemic situation is foreign to most individuals of different age be it adults, adolescents, or children. The combination of various factors could be an indication that contributes to the overwhelming sense of negative affectual experiences for the adolescent learner in times of the pandemic.

CHAPTER FIVE

LIMITATION, IMPLICATION, RECOMMENDATION AND CONCLUSION

5.0 Introduction

This chapter will cover on the discussion regarding the limitations, recommendation, and conclusion related to the current study. The discussion covered in this chapter will also address the relevant discussion to conclude the overall research.

5.1 Limitations of Study

Findings from this research may have its limitations due to the design of this research. Firstly, the participant of this research is limited to adolescents in secondary school with the age ranging from 13 to 17 years old. It is important to note that the outcome for this study cannot be generalized to explain similar events that are related to other age range population such as primary school students and university students. As this study is only depending on online survey for the distribution of questionnaires, the participating individuals in this study may be weighted at a certain area in Kuching, Sarawak due to the dependency of using social media during the distribution of the questionnaire. It is also noteworthy that the students participated in this study have experienced different types of delivery methods used by their educators. Since respondents are exposed to the different types of delivery methods in teaching session, emotions experience by the students might be affected by the delivery methods. Future research should consider selecting participants with similar lesson delivery methods used by educators to indicate whether there is a consistency of type of emotions reported by participants. Such considerations may be useful as the emotion reported by respondents in this study might be due to delivery method used by educators in the e-learning setting. The current study also

reported that the respondents are mostly female. Since the current study is centering on a discovery related to emotions, the number of respondents based on gender should be considered. In conjunction to this event, the findings from this research may weighted based on the perspective of female rather than male since majority of the respondents are female (73.2%). Although this study has presented some limitations, the findings from this study has provided understanding regarding the influence of learners' emotion towards academic achievement. The overall insights gained from this research is still applicable to be used as a reference for future research that has a similar nature of study.

5.2 Implication of study

The present study will contribute significantly to a better understanding of the influence of teenagers' emotions toward learning and academic achievement in a concurrent event of exclusive online learning. Despite several studies concentrating on university students about the relationship of emotion to academic achievement, there has been little research identifying such a condition among teenagers' samples. Although there are similar studies involving adolescents, prior studies only involved measuring the influence of negative sentiments towards the students' academic performance. Furthermore, the current study fills a gap in the research since there has been little research done in the Asian setting, particularly in Malaysia. Secondary school students in Malaysia have not had any experience in conducting distanced learning in which notably should be taken into consideration in which made the current research significant to provide researchers and scholars further insight regarding the extent of emotional state impacting their academic achievement.

According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the shutdown of academic institutions to combat and curb the virus's transmission

affects nearly 90% of students globally (Commodari & Rosa, 2021). The current study was conducted based on the students experience as online learners amidst the pandemic. Emotional experiences of the students may be different from time prior to the COVID-19 pandemic. Therefore, the current study adds to the body of knowledge whereby it helps to recognize the impact of the emotional experience due to the pandemic added with the responsibility of these students to maintain and thrive in their academics despite their first-time experience as a distanced learner.

5.3 Recommendations

Since this study only limited to identifying emotions related to academic achievement, it should be note that the external contributing factors to emotions experience to academic related situation also includes other factors such as the emotion regulation, self-regulation learning skill, and motivation level of the students. It is recommended that future research should also measure these factors to find the relationship between these factors that will subsequently effect emotion and the academic achievement of the students. Using instruments to measure these factors might generate a more accurate results that could explain the effect of these factors to the emotion encountered by the students. Measuring the level of motivation obtained by respondents along with their emotion regulation skill and self-regulation learning skill will be helpful in terms of dividing respondents into categories based on the scores obtained for these factors. By doing so, the result generated from inquiring the emotion experience during their learning can be deduced based on the extent of its effect on their academic achievement. Considerations in applying such procedure will be insightful as the researcher will have control on the level of motivation and self-regulation learning skill.

Next, the current study does not compare the differences based on gender in the consequences of affectual experiences towards academic achievement. Future study should consider comparing the responses according to gender to indicate whether the perception of the online learning experiences will generate contrasting results. Such discoveries might be useful in the future for the purpose of finding the best teaching method that will suit students' need if situation of utilizing e-learning method in educational institution is once again utilized as the main educational delivery method.

5.4 Conclusion

The simultaneous event of exclusively learning online among the secondary school students due to the lockdown as implemented by the government during the peak infection period of the COVID-19 pandemic has given the adolescents no choice but to adapt as a virtual learner. The current study has suggested that the majority of the students experience emotions related to anxiety, sadness, desire, and fear in an online learning situation. With regards to the correlation between emotions and academic achievement of online learning during the COVID-19 pandemic, this study's findings revealed that there is a correlation between academic achievement and level of emotions, with achievement emotions of enjoyment, hope, pride, anxiety, and boredom discovered to be determinants of adolescents' academic performance. The finding demonstrated that the hypothesis of this study was accepted. Furthermore, based on the responses of participating students, the source of contributors to such emotions was discovered, with the factor of the emotional experience being due to overwhelming tasks, distraction during e-learning due to easy access to smartphones, and a lack of social connection among peers.

The overall findings from this research provide an insight based on the discovery of the extent of emotional experiences correlate with adolescents' academic achievement during the period of the COVID-19 pandemic. Since this study focused on adolescent emotional experiences related to academic performance, the current study's findings apply to understanding the extent of emotional experiences as distant learners, while also taking into account that this is the first time that educational institutions nationwide are exclusively conducting academic sessions through an online platform.

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APPENDIX A

FACULTY OF COGNITIVE SCIENCE AND HUMAN DEVELOPMENT

BACHELOR OF PSYCHOLOGY (HONOURS)

RESEARCH TITLE: THE INFLUENCE OF EMOTIONS TOWARDS SECONDARY SCHOOL STUDENTS' LEARNING AND ACADEMIC ACHIEVEMENT DURING COVID-19 PANDEMIC.

</div>

My name is Nur Puteri Sabrina Binti Mohamad, a third-year undergraduate student from University Malaysia Sarawak (UNIMAS) that is currently pursuing a Bachelor of Psychology (Honours). I am currently conducting my final year research project titled 'The Influence of Emotions Towards Secondary School Students' Learning and Academic Achievement During COVID-19 Pandemic'. The purpose of this study is to discover the effect of the emotions towards secondary school students' learning and academic achievements amidst the COVID-19 pandemic outbreak in Malaysia. The information gained from this study will be strictly used for research purposes only and respondents' personal data will be strictly protected. Participants are allowed to withdraw from the study at any given time and shall not be forced to proceed at any given circumstances. Your participation in the study will be a huge contribution to the research in determining its success throughout the process of the study. Your consideration in spending your time and cooperation to participate in this research will be greatly appreciated. Thank you.

By proceeding to the next section, you will be identified as a respondent/participant in this study. Please indicate whether you agree to proceed to the next section.

☐ Yes

☐ No

Proceeding to answer the questionnaire will indicate your consent in participating in the study.

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THE INFLUENCE OF EMOTIONS TOWARDS SECONDARY SCHOOL

STUDENTS' LEARNING AND ACADEMIC ACHIEVEMENT DURING COVID-19

PANDEMIC.

Section A: Demographic

This section consists of the questions for the purpose of gathering basic information of the participants. Instruction: Please select one (1) answer (or fill in the blanks) for each of the following questions. Tick (√) the relevant boxes.

1. Email: _____

2. Age:　13 Years old　　　　　☐

　　　　　14 Years old　　　　　☐

　　　　　15 Years old　　　　　☐

　　　　　16 Years old　　　　　☐

　　　　　17 Years old　　　　　☐

3. Gender:

　　　　Male　　　　　☐

　　　　Female　　　　　☐

4. Year of study:

　　　　Form 1　　　　　☐

　　　　Form 2　　　　　☐

　　　　Form 3　　　　　☐

　　　　Form 4　　　　　☐

　　　　Form 5　　　　　☐

5. On average, what is the range of scores that you would mostly get in your examinations during the time when you attended class from home (PDPR)?

Please indicate (√) in the box below. **Note: Choose one (1) only.**

A (100-80) ☐
B (79-65) ☐
C (64-50) ☐
D (49-40) ☐
E (39-0) ☐

6. Type of class delivery method mainly used by your teachers:

Live class/synchronous class

Note: Virtual class through online platform (eg google meet, zoom) ☐

Asynchronous
Note: Teacher provided recorded video of their teaching session. ☐

Self-learning
Note: Teacher mostly give activities/homework to be completed. ☐

7. Final assessment methods

Online exam ☐

Project/assignment-based assessment ☐

Others (please indicate): _____ ☐

8. How would you rate your level of understanding of the learning materials during online learning?

Excellent: High level of understanding towards the syllabus. ☐

Very good: Above average level of understanding towards the syllabus. ☐

Satisfactory: Moderate understanding of syllabus, know the basic concepts. ☐

Weak: Below average level of understanding of the syllabus. ☐

Very poor: Unable to understand the syllabus. ☐

Section B: Level of Emotion State During Online Learning

Malaysia has been adapting to online learning to conduct learning and teaching process to all schools during the outbreak of the COVID-19 virus. While attending classes from home as you listen to and watch your teachers teaching you from the screen of your gadgets (e.g. laptop, tablet, and phone), there are some emotions that you may have felt during these situations.

Instruction: This section of the questionnaires consists of the emotions that you may have encountered in online class. Please indicate your responses using the scale provided as follows (1=Not at all to 5=Extremely strong) in the box provided below. Please tick (√) in the relevant boxes.

1	2	3	4	5
Not at all	**Weak**	**Moderate**	**Strong**	**Extremely strong**

Below are some of the emotions that you may or may not have experienced during online learning. To what extent did you experience these emotions?

No.	Emotions	1	2	3	4	5
1.	Anger					
2.	Wanting					
3.	Dread					
4.	Sad					
5.	Easy-going					
6.	Grossed out					
7.	Happy					
8.	Terror					
9.	Rage					
10.	Grief					
11.	Nausea					
12.	Anxiety					
13.	Chilled out					
14.	Desire					
15.	Nervous					

16.	Lonely					
17.	Scared					
18.	Mad					
19.	Satisfaction					
20.	Sickened					
21.	Empty					
22.	Craving					
23.	Panic					
24.	Longing					
25.	Calm					
26.	Fear					
27.	Relaxation					
28.	Revulsion					
29.	Worry					
30.	Enjoyment					
31.	Pissed off					
32.	Liking					

Section C: Level of Emotional State Related to Learning Situation During COVID-19

Attending classes might generate a variety of emotions. This section of the questionnaire is about the emotions you might have encountered when in classroom sessions. Please recall some typical classroom experiences that you have encountered during your studies before completing the questionnaires.

Instruction: This section of the questionnaire contains the questions associated to the feelings that you may have encountered during class. Please indicate the feelings that you typically feel during that time using the provided scales (1=strongly disagree to 5=strongly agree) in the box provided below. Please tick (√) in the relevant boxes.

1	2	3	4	5
Strongly disagree	Agree	Neutral	Agree	Strongly agree

No.	Statements	1	2	3	4	5
1.	I enjoy being in class.					
2.	I am looking forward to learning a lot in class.					
3.	I am motivated to go to this class because it it's exciting.					
4.	I enjoy participating so much that I get energized.					
5.	I am confident when I go to class.					
6.	I am full of hope.					
7.	I am confident because I understand the material.					
8.	Being confident that I will understand the material motivates me.					
9.	I am proud of myself.					
10.	I think that I can be proud of what I know about this subject.					
11.	Because I take pride in my accomplishments in this subject, I am motivated to continue.					
12.	When I do well in class, my heart throbs in pride.					

13.	I am angry.					
14.	When I think of the time I waste in class I get annoyed.					
15.	I wish I didn't have to attend class because it makes me angry.					
16.	I feel anger welling up in me.					
17.	I feel nervous in class.					
18.	Even before class, I worry whether I will be able to understand the material.					
19.	Because I'm so nervous I would rather skip the class.					
20.	I get tense in class.					
21.	I feel hopeless.					
22.	I get embarrassed.					
23.	When I say anything in class I feel like I am making a fool of myself.					
24.	After I have said something in class I wish I could crawl into a hole and die.					
25.	Because I get embarrassed, I become tense and inhibited.					
26.	I have lost all hope in understanding this class.					
27.	Because I've given up, I don't have energy to go to class.					
28.	I feel so hopeless all my energy is depleted.					
29.	I get bored.					
30.	The lesson bores me.					
31.	I think about what else I might be doing rather than sitting in this boring class.					
32.	I get restless because I can't wait for the class to end.					

THE INFLUENCE OF EMOTIONS TOWARDS SECONDARY SCHOOL STUDENTS'

LEARNING AND ACADEMIC ACHIEVEMENT DURING COVID-19 PANDEMIC.

Interview Questions

Sample Questions

1. Would you mind introducing yourself briefly?

2. During the time when you attended class during the MCO (Movement Control Order) period, what was the most used teaching method used by your teachers? (Live class/pre-recorded video/related video regarding the syllabus/self-learning)

3. Do you have any group works given by your teachers? If yes,

   (a) How would you describe the process of communicating with your friends/classmates during the discussion of the project?

   (b) What medium would you usually use during the discussion? (WhatsApp/Video call/Discord/Zoom/Google Meet)

4. Based on your experience, how would you rate your understanding? (good/moderate/weak)

5. In your experience when attending online class, what are the emotions that you experienced mostly throughout the experience? Can you list down a few emotions?

6. Can you rank these emotions in the rank of the most experienced to the least experienced emotions?

7. Earlier you mentioned that you experienced (emotion) the most during that time. Can you list a few factors that may have made you feel the emotion?

8. Do you prefer learning from school or online? Any reason for your answer?

FACULTY OF COGNITIVE SCIENCE AND HUMAN DEVELOPMENT

BACHELOR OF PSYCHOLOGY (HONOURS)

Interview Consent Form

Research Title

The Influence of Emotions Towards Secondary School Students' Learning and Academic Achievement During Covid-19 Pandemic.

Description of research

The research is aimed to discover the effect of the emotions towards secondary school students' learning and academic achievements amidst the COVID-19 pandemic outbreak in Malaysia. The purpose of the interview is to identify the emotions experience during learning and the possible factors contributeed to the emotions experienced by adolescence aged 13 to 17 years old as distanced learners.

Description of the Study Procedures

If you decide to allow your child to participate in this study, he/she will be asked to answer and describe their experience attending class at home as an online learner and the emotions and factors that contributed to their emotional state as a student learning through online platform. The interview will approximately take between 20-30 minutes.

Does my child have to participate?

Your child's participation in this study is voluntary. Your child may decline to participate or to withdraw from participation at any time. You can agree to allow your child to be in the study now and change your mind later without any penalty.

What if my child does not want to participate?

In addition to your permission, your child must agree to participate in the study. If you child does not want to participate they will not be included in the study and there will be no penalty. If your child initially agrees to be in the study they can change their mind later without any penalty.

Right to Refuse or Withdraw

The decision to participate in this study is entirely up to you and your child. You are welcome to observe the interview if you wish. Your child may refuse to take part in the study **at any time**. Your child has the right not to answer any single question, as well as to withdraw completely from the interview at any point during the process; additionally, you have the right to request that the interviewer not use any of the interview material.

Whom to contact with questions about the study?

Prior, during or after your participation you can contact the researcher **Nur Puteri Sabrina Binti Mohamad** at **014-3952364** or send an email to **nurputerisabirna@yahoo.com** for any questions or further enquiries regarding the research.

By signing this form, I agree to the terms stated below.

1. I confirm that my child's participation in this research project is voluntary.
2. I understand that I will not receive any payments for participating in this research interview.
3. I understand that my child have the right to decline to answer any question or end the interview.
4. I confirm that the research interview will last approximately 20-30 minutes.
5. I understand that my child's confidentiality as a participant in this study will remain secure.
6. I have read and understood the explanation provided to me by the researcher.
7. I have been given a copy of the consent form.
8. I understand that the researcher may take notes during the interview and might require taking a picture with them as a prove of the interview session.
9. I agree that the researchers may publish documents that contain quotations by my child.

By signing this form, I agreed to the terms stated above.

Participant's Signature	Guardian's Signature	Researcher's Signature
Date: 20/5/2022	Date: 20/5/2022	Date: 20/5/2022

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By signing this form, I agreed to the terms stated above.

Participant's Signature	Guardian's Signature	Researcher's Signature
Date: 27/5/2022	Date: 27/5/2022	Date: 27/5/2022

FACULTY OF COGNITIVE SCIENCE AND HUMAN DEVELOPMENT

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By signing this form, I agreed to the terms stated above.

Participant's Signature	Guardian's Signature	Researcher's Signature
Date: 1/6/2022	Date: 1/6/2022	Date: 1/6/2022

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Interview Consent Form

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The Influence of Emotions Towards Secondary School Students' Learning and Academic Achievement During Covid-19 Pandemic.

Description of research

The research is aimed to discover the effect of the emotions towards secondary school students' learning and academic achievements amidst the COVID-19 pandemic outbreak in Malaysia. The purpose of the interview is to identify the emotions experience during learning and the possible factors contributeed to the emotions experienced by adolescence aged 13 to 17 years old as distanced learners.

Description of the Study Procedures

If you decide to allow your child to participate in this study, he/she will be asked to answer and describe their experience attending class at home as an online learner and the emotions and factors that contributed to their emotional state as a student learning through online platform. The interview will approximately take between 20-30 minutes.

Does my child have to participate?

Your child's participation in this study is voluntary. Your child may decline to participate or to withdraw from participation at any time. You can agree to allow your child to be in the study now and change your mind later without any penalty.

What if my child does not want to participate?

In addition to your permission, your child must agree to participate in the study. If you child does not want to participate they will not be included in the study and there will be no penalty. If your child initially agrees to be in the study they can change their mind later without any penalty.

Right to Refuse or Withdraw

The decision to participate in this study is entirely up to you and your child. You are welcome to observe the interview if you wish. Your child may refuse to take part in the study **at any time**. Your child has the right not to answer any single question, as well as to withdraw completely from the interview at any point during the process; additionally, you have the right to request that the interviewer not use any of the interview material.

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Whom to contact with questions about the study?

Prior, during or after your participation you can contact the researcher **Nur Puteri Sabrina Binti Mohamad** at **014-3952364** or send an email to **nurputerisabirna@yahoo.com** for any questions or further enquiries regarding the research.

By signing this form, I agree to the terms stated below.

1. I confirm that my child's participation in this research project is voluntary.
2. I understand that I will not receive any payments for participating in this research interview.
3. I understand that my child have the right to decline to answer any question or end the interview.
4. I confirm that the research interview will last approximately 20-30 minutes.
5. I understand that my child's confidentiality as a participant in this study will remain secure.
6. I have read and understood the explanation provided to me by the researcher.
7. I have been given a copy of the consent form.
8. I understand that the researcher may take notes during the interview and might require taking a picture with them as a prove of the interview session.
9. I agree that the researchers may publish documents that contain quotations by my child.

By signing this form, I agreed to the terms stated above.

Participant's Signature	Guardian's Signature	Researcher's Signature

Date: 2/6/2022   Date: 2/6/2022   Date: 2/6/2022

FACULTY OF COGNITIVE SCIENCE AND HUMAN DEVELOPMENT

BACHELOR OF PSYCHOLOGY (HONOURS)

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Participant's Signature	Guardian's Signature	Researcher's Signature
Date: 2/6/2022	Date: 2/6/2022	Date: 2/6/2022

Interview Summary

Respondent 1

I. Personal Details

Name: Fizuani	**Interview Date**: 20/5/2022
Gender: Male	**Interview Location**: Teapack, Metrocity Square,
Age: 16	Kuching, Sarawak.
School: SMK Matang Jaya	
Type of School: National Secondary School (*Sekolah Menengah Kebangsaan*)	

II. Online learning information

1. What is the teaching/learning method used by your teachers?

    √ Synchronous/Live class   ____ Asynchronous Class   ____ Self-learning

    ____ others (please indicate) :_____

2. What is the range of score you would get mostly in your examination during the time when you attended class from home (PDPR)?

    _____ A (100-80)

    _____ B (79-65)

    _____ C (64-50)

    _____ D (49-40)

    √ E (39-0)

3. Final assessment methods:

    √ Online Exam

    _____ Project/assignment-based assessment

    _____ Others (please indicate):_____

4. How would you rate your level of understanding of the syllabus during online learning?

    _____ Excellent: High level of understanding towards the syllabus.

    _____ Very good: Above average level of understanding towards the syllabus.

    _____ Satisfactory: Moderate understanding of syllabus, know the basic concepts.

    √ Weak: Below average level of understanding of the syllabus.

    _____ Very poor: Unable to understand the syllabus.

III. Sample Transcript

Questions	Response from Interviewees
What was the most used teaching method used by your teachers? (Live class/pre-recorded video/related video regarding the syllabus/self-learning)	We usually attend class online using Google Meet.
Do you have any groupworks given by your teachers	Yes
How would you describe the process of communicating with your classmates/friends during the discussion?	It was hard. Sometimes when it is time for us to discuss, some friends might not be able to join us. Sometime the ones that did not join didn't do their work.
What medium/platform that you would usually use during the discussion?	WhatsApp chat or videocall.
Based on your experience, how would you rate your understanding? (good/moderate/weak)	I would say weak as it was hard to understand what the teacher was teaching.
What are the emotions that you experienced mostly throughout attending class online?	I would say its lonely, empty, unpleasant, dreadful, and sometimes nervous due to not understanding what was taught in class.
Can you rank these emotions from most to least experienced emotions?	1. Lonely 2. Empty 3. Dread 4. Bored 5. Nervous
Earlier u mentioned that you feel (Lonely) the most during that time. Can you list a few factors that may have made you feel such way?	It is because being at home and listen to the teacher teaching feels different without a friend beside me. Besides, in normal school time I would usually hangout with my friends. In online class, it is harder to understand what the teacher is explaining. I would say, I don't like what I was feeling during that time.

Do you prefer learning from school or online? Any reason for your answer?	Definitely, school. It is easier to understand, and I can meet my friends.

Interview Summary

Respondent 2

I. Personal Details

Name: Zikri	**Interview Date**: 27/5/2022
Gender: Male	**Interview Location**: Taman Matang Jaya,
Age: 17	Kuching, Sarawak.
School: SMK Tunku Abdul Rahman	
Type of School: National Secondary School (*Sekolah Menengah Kebangsaan*)	

II. Online learning information

5. What is the teaching/learning method used by your teachers?

   __√__ Synchronous/Live class   ____ Asynchronous Class   ____ Self-learning

   ____ others (please indicate) :_____

6. What is the range of score you would get mostly in your examination during the time when you attended class from home (PDPR)?

   _____ A (100-80)

   _____ B (79-65)

   __√____ C (64-50)

   _____ D (49-40)

   _____ E (39-0)

7. Final assessment methods:

   __√__ Online Exam

   _____ Project/assignment-based assessment

   _____ Others (please indicate):_____

8. How would you rate your level of understanding of the syllabus during online learning?

   _____ Excellent: High level of understanding towards the syllabus.

   _____ Very good: Above average level of understanding towards the syllabus.

   __√__ Satisfactory: Moderate understanding of syllabus, know the basic concepts.

   _____ Weak: Below average level of understanding of the syllabus.

   _____ Very poor: Unable to understand the syllabus.

III. Sample Transcript

Questions	Response from Interviewees
What was the most used teaching method used by your teachers? (Live class/pre-recorded video/related video regarding the syllabus/self-learning)	Online class using Google Meet.
Do you have any groupworks given by your teachers	Yes.
How would you describe the process of communicating with your classmates/friends during the discussion?	It is hard sometimes because some friends do not have a good internet connectivity while some just disappeared. I usually would do most parts by myself as I don't want it to affect my marks. I will try my best to understand that some of my friends might not have a good internet connection while some depended only on their mobile data which makes them can only join the discussion only for a short time.
What medium/platform that you would usually use during the discussion?	I would usually Discord my friends.
Based on your experience, how would you rate your understanding? (good/moderate/weak)	Moderate. I think learning from home is comfortable for me, but the work given by the teachers is a lot more compared to during normal school.
What are the emotions that you experienced mostly throughout attending class online?	I feel relaxed since I can be at home, in my room and comfortably listen to teachers teaching. Sometimes, I would feel confused as it is harder to understand sometimes, and it makes me feel 'blurred'. There are times when the teacher calls our names in class, I will panic and nervous since I might be called anytime because my teacher always calls

	peoples name randomly to answer question in class.
Can you rank these emotions from most to least experienced emotions?	1. Relaxed 2. Confused 3. Nervous 4. Panic
Earlier u mentioned that you feel (Relaxed) the most during that time. Can you list a few factors that may have made you feel such way?	It is because I don't have to meet people like when I go to school. Plus, I am a comfortable at home as I can relax more. I feel that learning online is more flexible compared to going to school. But then, the workload is more compared to normal school. So, both have its good side and bad side.
Do you prefer learning from school or online? Any reason for your answer?	I think, I would prefer going to school as normal. It is because it is easier to understand, and workload is lesser compared to online class. Practical work is also easier to do when at school since some tools are not available at home. Sometimes I would have to ask my parents to buy the necessary hardware tools (hammer, screwdrivers, etc) which I think will burden my parents as they have to pay for the things I need. If in school, we can use the school tools for our projects and finish the work at school instead of having to buy our own.
Additional Questions	
Do you think online class limits your interaction with your friends? Does it make you feel lonely?	No. I think lonely is not a problem since we have many types of platforms to connect with my friends. I would usually use Discord to communicate with my friends. We would usually be on Discord most of the time not only to discuss about class but also to

	communicate when we play video games together. Sometimes me and my friends would watch movies together using Discord.

Interview Summary

Respondent 3

I. Personal Details

Name: Adly	**Interview Date**: 1/6/2022
Gender: Male	**Interview Location**: Starbucks Coffee, AEON
Age: 17	Mall Kuching, Sarawak.

School: Sekolah Menengah Sains Kuching Utara

Type of School: Fully Residential School (*Sekolah Berasrama Penuh*)

II. Online learning information

1. What is the teaching/learning method used by your teachers?

    __√__ Synchronous/Live class   _____ Asynchronous Class   _____ Self-learning

    _____ others (please indicate) :_____

2. What is the range of score you would get mostly in your examination during the time when you attended class from home (PDPR)?

    ___√___ A (100-80)

    _____ B (79-65)

    _____ C (64-50)

    _____ D (49-40)

    _____ E (39-0)

3. Final assessment methods:

    ___√___ Online Exam

    _____ Project/assignment-based assessment

    _____ Others (please indicate):_____

4. How would you rate your level of understanding of the syllabus during online learning?

    _____ Excellent: High level of understanding towards the syllabus.

    ___√___ Very good: Above average level of understanding towards the syllabus.

    _____ Satisfactory: Moderate understanding of syllabus, know the basic concepts.

    _____ Weak: Below average level of understanding of the syllabus.

    _____ Very poor: Unable to understand the syllabus.

III. Sample Transcript

Questions	Response from Interviewees
What was the most used teaching method used by your teachers? (Live class/pre-recorded video/related video regarding the syllabus/self-learning)	Usually online class. For my teachers, they would use Google Meet to conduct the class.
Do you have any groupworks given by your teachers	Yes
How would you describe the process of communicating with your classmates/friends during the discussion?	It depends on the group I am with. Sometimes groupmates are very cooperative since it involves our marks but there are also some that did not contribute. I think it is very unfair and makes me feel unsatisfied in so many ways.
What medium/platform that you would usually use during the discussion?	My friends and I usually would use WhatsApp. Whether it is chat or video call would be depending on our mood.
Based on your experience, how would you rate your understanding? (good/moderate/weak)	I think I have no problem understanding the lesson, but it would be better to go to school and stay at the hostel as usual rather than the online class.
What are the emotions that you experienced mostly throughout attending class online?	I think mostly I feel stressed, dreadful, lazy or demotivated, and somewhat frustrated.
Can you rank these emotions from most to least experienced emotions?	1. Demotivated/lazy 2. Stressed 3. Dreadful 4. Frustrated
Earlier u mentioned that you feel (Demotivated) the most during that time. Can you list a few factors that may have made you feel such way?	Learning from home is a lot harder since there are distractions around. For me I think the strongest distraction is that my phone is always beside me so I would end up playing with my phone and scrolling social media during class. Besides, online class have more

	workloads, but I feel demotivated because of the frustrations due to the groupmates not cooperating or simply refuse to do their work when we have group work given by our teachers.
Do you prefer learning from school or online? Any reason for your answer?	Learning from school. Face to face class have lesser distraction and it makes it easier for me to focus. I was used to the environment where we would stay in hostel, online class makes it harder to communicate with friends. Social interaction in class when attending school as normal is better as I feel that learning with friends makes it easier for me to catch up with my studies to ensure that I maintained good grades for the upcoming SPM.

Interview Summary

Respondent 4

I. Personal Details

Name: Alia	**Interview Date**: 2/6/2022
Gender: Female	**Interview Location**: Starbucks Coffee, The Spring,
Age: 17	Kuching, Sarawak.
School: SMK St. Theresa	
Type of School: National Secondary School (*Sekolah Menengah Kebangsaan*)	

II. Online learning information

1. What is the teaching/learning method used by your teachers?

   __√_ Synchronous/Live class   ____ Asynchronous Class   ____ Self-learning

   ____ others (please indicate) :_____

2. What is the range of score you would get mostly in your examination during the time when you attended class from home (PDPR)?

   _____ A (100-80)

   __√___ B (79-65)

   _____ C (64-50)

   _____ D (49-40)

   _____ E (39-0)

3. Final assessment methods:

   __√___ Online Exam

   _____ Project/assignment-based assessment

   _____ Others (please indicate):_____

4. How would you rate your level of understanding of the syllabus during online learning?

   _____ Excellent: High level of understanding towards the syllabus.

   _____ Very good: Above average level of understanding towards the syllabus.

   __√__ Satisfactory: Moderate understanding of syllabus, know the basic concepts.

   _____ Weak: Below average level of understanding of the syllabus.

   _____ Very poor: Unable to understand the syllabus.

III. Sample Transcript

Questions	Response from Interviewees
What was the most used teaching method used by your teachers? (Live class/pre-recorded video/related video regarding the syllabus/self-learning)	Live class whereby the teachers teach using the Google Meet.
Do you have any groupworks given by your teachers	Yes.
How would you describe the process of communicating with your classmates/friends during the discussion?	It is not as hard as what I imagined since we would be on call using Discord or google meet most of the time even if we don't have works that needs to be discussed. You can say that I virtually hangout with my friends most of the time I'm in my room.
What medium/platform that you would usually use during the discussion?	Discord and Google Meet. WhatsApp for messaging.
Based on your experience, how would you rate your understanding? (good/moderate/weak)	I think the level of understanding would be moderate or just 'okay'.
What are the emotions that you experienced mostly throughout attending class online?	Anger, stress, mostly rage and irritated. Other feelings that I felt during that time is annoyed.
Can you rank these emotions from most to least experienced emotions?	1. Rage 2. Irritated 3. Stress 4. Anger 5. Annoyed
Earlier u mentioned that you feel (Rage) the most during that time. Can you list a few factors that may have made you feel such way?	Sometimes, the environment in class is not pleasant. There always seem to be technical problem faced by our teachers during teaching. I get very irritated when the voice sounded too high pitch or too loud even when my laptop volume is on low, mostly caused

	by the teacher's mic. The high pitch sound makes me feel irritated and enraged as it makes me feel angry most of the time since I can't focus on the lesson. Not only that, the feeling of attending class online makes me feel all kinds of feeling related to rage and anger. If I could explain it in simpler words, learning online makes me feel like everything is 'not right' mostly because of the unconducive environment.
Do you prefer learning from school or online? Any reason for your answer?	Going to school. Mostly because it is easier to focus on lessons since if at home I will always be distracted by my phone and since I am always in my room, I tend to sleep most of the time as the bed is nearby. I will try not to do so but it is sometimes hard to prevent myself from being distracted and focus on the teacher teaching. Besides, I think I will be able to understand better if learning is not conducted online. As teachers are physically there, it is easier to ask them for further explanation whenever I have difficulty in understanding the lesson. Taking directly to teachers will help clarify any unclear topics that was taught during class. In online class it makes me feel that there is some boundary since we are talking in front of our computer screen and there are times internet connectivity is not as good, so the explanation sometimes is not as detailed as what I expected from the teacher.

Interview Summary

Respondent 5

I. Personal Details

Name: Iman	**Interview Date**: 2/6/2022
Gender: Female	**Interview Location**: Starbucks Coffee, The Spring
Age: 17	Kuching, Sarawak.
School: SMK ST. Theresa	
Type of School: National Secondary School (*Sekolah Menengah Kebangsaan*)	

II. Online learning information

1. What is the teaching/learning method used by your teachers?

    _√_ Synchronous/Live class   ____ Asynchronous Class   ____ Self-learning

    ____ others (please indicate) :_____

2. What is the range of score you would get mostly in your examination during the time when you attended class from home (PDPR)?

    _____ A (100-80)

    _____ B (79-65)

    _√_ C (64-50)

    _____ D (49-40)

    _____ E (39-0)

3. Final assessment methods:

    _√_ Online Exam

    _____ Project/assignment-based assessment

    _____ Others (please indicate):_____

4. How would you rate your level of understanding of the syllabus during online learning?

    _____ Excellent: High level of understanding towards the syllabus.

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    _√_ Weak: Below average level of understanding of the syllabus.

    _____ Very poor: Unable to understand the syllabus.

III. Sample Transcript

Questions	Response from Interviewees
What was the most used teaching method used by your teachers? (Live class/pre-recorded video/related video regarding the syllabus/self-learning)	My teachers use Google Meet and most of the time they would teach online according to the class timetable.
Do you have any groupworks given by your teachers	Yes.
How would you describe the process of communicating with your classmates/friends during the discussion?	Overall, I think my friends are easy to communicate with since I would usually group myself with classmates that .
What medium/platform that you would usually use during the discussion?	Most of the time we would use Discord but occasionally we would use WhatsApp too.
Based on your experience, how would you rate your understanding? (good/moderate/weak)	I would describe my understanding is at moderate level but learning online is not as easy as what I expected it to be.
What are the emotions that you experienced mostly throughout attending class online?	I feel that there are a pleasant and unpleasant feelings during that time. If I were to list the feelings, I would say I feel annoyed, stressed, relief, and happy in some ways but these feelings are different for each day.
Can you rank these emotions from most to least experienced emotions?	1. Annoyed 2. Relief 3. Stressed 4. Happy
Earlier u mentioned that you feel (annoyed) the most during that time. Can you list a few factors that may have made you feel such way?	I feel annoyed because there is too much work given by our teachers. There are always some class activities that we need to do. Each subject will have their own class activity that need us do. It does makes me feel overwhelmed sometimes. But at the same time, learning online makes me feel relief because I feel that it is good that I don't have

	to meet a lot of people every day. I always feel insecure when I am at school surrounded by people. My close friends are mostly from different class than I am so it does not affect me as much if classes are conducted online since I will be in a call with my friends for our 'hangout'.
Do you prefer learning from school or online? Any reason for your answer?	Physical class because it is easier to understand the lesson and I will have no problem to focus. Online class is okay too but the distractions around me while being at home will make me have to put more effort in understanding all the subjects. If going to school as normal, I can hang out with my friends that are from different class during our recess time and also once the school ended. Surrounded by the right group of friends does make my days in school feel better in which the time that I spent with them is what I look forward to each time I go to school.
Additional question	
Earlier you mentioned that you feel relieved and happy when school is done online. Any reason for that?	As both online and non-online class have their pros and cons to me, online class somewhat make me feel at ease as I feel that I am insecure if I am at school. Not having to feel such way makes me feel relief as I can be my true self when I am at home in my room. If homeworks are not as many and class task are less, I would prefer being in online class.