ENGAGING GENERATION Z LEARNERS IN THE NEW NORMAL THROUGH THINKTOK

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Engaging Generation Z Learners in the New Normal Through Thinktok

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ABSTRACT

Student engagement in education refers to the level of attention, curiosity, interest, optimism, and enthusiasm that students display when learning or being taught, as well as their drive to study and improve. This study investigated the effects on the engagement of Generation Z learners with the utilization and intermingling of ThinkTok in learning Science. The participants of this study are the 39 Grade 10 students who are enrolled in Guipos National High School, Guipos District in the Division of Zamboanga del Sur for school year 2020-2021 who can access online to supplement the modular learning. Data for this study were collected through qualitative and quantitative methods. Thematic analysis was used to interpret the qualitative data gathered through interviews. Mean, standard deviation and paired sample t-test were used to treat the quantitative data. The analysis on students' perceptions on the use of ThinkTok in Science has emerged into three themes: stimulates students to think, makes learning enjoyable and exciting, and relevant in the new normal. Internet connection was noted as a challenge for the participants in this study. Based on the strength of the findings, the result on the paired sample t-test revealed statistically significant difference on the level of students' engagement before and after the use of ThinkTok. This finding implies that the use of Thinktok has significantly increased students' level of engagement. Hence, teachers are encouraged to utilize ThinkTok as they continue to deliver instructions remotely.

KEYWORDS

Science Education, ThinkTok, New Normal, Generation Z, Engagement, Philippines

Acknowledgment

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I. CONTEXT AND RATIONALE

Student engagement is an on-going concern for educators because of its positive association with deep learning and educational outcomes (Northey, Bucic, Chylinski & Govind, 2015). What teachers do and how students perform intersect, making teachers a critical factor for determining student success (Harbour, Evanovich, Sweigart & Hughes, 2015). Therefore, if teachers use innovative methods, they increase the probability that they will successfully engage students in learning.

Today, more than any other time in history, student engagement is a challenge, especially for science teachers. With the coronavirus disease pandemic of 2019 (COVID-19), teachers are prompted to continue delivering instruction through blended and distance learning. With this, the implementation of inquiry-based science teaching is fraught with challenges, especially in this new normal time. Teachers continue to search for creative ways on how to maintain the interest of students, increase their curiosity, and awaken their desire for a deep understanding of important science concepts with the advent of different learning modalities.

Deschaine and Whale (2017) in their study titled, "Increasing Student Engagement in Online Educational Leadership Courses" found out that interactivity seems to be a key in keeping students involved and achieving, with specific activities routinely favored by students. Hence, generational influences and distinctive characteristics of our students must be well understood, since these may challenge teachers and require changes in teaching-learning design strategies and approaches.

Today, our schools cater the Generation Z of learners. They are considered the youngest of the five generations (1995-2012), born with technology who don't see it as a tool but as a regular part of life (Kalkhurst, 2018). They are accustomed to collaborating, sharing, and distributing images and information (Pavan & Vishwanath, 2017). Because their use of technology has developed the visual ability portion of their brains, visual forms of learning are more effective for these learners (Rothman, 2016). Generation Z learners enjoy computer classes, feel that using computers comes easy to them; and perceive themselves as experts in the use of social media, mobile operating systems, using a smartphone, searching the Web, and email (Buzzetto-Hollywood & Alade, 2018). This has a great impact on the teaching-learning environment as students (the new Generation Z learners) are more equipped with technology than typical Generation X (teachers), which increases the complexity of education processes involving instruction, guidance, and supervision (Cilliers, 2017). Digital instruction is very important to Generation-Z and its impact on delivering knowledge and student performances are sharply increasing recently (Haseeb, 2019).

In this context, teachers need to apply a model of learning that will lead students to improve their engagement by considering their interests. The proponent who is a Grade 10 Science Teacher is currently challenged on how to engage his Generation Z learners in this new normal time. It's no secret that many students spend most of their free time on social media websites. Teachers keep seeing their students with their phones and that habit usually is frustrating. The researcher is attempted to try to start seeing things differently and use social media as a tool for educational purposes. Along with these premises, the researcher is challenged to conduct this study to explore the effects of reinforcing ThinkTok in teaching Science to supplement the distance learning.

II. INNOVATION, INTERVENTION, AND STRATEGY

The innovation utilized in this study is a learning strategy named as ThinkTok to improve the engagement of Grade 10 Students in their Science class with the advent of Distance Learning. The ThinkTok learning strategy involves 3 important stages which are as follows: 1) Think (Think or Reflective Dialog). The activity of thinking can be seen from the process of reading a science text or viewing video clips with science stories and then making reflections about what have been read or viewed. 2) Talk (Speaking or Discussing). At the talk stage, learners join in virtual groups to reflect, compose, and express ideas in discussion activities. 3) Share. After the "talk" stage is accomplished, it is continued with the next stage of "share" where students are asked to conceptualize and execute their ideas through video-making and communicate the learned concept with scientific and logical explanations on the topic using social media platforms such as Tiktok, FB, IG or Twitter. This task is often accomplished by combining a short message with a catchy tune that people are likely to remember. Since one of the most powerful means of communicating information today is through music, students may persuasively share their thoughts and ideas on the topic using a chosen melody. This can help students boost their scientific and technological literacy skills in sharing science contents on different social media platforms. Through this learning strategy students can participate in the practice of science communication for "awareness, enjoyment, interest, opinion-forming and understanding of science" (Burns, O'Connor & Stocklmayer, 2003).

However, there are challenges to overcome in accomplishing the task such as judgments of people on social media making the students prone to cyber bullying. Hence, students may opt to upload their multimedia presentation in an exclusive Google Classroom.

III. ACTION RESEARCH QUESTIONS

This study aims to look at the effects on the engagement of Generation Z learners with the utilization and intermingling of ThinkTok in learning Science.

Specifically, it sought to answer the following questions:

1. How do students perceive the use of ThinkTok in learning Science?
2. What is the students' level of engagement in the learning process?
3. How does the use of ThinkTok affect students' engagement in Science?

IV. ACTION RESEARCH METHODS

A. Participants and/or other Sources of Data and Information

The participants of this study are the 39 Grade 10 students who are enrolled in Guipos National High School, Guipos District in the Division of Zamboanga del Sur for school year 2020-2021 who can access online to supplement the modular learning.

Table 1 shows the Criteria of Population and Sample Population. The sample population of this study was determined through purposive sampling.

Table 1
Criteria of Population and Sample Population

Criteria	Population	Sample Population
Grade 10 Eagle	57	19
Grade 10 Dove	59	15
Grade 10 Kingfisher	53	0
Grade 10 Peacock	53	5
Total	222	39

B. Data Gathering Methods

Data for this study were collected through qualitative and quantitative methods. A research instrument used in the qualitative part is an interview schedule for structured individual interview and essay writing developed by the researcher allowing the research participants to express their thoughts, feelings and opinions regarding the use of ThinkTok in learning Science. Interviews were done through call and/or video chat rooms for safety and health reasons. A validated Students' Science Engagement Scale (SSES) adapted from Baraquia (2019) is another instrument used for the quantitative part. The scale was used to determine the level of engagement of students on the learning process when they were taught with and without the reinforcement of ThinkTok.
The questionnaire was forwarded to the respondents through a Google Form. Below is the continuum used in the interpretation of data gathered.

Responses	Continuum	Interpretation
4 Very True to Me	3.26 - 4.00	Very High
3 True to Me	2.51 – 3.25	High
2 Not True to Me	1.76 – 2.50	Low
1 Very Not True to Me	1.00 – 1.75	Very Low

A lesson guide for Grade 10 Science was developed to explore the utilization of ThinkTok in learning Science. The Most Essential Learning Competency (MELC) covered is "Describe the possible causes of plate movement" *(S10ES-Ia-j36.5)* on Week 7 of Quarter 1.

As an essential step of data gathering procedure, research participants were informed about the purpose and significance of the study, risks and benefits of the case study, and involved commitment and protection of confidentiality. Parents of the participants were provided with an informed consent as a preliminary step of data collection. After ensuring that the participants and their parents have clear perspective and understanding about the study, the researcher asked for permission from the participants on the audio/video recording of the interviews and focus group discussions for later transcription and analysis. The transcription of students' responses was followed right after the data collection. Thematic analysis was used to analyze the qualitative data. The quantitative data on students' engagement was analyzed by applying descriptive statistical measures such as mean as a measure of average and standard deviation as a measure of variability of numerical data. To test the significant difference at the 0.05 level of significance in the students' engagement, the test for repeated measures Paired Samples T-test was employed. This was used as basis if the intervention has improved the engagement of the Grade 10 students in learning science.

V. DISCUSSION OF RESULTS AND RECOMMENDATIONS

The analysis on students' perceptions on the use of ThinkTok in Science has emerged into three themes: stimulates students to think, makes learning enjoyable and exciting, and relevant in the new normal. Internet connection was noted as a challenge for the participants in this study.

Stimulates Students to Think

Most of the participants in this study reported that ThinkTok has stimulated their way of thinking. Illustrative statements from the participants are shown below:

> *As a student I think the advantage/benefit of the use of ThinkTok is to improve your thinking skills (S13).*
> *My experience on my Science class is really good. I think I absolutely love it because Science is one of my favorite subject. For me as a student, the advantage of the use of Thinktok can improve my learning abilities (S8).*
> *Students can learn a lot in thinktok during science class (S14).*
> *The advantages of thinktok in our science class helps us to learn more and to the help of individual activities, it genuinely helps us to understand the lessons (S21).*
> *ThinkTok helped me a lot these days because it helps us to understand more and to know/learn more (S25).*
> *It's quite good and exciting because I can learn more things about the origin and happenings of the Earth (S3). I learned a lot of lessons (S4).*
> *Advantage sya kay naa gyud kay matun an about sa topic* [It is advantageous because you will really learn from the topic] *(S19).*
> *For me using thinktok is a useful for us to learn more about what the topic is (S22).*
> *I learned a lot of stuff (S27).*
> *It is good for our thinking (S13).*

This finding is supported by Rothman (2016) who said that visual forms of learning are more effective for Generation Z learners. Students' ability to think critically is crucial to their academic progress (Halpern, Millis, Graesser, & Butler, 2012). Facts show that science subjects learning is mostly focused on information transfer rather than empowering activities that can develop students' scientific reasoning (Mainali, 2012). Hence, it is a challenge for every science teacher to select appropriate strategies that would stimulate students to think.

Makes Learning Enjoyable and Exciting

Based on their response, most participants highlighted how they enjoyed their science class utilizing the ThinkTok.

> *I really enjoyed, especially when we were asked to create a video about resiliency. It helps me understand the lessons more (S7).*
> *As a student, I think the benefits of the use of ThinkTok in science class is it increases interests and engagement (S12).*
> *My experience in my science class is exciting and enjoy because of the activities that given to us (S16).*

I think the advantage of thinktok is that it makes studying even easier and it is very accurate to use (S20).
Siguro sir para nako ang advantages of the use of Thinktok sir kay magka interesado pa ang ubang student sa pag tuon sir [For me, Thinktok is advantageous because students will become more interested to study] *(S32).*
Very interesting and challenging (S33).
It was enjoyable and I learn many things about the topics (S34).
I think it is very helpful, it really amazes me (S8).

Many books have been written on the impact of feelings on learning (for example, White & Fry, 2014; Lawson, 2002; Hernik & Jaworska, 2018), and most of them prove that enjoyment and happiness improve comprehension, memory, and social behavior. If teachers will choose strategies that makes learning enjoyable and fun, students are not only happier, but they also remember more information.

Relevant in the New Normal

The third theme is perceptions on the relevance of ThinkTok in learning science amidst the pandemic.

I would like to say about using thinktok in our science class is so useful even though you are not in the class you can watch thinktok anytime you want (S28).
ThinkTok is the source that gives us more information and to help students especially now that we are facing this pandemic (S25).
As a study, I think the advantages of using thinktok in science class is that u don't need to go to school to learn all u need is internet connection and a smart phone (S1).
It helps so much specially now we are in the middle of pandemic (S12).
I can only say that it is good in promoting online classes (S3).
I think it is the best to use when you have a science class (S1).
Bilang mag aaral nakakatulong ang Thinktok sa aking Science class lalong lalo na sa panahon ngayon [As a student, Thinktok helps me a lot during this time] *(S37).*
The advantage of this is we don't need to waste huge amounts of paper (S18).
Bisan man ug lagyu kaau, makaaccess ra gihapon sa uban [It can be accessed even from a remote place] *(S16).*

The effects of the COVID-19 pandemic have impacted negatively on all aspects of society, including education. The shift to distance teaching and learning during the COVID-19 pandemic brought about a real challenge for both teachers and students (Lapitan et al., 2021). To face these difficulties in teaching, it is a must to select strategies that are responsive to the needs of our students.

Challenges on Internet Connection

Most of the participants in this study highlighted that internet connection is a challenge for them in learning science with the use of ThinkTok.

I think the problem that encountered in Thinktok in my science class is the internet connection but not particularly my problems, but all of us, because maybe some of us are

struggling to access Internet just to answer the following questions or maybe the others are not having cellphone or LOAD (S10).
As of now I haven't really encountered many problems except for the poor Internet connection of my phone (S3).
Signal problems and time management since there are things that is a must to do in real life(S2).
The problem that I encountered in the use of thinktok in science class is I don't have enough balance to connect in the internet (S1).
Internet connection(S11).
Kanang pawala-wala ang cignal ug kanang walay ikapalit ug load [Intermittent internet connection and lack of fund for internet load] *(S16).*
The problems I have encounter in Thinktok is when I have no load to sign in (S17).
when the internet connection or signal is bad and when i don't have money to pay for load (S24).
Only the problem is Internet (S27).
The problems, I have encountered is when the signal is poor it gives you poor connection (S31).
Internet connection-mahina ang signal lalo na pag masama ang panahon [Poor signal especially during bad weather condition] *(S37).*

A report by VPN provider Surfshark, the Digital Quality of Life Index 2020, confirms these internet accessibility issues. However, it's good to note that the participants in this study were able to cope with the challenges in the internet connection through the following:

I go to places where there are strong Internet connections (S3).
Searching place that has internet connection and I save money for my weekly load (S24) I overcome those problem is to wait the signal is ok and when the signal is ok i can do watch all over the thinktok what can helps me to my science (S28).
Hahanap ng lugar na may malakas na net. And tyaga lang [I will look for place with strong internet signal] *(S39).*
We overcome those problems with the help of each other and waiting it patiently (S30).

Table 2 shows students' level of engagement in learning Science before and after the use of ThinkTok. The overall level of engagement in learning Science even before the integration of ThinkTok is high (*M*ean = 3.22; SD = .19). With the utilization of ThinkTok, the students manifested a very high level of engagement (*M*ean =3.39; SD=.24). Impressively, all constructs namely Engagement on Science Lessons and Tasks, Science Learning Involvement and Science Effort and Preparation consistently displayed means interpreted as very high. This implies that the use of ThinkTok has increased the level of engagement of the Generation Z learners. This finding is supported by Kuznekoff, J. H. (2020) who said that "one way to engage student in the online classroom, and promote learning, is through emotional and cognitive
need to apply a model of learning interest". Hence, teachers such as ThinkTok that will lead students to improve their engagement by considering their interests and stimulate them to think.

Table 2.
Descriptive Statistics of Students' Level of Engagement in Learning Science

Constructs	Before ThinkTok			After ThinkTok		
	Mean	SD	Remarks	Mean	SD	Remarks
Engagement on Science Lessons and Tasks	3.31	.22	Very High	3.43	.18	Very High
Science Learning Involvement	3.23	.14	High	3.41	.35	Very High
Science Effort and Preparation	3.13	.22	High	3.33	.20	Very High
Overall	3.22	.19	High	3.39	.24	Very High

Scale: 1.00-1.75 Very Low; 1.76-2.50 Low; 2.51-3.25 High; 3.26- 4.00 Very High

Table 3 displays the result in determining the significant difference on students' engagement with and without the use of ThinkTok through paired sample t-test. Data shows that the utilization of ThinkTok yielded a t-value of -2.077 and p-value of .045 which is less than the significance level. Hence, there is a significant difference on students' level of engagement before and after the use of ThinkTok.

Table 3
Test of Significant Difference on Students' Level of Engagement

	N	t-value	Df	p-value
Before ThinkTok	39	-2.077	38	.045
After ThinkTok	39			

**Significance at the 0.05 level*

RESEARCH REFLECTIONS AND CONCLUSION

In conclusion, the utilization and intermingling of ThinkTok in Science stimulates students to think, makes learning enjoyable and exciting, and very relevant to use as a teaching strategy in the new normal. Internet connection was manifested as a challenge for the participants in this study. However, it's good to note that students are finding ways on how to cope with the internet connection such as moving to places where signal is good. They also learn to save money so they can buy load for their mobile data. Based on the strength of the findings, the result on the paired sample t-test revealed statistically significant difference on the level of students' engagement before and after the use of ThinkTok. This finding implies that the use of Thinktok has

significantly increased students' level of engagement. Hence, teachers are encouraged to utilize ThinkTok as they continue to deliver instructions remotely.

RECOMMENDATIONS

Amid the Covid 19 pandemic, educators worldwide are adapting to the "new normal" setup. As teachers, we have to ensure that we do not just translate what we do inside the classroom into our online teachings. Teacher-centred instructions and wordy lectures are no longer effective in this new normal time. Hence, teachers are encouraged to innovate in teaching online by using "ThinkTok", a strategy that stimulates students to think while enjoying, making them up for an exciting learning process and found to be statistically effective in increasing students' level of engagement. School administrators may also consider conducting trainings and workshops on the effective use of ThinkTok and challenge more teachers to develop more strategies related to increasing retention and improving the quality of distance learning.

VI. ACTION PLAN

Goals/ Objectives	Activities/ Strategies	Persons Involved	Resources Needed	Time Frame	Success Indicator
To orient and encourage science teachers to use ThinkTok	Learning Action Cell on ThinkTok	Science Teachers	Computer, Internet Connection	July 2021	90-100% of participants will be encouraged to use ThinkTok in their online class
To equip teachers with skills in video editing.	Learning Action Cell on Video Editing	Science Teachers	Computer, Internet Connection	July 2021	90-100% of participants will be equipped with video editing skills.

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VIII. FINANCIAL REPORT

Activities	Quantity	Unit	Estimated cost	Total estimated cost
SUPPLIES AND MATERIALS				
A4 Bond paper 80 GSM	3	ream	245	735
T664 printer ink Cyan	1	refill bottle	375	375
T664 printer ink yellow	1	refill bottle	375	375
T664 printer ink magenta	1	refill bottle	375	375
T664 printer ink black	1	refill bottle	375	375
			SUBTOTAL:	2,235
Reproduction and Binding cost				
Binding of documents @ P150	6	instance	150	900
			SUBTOTAL:	900
Internet expenses during the implementation of study				
Internet Fee	3	months	1595	4,785
			SUBTOTAL:	4,785
			GRAND TOTAL:	**₱7,920.00**

Appendix A Interview Schedule

A. Opening/Engaging Question
    1. Describe briefly your experience in the most recent Science class you have attended.

B. Core Questions & Probing Questions
    1. As a student, what do you think are the advantages/benefits on the use of ThinkTok in your Science class?

    2. What are the problems you have encountered in the use of ThinkTok in your Science class?

    3. How did you overcome those problems?

C. Terminating/Closing Question
    1. What else would you like to say about the use of ThinkTok in your Science class? Please share it to me.

Appendix B Survey Questionnaire

Students' Science Engagement Scale (SSES)

Adapted from Baraquia (2019)

Directions: The following items describe students' engagement in Science class. Please encircle the number that best represents your response as to:

- 4 Very True to Me; 2 Not True to Me;
- 3 True To Me; 1 Very Not True to Me.

Constructs/Indicators	Responses			
Factor 1: Engagement on Science Lessons and Tasks				
My science lessons and performance tasks are important and relevant to my life.	4	3	2	1
My science lessons and performance tasks are interesting and meaningful.	4	3	2	1
My science lessons and performance tasks are realistic and contextualized.	4	3	2	1
I am inspired to learn new things in science class.	4	3	2	1
My science lessons and performance tasks stimulate my curiosity.	4	3	2	1
I feel encouraged and interested to work on something in science class.	4	3	2	1
I am inspired and prepared to come to science class every day.	4	3	2	1
Factor 2: Science Learning Involvement				
I am having fun during collaborative learning activities in science.	4	3	2	1
I want to ask my science teacher or classmates personally or through social media if I have a trouble understanding a lesson.	4	3	2	1
I want to investigate and understand the societal and environmental impacts and implications from science and technology.	4	3	2	1
I participate and interact during small-group discussions in Science.	4	3	2	1
I appreciate the nature of scientific method or process.	4	3	2	1
I consult and share my views and knowledge to my classmates and Science teacher.	4	3	2	1
I use my creativity and inventiveness in doing my science work.	4	3	2	1
Factor 3: Science Effort and Preparation				
I do and finish my science tasks on time.	4	3	2	1
I raise my hand to participate in science class discussions.	4	3	2	1
I read and review my modules, class notes, handouts, and textbook between classes to make sure that I learn from these Science learning materials.	4	3	2	1
I prepare thoroughly before the summative test or exam in science.	4	3	2	1

I give maximum effort to my science class.	4	3	2	1
I always pay attention to my teacher and classmates who communicate during science class.	4	3	2	1
I feel supported by my classmates and science teacher.	4	3	2	1
I follow the instructions closely in doing my science work.	4	3	2	1

Appendix C Informed Consent

I, the undersigned, confirm that (please tick box as appropriate):

_____ Name _____ _____
of Parent/Guardian Researcher: Signature Date

ROBLEDO, ROMEL C.

_____ _____
Name of Researcher Signature Date

1.	I have read and understood the information about the research, as provided in the Information Sheet dated _____.	☐
2.	I have been given the opportunity to ask questions about the research and the participation of my son/daughter.	☐

3.	I voluntarily agree to allow my son/daughter to participate in the research.	☐
4.	I understand I can withdraw at any time without giving reasons and that I will not be penalized for withdrawing nor will I be questioned on why I have withdrawn.	☐
5.	The procedures regarding confidentiality have been clearly explained (e.g., use of names, pseudonyms, anonymization of data, etc.) to me.	☐
6.	If applicable, separate terms of consent for interviews, audio, video or other forms of data collection have been explained and provided to me.	☐
7.	The use of the data in research, publications, sharing and archiving has been explained to me.	☐
8.	I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form.	☐
9.	Select only one of the following: • I would like my son/daughter's name used and understand what I have said or written as part of this study will be used in reports, publications and other research outputs so that anything I have contributed to this project can be recognized. • I do not want my son/daughter's name used in this project.	☐ ☐
10.	I, along with the Researcher, agree to sign and date this informed consent form.	

Participant:

Appendix D

Lesson Guide for Asynchronous Distance (Online) Learning

Learning Competency: Describe the possible causes of plate movement (S10ES-Ia-j36.5)

Week : 7 Quarter : 1

Instructions: Read carefully all the tasks given before you start. Follow the tasks in chronological order.

Task No.	Activity	Reference	Expected Output
1	Individual Watch these videos 1. YouTube: Causes of Tectonic Plate Movement 2. YouTube: Plate Tectonic Movement Mechanisms	https://youtu.be/KYt4Muz6hSQ https://youtu.be/-xWo1VsgRW8	Watch YouTube Videos
2	Individual Read and Understand: Why do tectonic plates move?	https://earthobservatory.sg/faqonearth-sciences/why-dotectonicplates -move-0	Read an article
3	Group Talk Virtually join in group to reflect and discuss the possible causes of plate movement.		Reflection Paper
4	Share Create your own video (2-3 min) that would scientifically and logically explain and describe the possible causes of plate movement. Since one of the most powerful means of communicating information today is through music, you may use a chosen melody to describe the possible causes of plate movement. Share your output online to participate in the practice of science communication for "awareness, enjoyment, interest, opinion-forming and understanding of science".		Upload Video Note: Uploading the output to social media platforms such as TikTok, FB, IG or Twitter is optional. For privacy purposes, students may submit their output through google classroom.

Appendix E

Lesson Guide for Synchronous Distance (Online) Learning

Learning Competency: Describe the possible causes of plate movement (S10ES-Ia-j36.5)

Week : 7

Quarter : 1

Time	Key Technology	Activities
10 min	Screen Teacher's Slides	Introductions Teacher: Welcome (Start 2 minutes late to allow for latecomers) • Hello everyone, we're going to record all of our sessions for people who can't join and for you to refer back later. I'll start that now. Start Recording of the session • Welcome & Introductions • Norms for Online Class • Prayer • Attendance • Presentation of Objectives
10 min	Screen YouTube https://youtu.be/KYt4Muz6hSQ https://youtu.be/-xWo1VsgRW8	Group Activity/Discussions Students will watch these videos: 1. YouTube: Causes of Tectonic Plate Movement 2. YouTube: Plate Tectonic Movement Mechanisms

5 min	Put link on chat https://earthobservatory.sg/faq-onearthsciences/whydotectonic-plates move-0	Students will read an article on why do tectonic plates move.

15 min	Put link on chat for the breakout session	Group Discussion Breakout rooms: (8 min) Send students to breakout rooms so they can virtually join in group to reflect and discuss the possible causes of plate movement based on the videos watched and article read. Teacher moves between rooms to get a sense of what is being discussed. Main room: (7 min) Students will be sent back to the main room. Someone from each breakout room group shares a few takeaways. Encourage students to use the chat to agree, add on.

5 min	Screen- Teacher's Slides	Instructions for the task Students will create their own video (2-3 min) that would scientifically and logically explain and describe the possible causes of plate movement. Since one of the most powerful means of communicating information today is through music, students may use a chosen melody to describe the possible causes of plate movement. Students will share their output online to participate in the practice of science communication for "awareness, enjoyment, interest, opinion-forming and understanding of science". Note: Uploading the output to social media platforms such as TikTok, FB, IG or Twitter is optional. For privacy purposes, students may submit their output through google classroom. Entertain students' questions and clarifications regarding the task.