Situated Cognition and the Culture of Learning Science in a Sabah Rural Religious School

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Abstract. Located in the outskirts of Sabah's fast paced development - Kinarut - Papar is an Islamic Religious Secondary School that teaches science as a compulsory subject. The students of this school have difficulty in learning science as a subject. The conclusion of a discussion on cognitive apprenticeship of science drawn from Abdullah and Ishak (2018) article entitled "Situated Cognition and the Culture of Learning Science in a Sabah Rural Religious School" supports John Seely Brown's, Allan Collins', and Paul Duguid's theory of situated cognition. There is a disconnect between the learning of science in the classroom and in the science laboratory. Through Haraway's theory of situated knowledge, a review of the discussion suggests the learning of sciences among students of different culture is dependent on their location. The need to understand and remediate the nature of the problem of students choosing to study science as a choice, requires facilities to be remedied. However, consideration should be focused on what next after facilities are improved. This article offers insight into students' motive to learning science, and that cognitive apprenticeship into the scientist community might be assumed successful however it is the students' motive to learning science and the students' cultural background that could influence students' decisive choice of science as a career.

Keywords: Culture of Learning Science, Situated Cognition, Cognitive Apprenticeship, Rural Schools in Sabah

INTRODUCTION

In the article *Situated cognition and the culture of learning* (Brown et al., 1989), the team John Seely Brown, Allan Collins, and Paul Duguid demonstrated how the majority of our society could be misled into believing that *knowing* is equivalent to *doing*. In this article we shall bound ourselves within science education and bring up key issue addressed here is the implicit missing link between laboratory classroom learning and cognition in practice (Hennessy,

1993) that might have an impact on the learning of science in Sabah's science student community. Sabah is a Malaysian state situated on the Northern part of the island of Borneo, rich in diverse multiethnic and multi-religious groups (Sabah Government, 2018). However, the achievement gap is wide between Sabah and the other states of Malaysia due to Sabah's high proportion of rural schools (Ministry of Education, 2012). The gap of achievement is even wider in Sabah in terms of science (Saw, 2016).

This study identifies emerging cultural factors that have influenced the learning of science in a group of science students from a rural religious secondary school in Sabah. The complexity of cultural role on learning, the culture of which the intended activity is embedded in, and the culture of learning passed down from one group to another within this rural religious school context, which in itself also influenced by the culture of the religious school.

John Seely and colleagues have demonstrated about three decades ago knowledge to be a product of the activity, extremely context dependent, and dependent on culture in which it is developed. This argument is still applicable in our selected site of study. Learning involves the activity, concept, and culture. In the scientist community, members are bounded in their specific culture through their own intricate and socially constructed webs of belief (Geertz, 1973).

John Seely and colleagues' reference to Geertz's notion of cultural webs (Geertz, 1973) and Jean Lave's concepts of knowing and doing that can not be separated (Lave, 1997), precede the arguments in this study. In addition, we hold a constructivist position with the tradition that involves learners entering the scientific practices through an apprenticeship (Driver et al., 1994). The constructivist position is that the learner actively builds up knowledge, therefore the interpretation of science learning in a classroom setting should take into consideration the nature of the scientific knowledge along with the personal (apprentice) perspective and social (expert) perspective (Driver et al., 1994). Driver et al., (1994) mentioned when interpreting the learning of science, researchers are advised to consider the nature of the knowledge thus the nature of scientific knowledge is symbolic and it is socially negotiated.

As science learners, there is a need to adopt the behavior and belief systems of their new social group which is the scientist group. Learning to use the science practitioners' tools is a process of enculturation. Hence the science learner eventually acts in accordance with the scientist culture's norms (Brown et al., 1989). Brown et al., (1989) suggested cognitive apprenticeship as enculturating science learners into the scientist authentic practices through their authentic activity and social interaction.

MATERIALS AND METHODS

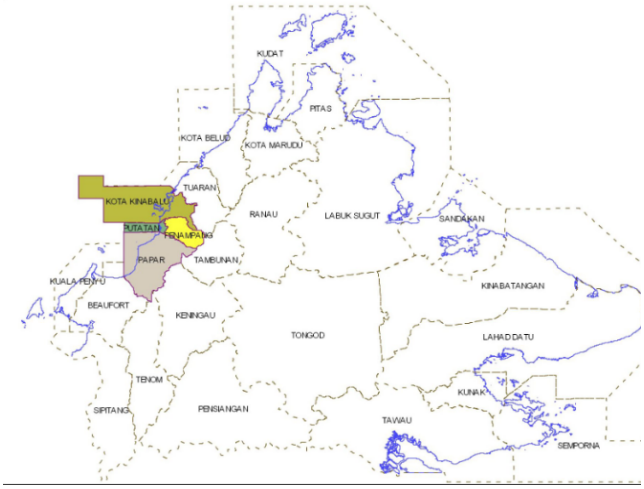


Figure 1: Papar District (Sabah Lands and Surveys Department: Retrieved 13 November 2018)
Source: http://www.jtu.sabah.gov.my/images/jtu_info/KKS_Region.jpg

The theoretical paradigm we abide to is the interpretivism paradigm. This ethnographic study was conducted in a Sabah religious secondary school located in a rural town in the Papar district. Our informants were the form five science students and three science teachers for the years 2017 and 2018. There were sixteen students in the Form Five, year 2017 and twenty-three students in the Form Five, year 2018. In terms of gender, nine girls and seven boys, and eleven girls and twelve boys, respectively. The three science teachers were the same, teaching their same respective science subjects for the two selected years. Fieldwork was done through classroom observations as participant observant. We observe the informants in their natural setting. The guiding research question "To what extent can culture influence learning science at an Islamic Religious Secondary School science classroom?" helped us uncover one of the theme inequities in a Sabah rural religious secondary school.

The first and important step was access. We had to have permission to conduct our studies in any Sabah religious schools. This step is called requesting access from the gatekeepers (Fetterman, 2010). Our field work started when we entered the field inquiring for access (O'Reilly, 2009) which was on February 6, 2017 at the Sabah Islamic Religious Affairs Department (JHEAINS) located within the Sabah Islamic Religious Council (MUIS) building. MUIS is situated in Sembulan town, 4.3 kilometers from the capital city Kota Kinabalu, Sabah. There are six religious' schools under the control of JHEAINS. We base our selection of school on the existence of a secondary science classroom and the existence of a science laboratory. Access to the classroom and informants started on June 11, 2017. The Form 5 science stream classroom observations began on July 3, 2017.

A laboratory session for biology was selected. This session occurred on July 6, 2017 at the ground floor of the secondary school building adjacent to the male *surau* (common prayer room for Muslims to pray). The topic for the laboratory activity was homeostasis. The students were instructed to drink water and measure the input of water and the output of urine. The multiple data sources collected to triangulate as well as contribute to maintaining trustworthiness were field notes, classroom observations, audio and visual materials. The duration of the laboratory session was one and a half hours. Other sources for example interviews were used to support our discussion. The interviews were mostly in Bahasa Malaysia.

Our study is not a one-off event. It is an iterative process. We collect data, we read, we think and reflect, we make notes, we collect data again, then we think and reflect again, we make notes, and so on. Therefore, our study is a cyclic iterative process, wherein we move back and forth between observations, interviewing, and interpretation (Whitehead, 2005). Our data analysis is an ongoing, emerging and iterative process (Smit, 2002). The process of our coding schemes is iterative to mean we analyse the raw data by first sorting, and coding these raw data through different levels in an iterative-inductive manner. We develop a coding scheme, we apply the coding scheme to our data, re-read the data and compare the coding scheme to the data, re-evaluate if the categories and themes are appropriate, if we are not satisfied we re-do the process again (Randolph, 2009). We also use guidelines from Saldaña (2009) and Shaunessy-Dedrick et al., (2015). In addition, we presented our categories and themes to our debriefers to get their opinion in relation to the categories and themes. Thus, the collected raw data will be sorted into first level codes, which will again be coded into categories; we look for patterns in our categories, which will guide us in identifying our themes. (Saldaña, 2009)

RESULTS AND DISCUSSION

The following are the majority categories uncovered. Science subject tough, lack of laboratory facilities, lack of research, instil-like science, fear of failing, Latin and Greek, missing cognitive mode, *momok*, improve school, and gender separation.

Lack of laboratory facilities: Given their status as a rural religious school under the agency JHEAINS and not directly under the Sabah government, much of the school's activities are controlled by JHEAINS. As a religious school, the school also progress through charity. In addition, the priority in providing school facilities is with relation to their religious orientation. Funds were allocated to build a mosque adjacent to the assembly hall which befits priority. However, the laboratory classroom facilities seem to be on hold.

Improve school:

The principal's assistant CJH mentioned

> CJH: *Sangat perlu. Sangat perlu sebetulnya ahh jadi kekangangan kami di peringkat sekolah ini ialah ok dulu err kami punya makmal di sekolah*

lama itu dia agak berfungsi suda tu tapi bila dibuat perpindahan barang barang itu di angkat semua jadi err ada diantara makmal di sini yang err contohnya makmal kimia itu tida ikut spesifikasi bah jadi tida ada yang orang kata tempat buangan bahan kimia tu kan, jadi tidak boleh lah err beroperasi, tidak boleh buat eksperimen eksperimen yang menggunakan bahan bahan kimia ahh

(Translated: Yes, learning science really needs a laboratory. This is our difficulty. You see, our previous laboratory, it was about acceptable operation but since our move…so our chemistry laboratory is not functioning because specifications for chemical disposals are not met. Thus, students can't do experiments involving chemical reactions.)

Missing cognitive mode: The students could not do their chemistry experiments as per the textbooks because the laboratory did not fulfil the government specifications. As a result, it is difficult to remember colours in a chemical reaction. Our observation noted a student (SAI) in the classroom of 2018 having difficulty visualizing colour change in electrolysis.

A female student of classroom 2017 said,

SxIm: *Kalau chemistry ni ahh bagi saya dia jadi susah sebab apa..sebab ah kalau chemistry ni kita kena buat ahmm kalau experimen tu, kita kena buat kita nampak dan baru kita boleh hurai dan kita boleh faham kenapa dia boleh jadi begitu, tetapi sebab kami pun memandangkan kami punya makmal pun belum boleh digunakan buat sementara waktu, jadi kami pun terpaksa tumpukan kepada buku, so buku tidak buli la kasi tengok warna2 begini kan, larutan apa yang jadi, apa yang begini gini. Jadi benda tu jadi sukar bagi saya. Jadi kalau lah ah kami dapat buat amali tu mungkin InsayAllah kami, saya boleh bawa chemistry tu. Jadi saya terpaksa tumpukan kepada buku dan belajar melalui buku tu mungkin lambat sikit dan tany2 orang la*

(Translated: For Chemistry, it is tough for me because we have to do experiments, we need to see, and so we can elaborate and explain why something became such. But because we can't use the laboratory for the moment so we have to depend on books which does not show colours so it is difficult for me.)

Teacher: *Untuk eksperimen ini, kita akan kumpul air kencing, tetapi tidak elok bawa air kencing ke dalam makmal jadi kamu kena buat semua dalam tandas.*

(Translated: For this experiment, we will collect the urine, but it is not appropriate to handle urine in the laboratory so please do everything in the toilet.)

Gender Separation:

Girls on one side of the table and boys on the other side.

In the Western science enterprise, gender separation is rare.

Teacher: *orang lelaki saja yang akan menjalankan eksperimen ini.*

(Translate: Only the boys are going to do this experiment (the teacher was thinking of the girls' modesty))

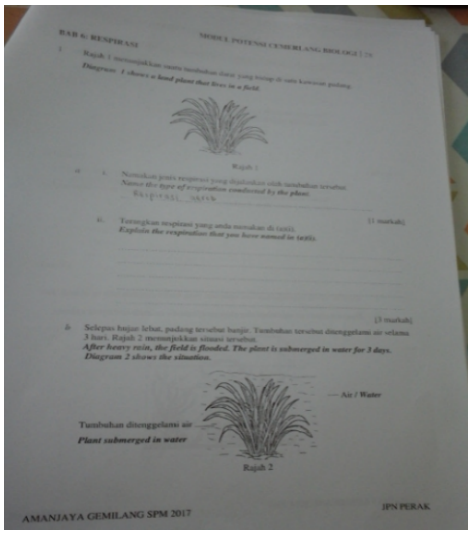
Drinking water sitting (The boys drank their water in a squatting position).

30 Minutes passed: Teacher instructs male students to start but the male students lingered and seems to not know what to do. The teacher had instructed the male students to begin the experiment.

Teacher: *Bangun, mulakan, ambil beaker, mula lah, seorang tukang tulis isipadu.*
(Translated: Go on, stand up, take a beaker, start, one writes down the data of the volume)
Boy: *Cikgu kalau takde apa2.* (Teacher, if nothing happens.)
Teachers: *Pergi saja, dapat tu…* (Just go, get that…)

Latin or Greek: The language Latin or Greek is not in the Malaysian syllabus. Many biological concepts are in Latin or Greek. Thus, in science subjects the difficulty to remember scientific terms pose a problem for some students. What they have learnt in form four, might need to be recalled again in form five. Latin terms like *anae, ae, necrosis* is not easy to remember for these students. When the students of form five science 2017 were studying chapter six on Respiration, my fieldnotes wrote:

"*The girls thought anaerobic and aerobic has something to do with the plants name and not the plants breathing. They forgot the form 4 studies. They also didn't understand the 2 terms due to language (Latin). Teacher explained the difference between anae and ae. Plants in air breathe aerobic. Same plants in flooded area will do anaerobic*."


BAB 6: RESPIRASI

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Rajah 1 menunjukkan suatu tumbuhan darat yang tumbuh di satu kawasan padang.
Diagram 1 shows a land plant that lives in a field.

Rajah 1

a) i. Namakan jenis respirasi yang dijalankan oleh tumbuhan tersebut.
Name the type of respiration conducted by the plant.
RESPIRASI AEROB

[1 markah]

ii. Terangkan respirasi yang anda namakan di (a)(i).
Explain the respiration that you have named in (a)(i).

[3 markah]

b. Selepas hujan lebat, padang tersebut banjir. Tumbuhan tersebut dienggelami air selama 3 hari. Rajah 2 menunjukkan situasi tersebut.
After heavy rain, the field is flooded. The plant is submerged in water for 3 days. Diagram 2 shows the situation.

Air / Water

Tumbuhan dienggelami air
Plant submerged in water

Rajah 2

AMANJAYA GEMILANG SPM 2017 JPN PERAK

Figure 2: An excerpt of students' workbook on respiration

It is not only in biology that the informants have trouble remembering scientific terms but also in other science subjects for example chemistry.

SS: *kerana lebih banyak nama nama yang diberi oleh saintis saintis yang sukar mau di ingat*
(Translated: Chemistry has a lot of nomenclature given by scientist that are so difficult to remember.)

Momok:

Teacher: *pelajar muslim melayu… diuan macam diarang takut untuk mengambil subjek sains stream,*

(Translate: Muslim student were scared of taking science subjects meaning students were frightened with scary gossips "di*momok*an")

Science subject tough:

Teacher: *berita berita yang tidak benar lah ni ahh konon konon terlampau susah, ahh nanti kamu gagal ahh macam tu lah jadi diarang takut untuk ambil bidang ni dan benda ni pelajar sudah masuk suda masuk terpilih bidang tapi bila kawan kawan di kelas kelas lain cerita susah apa tu semua, dia ambil keputusan jumpa dengan guru kelas mintak tukar balik masuk ke bahagian ekonomi*

(Translated: False gossip that science is tough, you can fail in science are spread around to the fresh science students. The fresh science students get scared. So these students who already entered the science stream asked their teachers to allow them to return back to the economic stream for fear of failing.)

Fear of failing:

SxN: *Ya kami memang cita-cita mo jadi doctor tapi inda buli la mo jadi doctor inda buli suda, aku fikir ako kan inda buli sambung sains dekat U sampai begitu sekali bah cikgu.*

(Translated: Yes, my ambition was to be a doctor, but I can't now, I can't continue science now, this is how bad it is.)

Instil-like science:

Teacher: *memang perlu pendedahan dengan lebih banyak lagi dan untuk menarik minat pelajar pelajar muslim khususnya untuk err mengambil bidang sains stream ni*

(Translated: Yes, the Muslim students need to be exposed to science to make them like science and choose science stream.)

Lack of Research:

JHEAINS as an agency which is not directly under the Sabah Education Ministry, it could be that researchers have 'missed' looking into the needs of religious schools but have instead given much attention to state government schools.

CJH: *Err...ok saya rasa perlu (ada kajian dalam sekolah2 agama). ok..err.. untuk makluman err...puan adalah orang pertama yang buat kajian ahh tentang sekolah agama terutama sekali sekolah kami lah. ok. Jadi err.. kajian ini perlu,…*

(Translated: I think to have research done in religious schools are greatly needed. For your information, you are the first person that have done research in religious schools especially in our school. So this research is needed…)

As can be seen in the category Missing Cognitive Mode, some of the cultural influences are as follows. The cultural influence in this laboratory classroom is that the boys drank water squatting instead of standing up. An Islamic culture "*it is sunnah to sit*" when consuming food or water. The gender separation is uncommon in Western society, thus scientific knowledge as socially negotiated is presumed more difficult in the Sabah Muslim society as discussions would be easier if it happened in a same gender group.

As can be seen also, the students had low confidence in handling simple laboratory apparatus because they were not familiar with the scientist simple apparatus. The teachers had to push the male students to start the experiment because they were lingering or still sitting at their chairs. We believe the students are not familiar with the simple laboratory apparatus of beakers and measuring cylinders. Thus, confidence in handling cultural artifacts is low, and for the girls who do not run the experiment then the confidence level might be much lower. In addition, in chemical reactions, it is not possible to understand the changing physical states in chemistry which includes the changing colours and shapes. Hence the missing cognitive mode. As can be seen also in the category *momok* and missing cognitive mode, the students do not have the confidence to move forward.

As can be seen in the category Latin and Greek, the students had difficulty understanding the current science language which is Latin and Greek. As these students speak and learn in Bahasa Malaysia, Latin and Greek terms which are abundant in science subjects will prove difficult. This experience is also seen in results of the category science subject is tough identified. Students clearly struggle to remember terms in Latin and Greek which is not their mother tongue.

As can be seen from the category Instil-like science, there is a misconception from the teachers that science is not interesting and so effort is needed to instill this affinity for science. However, a student may like science but with the fear of failing as in the category fear of failing and *momok*, students make the decision to leave the science stream for the reason that they need to pass their government national exams SPM. This certificate is crucial for any student in order for students to pursue further studies.

CONCLUSION

There are various explanation to the definition of the concept "culture of learning" (Weeks, 2012). However, in this article we agree with Claxton and Lucas (2009: 14) supporting concepts for culture of learning as the learners' culture of being confident and having courage equip with mental toughness that drives curiosity. The culture of learning science in this article is defined as "based on social interaction taking place in schools, classrooms and what could be termed to be learning communities" (Weeks, 2012: 11).

The results obtained from this research highlights the need to gain a deeper insight into learning, through classroom observations thus we propose the need to bring learning as a process of enculturation (Cobern & Aikenhead, 1997). The scientist community or scientist enterprise are defined by their culture meaning the common activities this community does, the tools they use, and the adoption of the behavior and belief systems they (scientist) adhere to. In order for novice students to enter this culture, students need to learn to use tools as the science practitioners should use them. We cannot separate knowing and doing, thus a novice needs to learn the activity-tool-culture of the practitioner. (Brown et al., 1989)

The knowledge around us as 'commonsense' knowledge are in the form of various concepts, where this realm is called the conceptual ecology (Driver et al., 1994). When the science students seek to enter the scientist enterprise, the

students must learn the symbolic world of science comprising of science entities (ontological entities), and it can not be done individually. The students need to co-construct these science ontological entities with an expert (teacher or scientist).

The gender issue has in some way hindered physical laboratory experiences (Driver et al., 1994) for one gender compared to the other. This missing sight and feel experiences have been discussed by Johnstone (1991). Johnstone's explanation on why science is difficult for many students is due to the symbolic level of science visualization. However, in this context the macro level of science visualization is already missing. This macro level means the experience to handle laboratory apparatus.

Language is one of the cultural tools (Driver et al., 1994) of a particular enterprise, in this context scientist enterprise. Again, language comes in two folds. The spoken language as in Latin, English, Bahasa Malaysia. The other is the language of the enterprise for example mathematicians. In order to be a member of the mathematician enterprise, members speak in symbols for example ∑, >, ∫. The same way scientist speaks in symbols where general science is a combination of symbols from mathematics and science. There is also a certain visualization of ontological entities (Driver et al., 1994) known to scientists that are acquired through experience or handling of cultural tools (e.g., electron microscope) in order to visualize and believe in microscopic entities (e.g., mechanism of apoptosis to phagocytosis). In biology DNA to mRNA to tRNA to amino acides (A, C, G, T) are symbols that novice students need to be familiar with. Therefore, to be a member of the scientific enterprise the students need to be familiar with the science terms. According to Brown et al., (1989) the language used by scientist is situated. In order to promote the process of enculturation of science learners, the social network within the scientist culture helps the science learner develop its language and the belief systems (Brown et al., 1989). The above examples are symbols to illustrate Driver et al.,'s (1994: 5) statement "scientific knowledge is both symbolic in nature and also socially negotiated."

In addition, we acknowledge that skills outside of school is not the same as inside schools (Resnick, 1987). This means skills of a science practitioner in their own research environment is not the same reality as what students practice in school. However, a certain level of confidence and familiarity as a novice's first step into the scientist enterprise is needed. The school is that basic grounds. The way practitioners see the world is determined by the culture, the belief system and the way these practitioners use its tools (Brown et al., 1989, 2013). In addition, people do not learn and work individually but collaboratively (Resnick, 1987). We argue that as novice scientist the school should be the starting ground to get a basic familiarization with the scientist cultural tools.

Another possibility is the argument that instead of the enculturation of students into the scientist enterprise, the students resort to a creative way of learning in order to succeed in their examinations. As a consequence, students might not be members of the scientist enterprise. Larson (1995) called this phenomenon Fatima's Rules. The phenomenon is elaborated in Abdullah et al., (2018).

New insights are needed in the awareness that there is a relationship between *knowing* and *doing.* Situated cognition suggests that prior to the understanding of conceptual representation, is an epistemology of activity and perception (Brown et al., 1989).

Therefore, to proceed in having insight, a *verstehen* of rural religious secondary school science classroom we proposed an emerging research question "In what way can culture influence learning science at an Islamic Religious Secondary School science classroom?" *Verstehen* means human acts are being observed through firsthand intimate understanding (Shaffir & Stebbins, 1991). This research question is adequate in this context due to the laboratory activities that are absent at this moment in time. In our knowledge, this laboratory session was the only one conducted throughout the whole two school term.

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English Teacher's Conception of Writing Skills Via Online Learning during the Covid-19 Period

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Abstract. Writing is an essential skill in language learning and is the focus of instruction in language classrooms. The sudden move to teach online would provoke a change in teachers' perception about teaching language skills. The study aims at exploring English teachers' conception about teaching writing skills online during the COVID-19 pandemic and explain the relationship between teachers' conceptions of online teaching and their strategies to teach writing skills. This research is a qualitative phenomenological study. The research is qualitative because a qualitative design provides grounds for the researcher to explore the contextual information collected of the participants' understanding of the phenomena. Themes arise from thematic analysis found that ESL teachers' conceptions about teaching English online and challenges encountred in using technology in online teaching. Overall, the teachers reported that online teaching has considerably impacted their teaching instruction and role in class as well as their professional development as teachers.

Keywords: writing skills**,** English teachers' conception, online teaching, professional development.

INTRODUCTION

Writing is an essential skill in language learning and is the focus of instruction in language classrooms. Successful writing skills take place in the cognitive domains that includes comprehending, applying and synthesizing new information (Defazio et al., 2010) that enables ideas to be expressed and information to be conveyed which is crucial for language learning. Students are expected to consider writing features such as content, sentence structure,

vocabulary, punctuation and spelling when constructing a sentence. On top of that, students also need to be able to integrate information into comprehensible sentences and texts (Dang, 2019). The ability to externalise thoughts and ideas in a comprehensible and fluent form is what makes writing a complexskill. The need for students to combine and apply these skills to produce clear writing makes it even more challenging for second language (L2) learners to acquire writing skills. Since writing is a complex skill, adequate writing instruction is important (Graham, 2018). The key to producing good writing is practice. The challenge for teachers is to motivate students in writing (Moses & Mohammad, 2019). Students are reluctant to write because writing is perceived as a laborious task (Alsied & Ibrahim, 2017), hence their disinterest in learning writing. Thus, due to these challenges, teachers find teaching writing difficult.

The outbreak of the COVID-19 pandemic has forced the education sector to put a temporary halt to learning. The Malaysian government imposed a movement control order (Abdullah et al., 2020) in order to curb the spread of the virus. Hence, as the educational sector is put in a situation wherein no classes can be held in schools and universities, the only option is to opt for online learning. This applies to the teaching and learning of English language classes as well. Thus, changing how language is acquired (Sivanisswary Karuppannan & Lubna Ali Mohammed, 2020).

While online learning is not a stranger to the educational world, and even have gained popularity as a method that provides teachers and students flexibility to study from anywhere (Chirikov et al., 2020; Fuller, 2020), the abrupt shift to online learning has left teachers in Malaysiato be unprepared in teaching online (Sivanisswary Karuppannan & Lubna Ali Mohammed, 2020). Kamal et al. (2020) states that the change to online learning needs to be planned and well designedfor effective learning. Teachers are put in a situation wherein they have to perform teaching throughonline platforms revoking the usual classroom teaching methods and practice that teachers are used to. The adaptation to the new normal of teaching and learning through online is obviously not an easy process. Nevertheless, effective instruction is necessary for the continual development of writing skills in students.

PROBLEM STATEMENT

The COVID-19 pandemic had brought significant change to the mode of teaching and learning. Traditional face-to-face (F2F) method of teaching is replaced with online learning that requires teachers and students alike to use digital resources for learning (DeAlwis & David, 2020). The shiftin teaching and learning required all teachers to move their teaching plans online. English language teachers are to teach language skills online to ensure the continuous learning of English language skills even amidst the pandemic so that students' development in acquiring English are not hindered.The learning of writing skills, in particular, are in high demand even in the middle of the pandemic, as it is seen as a necessary skill for academic success (Klimova, 2013). However, teachers' unpreparedness for the shift to online learning can affect the teaching

and learning of English language learners (Phan & Dang, 2016). Teachers are also challenged in their knowledge and literacy of using technology as means to teach writing skills.

The sudden move to teach online would provoke a change in teachers' perception about teaching language skills. According to research, online learning is viewed as beneficial to both student and teacher (Aydin, 2013). These are due to its flexibility in terms of time, location and practicability. However, some teachers believe that online learning is not education "worthy" (Adams& Defleur, 2005). Huang and Liaw (2005) adds that teachers' attitudes towards technology use in teaching has an effect on their acceptance of using technology and in the degree of integration of technology into teaching and learning (Huang & Liaw, 2005). Hence, the teachers' conception and responses to teaching writing in an online environment has an influence on the quality of writing instruction. However, there has been insufficient research on the response of English teachers to the change in the teaching and learning environment (Fu & Zhou, 2020). It is worthy to note that other studies have focused on online teaching effectiveness, but these have been in teaching online in general, teaching English language skills or focused on students' perception of online learning. Thereis lack of attention on studies surrounding the impact of online teaching in teaching writing from the perspective of English teachers. Since, technology is part of the 'new normal' in teaching and learning, research on teachers' teaching practice and perceptions of teaching language skills using technology is imperative. Hence, this present study will explore teachers' conceptions of the use of online learning to teach writing as well as the strategies for coping with teaching writing online.

RESEARCH QUESTIONS

1. What are English teachers' conception in teaching writing skills online during the COVID-19pandemic?
2. How does online teaching influence the teaching of writing skills?

LITERATURE REVIEW

Teachers' Conceptions of Online Learning

Perceptions are multidimensional in nature. A person's behaviour can be predicted by looking at their biological or psychological perspectives. Teachers' perceptions can come about from evaluative and affective components, as well as concepts apart from real situations (Powell & Powell, 2007). Additionally, an individual's memories of an experience can result in the emergence of a stubborn attitude that an individual tend to avoid from critically examining. Other researchers believe that perceptions and conceptions differ from each other. According to Bueno (2013), perception refers toan individual's view of the world. To explain, it is about an individual's observations of events and experiences that provide information about the world. Bueno adds that the term conception relies onperception as the information that individuals get from their experiences conceptualises an idea and understanding. Thus, it can be said that perception and conception are two sides of the same coin. Hence, in this study, the

perceptions and conceptions of a teacher refers to their cognitive psychological perspective. Psychologists Bem and McConnell (1970) suggests in their theory of self-perception that behaviour is a reaction to one's attitudes and perceptions. In the context of this study, teachers' behaviour is influenced by their perception and attitudes when they are put into a new situation that requires them to teach online, which they have inadequate knowledge about.

Upon entering the education field, teachers have already developed their philosophy and beliefs about teaching (Bai & Ertmer, 2008). The teaching philosophy that a teacher develops are based on their personal or cultural beliefs (Oxford & Yilmazel-Sahin, 2004) which can be uncompromising to change. A teachers' perception on the use of technology as a tool for teaching forms attitudes which can affect the way they use those tools (Deemer, 2006) since all teachers have a certain perception, attitude and experience about using technology for learning. Having said that, teachers' perceptions can be related to teaching methods. In the light of this claim, teachers' negative perceptions, attitudes and experience of technology can lead to negative conceptions of teaching online. These negative sense of using technology are due to a teachers' negative belief system. Usó-Doménech and Nescolarde-Selva (2016) defines a belief system as a person's set of beliefs that encompasses what they think as right or wrong, true or false, or what they consider as acceptable. A teacher's negative belief of teaching online and using technology leads to attitudes that inhibit them from efficiently and effectively adopting technology into their teachings during the prolonged school closure due to the pandemic.

Tondeur et al. (2017) study focused on teachers' pedagogical beliefs and its relation to the use of technology in the classroom. Findings from the study found that there is a correlation of the link between pedagogical beliefs and technology use, concluding that the teachers' beliefs impede the utilization of technology in class. Tondeur et al. (2017) also found other factors such as limited time, rigid schedules and examination requirements.

It is a known fact that teachers are key players in students' achievement (Hattie, 2012). Teachers' teachings contribute to the effectiveness of learning since "decisions made by individual teachers is by far greater than the impact of decisions made at the school level" (Marzano & Marzano, 2003). The factors of effective learning include the teaching instruction that a teacher employs in class. Similarly, the effectiveness of teaching and learning depends on the effective use of technology in instruction. In the context of this study, how a teacher constructs and plans their online lessons with the integration of technology influences students' ability to achieve. This means that it is essential that teachers know how and when to use technology strategies in their instructional design for the purpose of enhancing students' learning abilities. Thus, studying teachers' perceptions of online learning could lead to a better understanding of how to effectively teach online.

The transition to teaching using technology is crucial due to the pandemic situation albeit rather a difficult process. Davies and West (2014) states that effective integration of technology instruction from the traditional instruction is a complex process due to teachers' need in understanding various concepts. These include understanding the change in the learning process, implementation of technology and teaching strategies. It should be made

known that the notion of using technology to assist in teaching has been introduced to schools in Malaysia. The push towards using technology in classrooms was further emphasised in the recent Malaysia Education Blueprint (2013-2025) that aims to enhance the quality of learning in Malaysia through the utilization of technology. Smart Schools have been established by Malaysia to systematically integrate technology into instruction (Simin Ghavifekr et al., 2016). It is reported that the project was supposed to go through four stages: the pilot project (1999-2002), the post-pilot (2002- 2005), making all schools smart (2005-2010), and consolidation and stabilization (2010- 2020) (Hoque et al., 2012). However, even though Malaysia has provided schools a virtual learning platform to enhance technology use among teachers (Simin Ghavifekr et al., 2016), it was reported that few teachers had used technology as a tool for teaching (Ayub et al., 2011). Effective online teaching and learning face barriers particularly in teachers' ability to confidently teach online.

Findings from a recent study on teacher's perceptions of large-scale online teaching by Yang (2020) found that teachers strongly support online teaching as a response to the effect of the pandemic situation on education. However, the findings also revealed that despite most teachers have experience in using technology, at least 30% of teachers in China lack training in online teaching skills. It was further stated in the study that teachers who had received training on online teaching skills found that their skills in integrating technology such as using platforms and multimedia resources to teach had improved. Additionally, the findings from the survey found that teachers perceive online teaching as 'somewhat difficult' due to students' inability to self-study, unstable internet connection, lack of familiarity with technology and techniques, difficulty in controlling course progress and limited interaction with students in a large-online class. From this study, it can be concluded that teachers' positive perceptions due to their experience of using technology prior to the education shift enables them to implement effective teaching online. As teachers undergo training in developing technological knowledge in pedagogical practice, their perception of online teaching ability improves (Northcote et al., 2015). Hence, teachers' comfort, competence and ability will enable quick adoption of technology in their teachings. Adequate teacher training on online teaching skills not only builds teachers' competency in using technology but also their confidence in implementing it. Iver (2002) adds that teachers' confidence on using technology will lead to them actively seeking chances to apply it in their teachings.

A study by Fauzi and Kusuma (2020) on Indonesian teachers that focused on the effectiveness of online learning found that teachers were dissatisfied with teaching online and considers online learning as ineffective. The study reported that they face issues with effectively teaching in an online class. These issues include lack of available facilities, unavailability of network and internet, lack of planning and implementation of teaching using technology skills, inability to evaluate effective learning in online class and difficulty in collaborating with parents. Hence, there is a need for the study to look at the factors of ineffective online teaching.

According to Martin et al. (2019), teachers face challenges in teaching online due to lack of readiness to teach online. Reports in Malaysia also found

that teachers are experiencing similar issues, which lead to poor quality of online learning. These challenges inhibit teachers from using technologies in their teaching which points to the need for teachers to acquire knowledge in technology, knowledge and use of effective strategies. In a study by Northcote et al. (2015) that surveyed faculty's self-confidence on carrying out online teaching and their online teaching ability. The findings of the study reported that teachers have low confidence in selecting appropriate technological resources despite having higher confidence in aligning online courses with learning objectives, assignments and activities within the course. This study shows that there is a need for teachers to acquire knowledge on using and integrating technology into teaching.

Teachers need to gain technical knowledge which involves understanding how to use online platforms, Internet tools, amidst developing the ability to assist students to use technology effectively (Darabi et al., 2006; Varvel, 2007). According to Kopcha (2010), developing teachers' competency in technology skills leads to teachers experiencing greater success when implementing technology in their teaching. In another study by Chikasha et al. (2014) asserts that professional development would ease teachers' adoption of technology into their teaching. Additionally, the researcher adds that teachers that have experience of using technology as a tool for learning in teacher training helps in developing a positive attitude towards the implementation. This is further supported by a study that states previous experience in using technology can change teachers' perception of using technology for teaching (Levin & Wadmany, 2008)**.** A qualitative study by Samira Nikian et al. (2013) on Malaysian teachers' perception of utilizing technology in the classroom found that while Malaysian English Teachers perceive use of technology as a learning tool positively, they collectively agreed that sufficient teacher training is needed for effective and improved quality of teaching.

From the literature discussed above, teachers' perceptions of online learning can influence the effective use of technology in teaching instruction. However, studies have found that adequate knowledge of technology and training to teach online leads to higher self-efficacy in their competency. As teachers have higher confidence in utilizing technology tools in online teachings, their perception of online learning may change.

METHODOLOGY

This research is a qualitative phenomenological study. The research is qualitative because a qualitative design provides grounds for the researcher to explore the contextual information collected of the participants' understanding of the phenomena (Cheek et al., 2004). This is due to the researcher's need to investigate English language teachers' experiences and perception of online teaching and its relation to their online writing instruction. Hence, a qualitative phenomenological study design allows the researcher to extensively explore and understand English language teachers' conceptions and experiences about online teaching of writing skill.

In order to explore English teachers' conception in teaching writing skills online, purposive sampling will be implemented. Creswell (2009) suggests

researchers to implement a 'snowball' method for sampling in a phenomenological study. A snowball method recruits samples which have similar interest or situation (Johnson, 2014). The method enables the researcher to recruit participants by referrals from the existing participants who have similar experiences (Johnson, 2014). In this study, only teachers who fit the criterias specified by the study and have expressed their agreement to participate will be asked to participate in the study. From the snowball method, a list of participants of those who fit in the criterias of the study were generated. The list of participants were then further narrowed down by considering their teaching experiences and availability to participate in the research.

A semi-structured interview with the participants was conducted through video conferencing. Interviews were video recorded using a screen recorder app. The researcher would then transcribe the interview for analysis. The transcribed interviews were sent to the participants for review, though the practice of leaving out any interview content was not encouraged. During the interview, notes were taken. According to Birks and Mills (2015), writing notes and constant comparative analysis help minimize bias which provides added objectivity in the study. Interviews were then analysed using a thematic method of analysis.

RESULTS AND DISCUSSION

Description of participants. The results of this qualitative study are based on the interviews of two English teachers teaching in different public primary schools in Sabah. Both participants teach English to upper primary students which are Year 4, Year 5 and Year 6.

Kim is a 26 years old novice teacher with three years of teaching experience. She was enrolled in a three-year education degree program in a private university in Kuala Lumpur. During her university years, she was exposed to various technological tools for learning.

On the contrary, Lim is a 45 years old experienced teacher. She has been teaching for nine years. Lim was from a teacher-training school in Kuala Lumpur. Lim had little to no experience of using technology for teaching.

Each participant was interviewed via video conference as it was an effective way to communicate due to the restriction of face-to-face meetings during the pandemic. The researcher transcribed the interviews within several days for participants to review and verify their statements. Direct interview quotes were used to highlight data. Direct interview quotes were used to highlight and personalize the data. Participants' names have been changed to protect their identity.

Thematic analysis. Thematic analysis is a method used to identify themes that are significant in qualitative data. Then, the themes are used to address the questions in the research. This study follows Braun and Clarke's (2006) 6-step framework. The initial step in analysing qualitative data is to transcribe and to roughly jot down notes on the entire data. The interview transcripts are read multiple times to allow the researcher to be familiarised with the data. Then, Braun and Clarke (2006) suggest for researchers to identify important and interesting data from the transcripts using open coding in order to generate

initial codes. Each piece of text that seems to be relevant in addressing the study's research questions are coded. Subsequently, the codes are examined and collated into themes. There are no strict definitions on what themes are (Braun &Clarke, 2006), but it is distinguished by its significance. Once preliminary themes are established, they need to be reviewed for relevance and association with the data. Themes are refined through a process of scrutinising whether the data supports the theme. The next step in analysing qualitative data is to define the essence of each theme in the study. The sixth step in Braun and Clarke (2006) framework is to report on the study.

Theme 1: ESL teachers' conceptions about teaching English online

The teachers that participated in the study revealed that they had diverse perceptions of teaching English online during the COVID-19 pandemic. Kim expressed a positive view of teaching English online due to her experience in using technology tools in learning while she was a university student:

Kim: …in university we were pretty much technology based… Our assignments, and quizzes. Everything's pretty technology-based, I'm used to it. Using online classrooms, video apps, things like that. So, I wasn't apprehensive with online learning like some teachers are.

However, Kim also revealed that while she "... don't really mind teaching online", she admitted that teaching online was difficult in the first few weeks when she started teaching English online. While Kim had a fairly positive view of online ESL teaching, she expressed her frustration in managing online classes and described her first few weeks of teaching as "... it was all OVER the place. I couldn't get any teaching going on for the first few days, honestly."

Despite Kim's optimistic views about teaching English online, Kim asserts that "...Effective online teaching comes with knowing what to do in class…". She adds:

> Kim: … we're in a different situation now. We need to teach online. So, if the teacher doesn't have enough knowledge or skills in online teaching because online and offline classes are different. If you don't have online teaching skills, but have content and pedagogy knowledge? I think that there's still a high chance that the class you're teaching is ineffective.

This suggests that the effectiveness of online learning is within means. Kim believes thateffective online teaching is the integration of technology, pedagogy and content knowledge,and skills.

Teaching ESL online, in Lim's eye, is more negative than positive. Lim's perception of teaching English online showed her apprehension towards online learning. Lim describes teaching online as an interaction barrier between her and her students. Her negative view on teaching online was further fueled from her inexperience of using technology in teaching, asserting that "Before this whole COVID thing, I've never used online or Slides or the internet to teach. I remember when we were told to teach from home, I remember thinking, NOPE. Teaching online doesn't work." Lim also contemplates whether children could learn anything in an online class.

However, Lim's view on online ESL teaching changed after several weeks of experiencing online ESL teaching. She reflects that online teaching is "more satisfying" at present as her skills in using technology to teach

improved. She further comments that online teaching increased interaction with her students, which was opposite of her initial reaction to the shift to teaching online during the pandemic.

Moreover, both teachers assert that online teaching mostly had a positive influence on students' progress:

> Kim: Both good and bad changes I think. Some of my kids do really well these days. They can write a WHOLE cohesive essay on their own now...They can't even write sentences suddenly. They went from being able to write something in class to nothing.
>
> Lim: I can see that some of my students do write better now. They write clearly, more together, and fluently.

Theme 2: ESL teachers' challenges in using technology in online teaching

Both teachers, Kim and Lim, expressed confusion and uncertainty about teaching ESL online initially. Despite having experience in using educational technology, Kim revealed that she was confused on how she could teach English online the way she had taught in class. Kim illustrates her usual English class in detail:

> Kim: For example, I've always been doing a collaborative class. When this applies to when I'm teaching writing, comprehension, spelling, things like that, I'm always pairing them up. It's always through a process. Through steps like getting them to brainstorm before writing. But, it was SO difficult to implement that in an online class.

She also describes teaching English online as different from her experience in using technology for learning while she was in university. She expressed her thoughts on the importance of training in using technology for teaching English online:

> Kim: ...that's why I really wanted my school to do some online training about the whole online learning because it's something new to all of us. For example, I have experienced in using technology, but that's in university. Teaching online, I think, is different than that. For one, how do you engage kids in an online class? How do you teach something complex like writing online? How do you make learning how to write in an online class manageable and fun for the kids? Those are the things that I think would make anonline class effective.

The above excerpt suggests that Kim may feel anxious teaching online despite her experience in using technology. Kim's anxiousness in teaching English online mirrored Lim's as she dwelled about the difficulty in integrating technology in her English class due to inadequate training:

> Lim: For someone with very little experience and knowledge in doing things online, it'svery difficult. My school gave a tutorial for using Google Classrooms. You know, step 1, step 2 kind of thing. But, it stops there! And I go, and then what? How do I teach them English?

Both met challenges on online teaching regarding competency in integrating technology into online English teaching. From the above excerpts by Kim and Lim, it is clear that they believe that school training on online teaching that involves methods to integrate English teaching and technology is important and imperative for teachers in order to effectively teach students. Lim also revealed that her lack of knowledge in utilising educational

technologies during the initial online ESL teaching affected her instruction and teaching plans:

> Lim: I couldn't figure out how to use the platforms before. Especially in the first few weeks of teaching online. So I did it as if I was filming myself teaching.
>
> I taught them writing skills once I was able to operate Google Classroom.

The abrupt breakout of the COVID-19 pandemic puts ESL teachers in an unfamiliar teaching environment with limited knowledge and skills in ICT and online teaching which restricts them from conducting online teaching effectively.

Kim and Lim both expressed that class management was a challenge for them. Kim describes her initial online class as hectic and the online learning environment as unideal. While Lim was met with challenges regarding student participation in class. She reveals that very few students submitted their class activity worksheets. Lim admitted that she initially felt demotivated due to the lack of participation in class amongst other challenges she was facing:

> Lim: …the class would be really quiet. And the children! They don't turn on the camera so it felt as if I was speaking to no one. So I got quite demotivated because I wasn't quite good with technology and the children weren't responsive.

Invalid classroom management that came with the shift in education was a challenge to teachers. While they were familiar with face-to-face (F2F) teaching where they are able to observe and monitor students' progress physically, teachers and students are behind the screens of their devices in an online class. Hence, class management became a challenge to teachers. Inefficient class management in an online class may lead to students' lack of participation, attention which would cause poor learning outcomes.

DISCUSSION. The findings from the interview revealed about teachers' conceptions of technology and its influence in teachers' adopting technology for teaching and learning. The findings also revealed that there are several challenges in using technology and in teaching online which suggests its effect on teachers' perception of technology. Moreover, the interview findings also indicate the participants' ways in coping with the challenges they encounter.

The results of the interviews revealed that teachers' perceptions of online teaching had an impact in their online ESL teaching instruction. Based on the findings of the study, both teachers had diverse perceptions on online learning. Kim had a positive perception of online teaching and learning as she had experience in using technology. This is inline with Yang (2020) study that states that teachers' positive perceptions are due to their experience of using technology prior to the education shift which enables them to implement effective teaching online. According to Buabeng-Andoh (2012), teachers' attitudes in using educational technology influences the extent they adopt and integrate ICT into teaching and learning. Kim's age may also influence her perception of online teaching. Lourenco and Cronan (2017) claims that teachers who are born surrounded with technologies are able to use technology.

Contrary to Kim's view of online teaching, Lim's negative perception of online teaching which stemmed from different teaching beliefs, her inexperience and lack of knowledge in using technology for education had limited her ability to effectively teach ESL online. Studies have shown that teachers' negative perceptions barriers in utilising ICT for teaching and learning (Silviyanti & Yusuf, 2015). Among factors that influence teachers' adopting ICT include inadequate knowledge in ICT which may lead to lack of confidence in using and integrating educational technologies in teaching and learning process (Silviyanti & Yusuf, 2015). Effective use and integration of educational technology in teaching and learning are highly determined by teachers' perception and attitude. According to Buabeng-Andoh (2012), it is likely that teachers will not adopt technology into their teaching and learning if technology is perceived as not beneficial for teachers as a tool for teaching nor students' needs. Thus, the findings of the study revealed that teachers' perceptions of online teaching influences teaching instruction, and restricts the teachers intention to use technology for teaching. These findings are in agreement with the study's framework of technology of acceptance model (TAM). The framework surrounds the notion that if a teacher's personal beliefs are compatible with the online teaching values, it is likely that they perceive online learning and technology tools as easy (PEOU) and useful to use (PU). Teachers that lack technological knowledge would perceive teaching online and using technology tools as difficult. This can lead to teachers having low confidence in teaching online and in using technology for teaching which thus, influences their ESL instructions in online classes.

From the extracts of the interview, it can be seen that both teachers' perceive the use of technology for teaching and learning differently after experiencing online ESL teaching. Ferreira et al. (2018) states that there is a need for teachers to acquire "professional practice" by acquiring knowledge in content, pedagogy and technology instead of simply adopting technology for the sake of transferring content to students. This is reflected in what the Kim is saying:

Effective online teaching comes with knowing what to do in class…we're in a different situation now...if the teacher doesn't have enough knowledge or skills in online teaching skills, but has content and pedagogy knowledge? I think that there's still a high chance that the class you're teaching is ineffective.

This seems to suggest that while Kim believes that effective online teaching as having knowledge in content, pedagogy and technology. Teachers need to acquire the three essential knowledge for effective online teaching since teaching online requires teachers to select technological tools and apply appropriate technology skills to deliver content (Zaidi & Hussain, 2019).

CONCLUSION

This study concluded that there was a varying perception of ESL teachers' perception regarding teaching online and technology use in an online class which was due to teachers' perceived ease of use and perceived usefulness of technology in teaching online. Overall, the teachers reported that online teaching

has considerably impacted their teaching instruction and role in class as well as their professional development as teachers.

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