A Study of Indigenous (Orang Asli) Students' Engagement in Mandarin Online Learning

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Abstract
The COVID-19 pandemic has caused a widespread shift toward online Mandarin language teaching and learning. In this new educational landscape, ensuring consistent engagement from learners is crucial, particularly for indigenous (Orang Asli) students who lack the necessary equipment. To enhance online education, we must study forms of engagement, especially for indigenous (Orang Asli) students, and identify their preferred mode of engagement. The purpose of this study is to assess the level of participation among indigenous (Orang Asli) students in online learning. To collect quantitative data, a set of 24 questionnaire items adapted from Martin & Bollinger (2018) was administered to indigenous (Orang Asli) students residing in a welfare home in the Klang Valley. Additionally, a semi-structured interview was employed to investigate potential factors that could impact the online participation of indigenous students. The study revealed that collaborative efforts with peers in the same group were the most well-received learner-to-learner interactions, whereas a supportive classroom community positively impacted student engagement. The study's results have significant implications for educators, particularly when teaching the Mandarin language to indigenous (Orang Asli) students. Simultaneously, the findings carry substantial consequences for indigenous (Orang Asli) learners who hope to increase their engagement in online education.
Keywords: Online Mandarin Language Learning, Indigenous (Orang Asli) Students, Learner-Learner Engagement, Learner-Instructor Engagement, Learner-Content Engagement

Introduction
The COVID-19 pandemic has dramatically transformed the education landscape in Malaysia. With the enforcement of the Movement Control Order (MCO) 1.0 since March 2020, online learning has become the new norm in every education level, from primary school to university. Despite the country's recent transition to the endemic era, online learning remains crucial. The pandemic has also led to a surge in online Mandarin language learning. However, indigenous (Orang Asli) students face several challenges, including a lack of necessary equipment, which makes consistent engagement difficult. In other words, the current

education landscape demands a paradigm shift, particularly in the engagement of students in online learning. Indigenous (Orang Asli) students face unique challenges in this environment, which can significantly impact their engagement and academic performance.

However, it is challenging to ensure students' consistent engagement in this new mode of education. Are the students engaging with their peers, and instructors, and truly understanding the course content? Despite previous studies discussing online learning engagement, there is still a significant gap in research on indigenous (Orang Asli) students' engagement in Mandarin online learning. Hence, this study aims to address this gap and bridge the knowledge divide.

The purpose of this research is to investigate the specific factors that influence the engagement of indigenous (Orang Asli) students in Mandarin online learning. To achieve this objective, the study will address the following research questions:

(i) How does learner-to-learner engagement impact Mandarin online learning for indigenous (Orang Asli) students?
(ii) How does learner-to-instructor engagement impact Mandarin online learning for indigenous (Orang Asli) students?
(iii) How does learner-to-content engagement impact Mandarin online learning for indigenous (Orang Asli) students?

The research questions above will provide a roadmap for the analysis and interpretation of the data collected. The outcomes of this study have the potential to guide policymakers and educators in promoting equitable and inclusive online learning opportunities for indigenous (Orang Asli) students, specifically in online Mandarin language learning.

The Study's Theoretical Framework

This section presents the theoretical framework of students' engagement in online learning, which includes the three essential elements of interactions (also known as engagements) in online learning: learner-learner interaction, learner-instructor interaction, and learner-content interaction. Additionally, the researcher examines previous studies conducted on students' engagement in online learning and establishes their relevance to the present study. This study is grounded on Moore's framework, which emphasizes the significance of student interactions in online learning. Moore identifies three key elements of online interactions (or engagements), namely learner-to-learner, learner-to-instructor, and learner-to-content interactions - that are necessary for creating a captivating and purposeful online learning environment (Martin & Bolliger, 2018). Please refer to Figure 1 for more details.
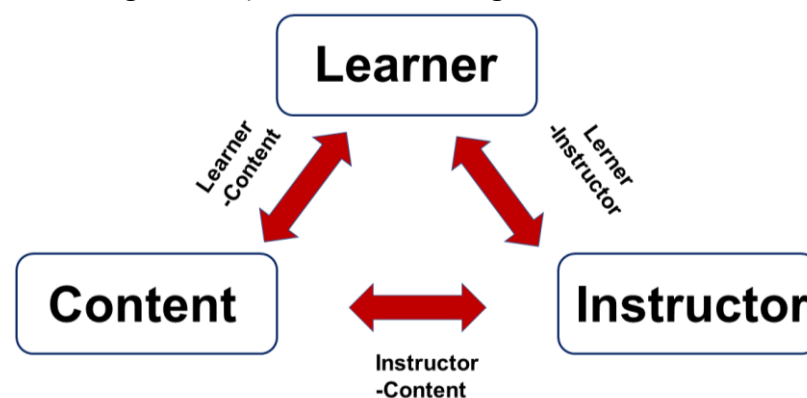

Figure 1: Types of Interactions in Online Learning (Martin & Bolliger, 2018)

As shown in Figure 1 above, Moore (1993) established three fundamental interaction types that make online courses effective: (i) Learner-to-Learner Engagement, (ii) Learner-to-Instructor Engagement, and (iii) Learner-to-Content Engagement. Learner-to-learner engagement involves activities such as student collaboration and community support. This type of interaction enables learners to share their knowledge and insights and provides an opportunity to learn from their peers. Apart from that, learner-to-instructor engagement refers to the teaching activities and the continuous interactions between learners and instructors. This type of interaction allows learners to receive guidance, feedback, and support from their instructors. Lastly, learner-to-content interaction involves the activities that learners engage in while using the learning materials and user interface. This type of interaction is essential for learners to acquire knowledge and skills effectively. According to Lear et al (2010), students' interactions or engagements with peers, instructors, and course materials enable them to become more engaged and active in their online courses.

Previous Studies on Learner-to-Learner Engagement
Learner-to-learner engagement is crucial in promoting student engagement in online learning as it encourages collaboration among students, leading to a better understanding of the course material and the effective use of online communication tools. Regarding facilitating effective learner-to-learner interaction and enhancing student engagement, it is important to tailor online activities to students' needs and facilitate communication-related decision-making (Young & Bruce, 2011). As recommended by Lewis, Whiteside and Dikkers (2014), it is important to carefully plan online activities that involve grouping students. One effective approach is to pair students who can work together one-on-one. To avoid online students feeling disconnected or disengaged, it's crucial to design activities that foster a sense of community and connectivity. Revere and Kovach (2011); Banna et al (2015) found that traditional technologies such as blogs, discussion boards, chat sessions, wikis, peer assessments or group tasks are effective in promoting student-to-student interaction in online courses.

In another study, Shea et al (2001) indicate that increasing the weightage of discussions in the overall course grade results in higher student satisfaction, greater learning outcomes, and increased engagement among peers and instructors. Moreover, Banna et al (2015) have identified video conferencing, chatting, and discussion boards as effective tools for enabling both synchronous and asynchronous interactions among students. Finally, the use of social media in online courses provides an opportunity for students to enhance engagement through social interaction (Everson et al., 2013; Tess, 2013).

Previous Studies on Learner-to-Instructor Engagement
Several past studies have indicated that learner-to-instructor interaction is crucial in boosting student engagement in online courses (Dixson, 2010; Gayton & McEwen, 2007). It is recommended that online instructors prioritize student-instructor interactions as they significantly impact learning outcomes (Dixson, 2010; Gayton & McEwen, 2007). Creating a collaborative and interactive environment that includes group work and instructive feedback can foster rapport and collaboration between students and instructors, leading to improved student engagement and learning success. To increase student engagement further, it is necessary to provide opportunities for students to interact with both their peers and instructors, particularly concerning what makes their learning meaningful.

Gayton and McEwen (2007) argue that instructors should be actively involved in online courses, but they should also allow students to take the lead in discussions. Students contacting instructors about assignments, course materials, and grades are common, but consistent interaction at the individual and group levels helps set academic expectations among students. According to King (2014), Providing timely and thorough feedback, along with using video and screencasting techniques, can increase instructor visibility and improve the learning process.

Moreover, Revere and Kovach (2011); Robinson and Hullinger (2008) suggest utilizing various established technologies such as discussion boards, chat sessions, blogs, wikis, group tasks, Twitter, Skype, and YouTube to encourage student engagement through course design and technology integration. These technologies can also be used for effective social networking activities in online active learning to boost student engagement.

Previous Studies on Learner-to-Content Engagement
Engagement between learners and content involves actively engaging with the material to broaden their understanding and perspectives (Moore, 1993). According to Abrami et al (2011), student-to-content interaction can occur in various forms, such as watching instructional videos, interacting with multimedia, and searching for information. Both synchronous and asynchronous delivery methods are considered effective options for online students to access content for critical interaction (Banna et al., 2015).

To encourage learners to engage with the content, it's recommended that online instructors dedicate enough time to finding scholarly readings and interactive instructional materials, while also creating meaningful assessments (Abrami et al., 2011; Banna et al., 2015). Moreover, one effective approach to improving subject mastery and critical thinking abilities is by assigning real-world application projects that demonstrate the relevance of the course material (Britt, 2015).

Furthermore, Revere and Kovach (2011) suggest using appropriate technology to make the content more engaging and come to life. Online instructors must be selective in choosing material and content that effectively engage students in their courses. Instead of simply providing students with a list of resources, instructors should design authentic activities that encourage students to examine tasks from different perspectives and use relevant information wisely. Dixson (2010) found that students reported feeling engaged with a variety of activities, including course management system features, effective communication, and course facilitation strategies.

Despite previous research in the field, there is still a significant lack of studies examining the engagement of indigenous (Orang Asli) students in online Mandarin language learning. To address this gap, this study aims to investigate this area further by using the research methodology discussed below.

Methodology
Research Design
This pilot study employs survey methods to gather quantitative data and answer research questions related to the factors influencing the participation of indigenous (Orang Asli) students in online learning when learning Mandarin as a communication language. Quantitative data were collected using a questionnaire. Oppenheim (2000) claims that questionnaires are an effective data collection method for research since researchers can gather findings from respondents who answer the questionnaires (cited in Wahid,et.al, 2020).

Additionally, Lay and Khoo (2014) state that the survey method is the most suitable approach for using questionnaires to collect quantitative data on human opinions regarding social, political, cultural, and economic issues. These findings align with the purpose of this study.

Location and Sample

The study was conducted at the *Pertubuhan Kebajikan Rumah Mega Kanak-kanak Orang Asli*, a welfare organization for indigenous (Orang Asli) children located in Bandar Sri Damansara, Selangor. The rationale for selecting this location was based on its extensive experience in managing the affairs of Orang Asli children. Moreover, accessibility was also a key factor in choosing this location.

The sampling method used in this study was convenience sampling, whereby respondents were chosen based on their willingness, availability, and convenience (Saunders et al., 2007). A total of 29 indigenous (Orang Asli) students from a welfare organization who had experienced online Mandarin language learning were included in the study. The participants, aged between 7 and 18 years, had taken a short-term online Mandarin course for five weeks, from 9th October to 6th November 2021. All participants received the same questionnaire via Google Forms.

Instrument

This study collected data from respondents using a modified questionnaire framework based on several past studies (Lee et al., 2019; Borup, 2016; Gutierrez, 2013; Alem, 2014; Conole, 2012; Martin & Bolliger, 2018). The questionnaire consisted of four sections (Sections A-D) with a total of 23 items. Section A included three questions on respondents' demographic information. Section B consisted of six questions on learner-to-learner engagement. Section C comprised seven questions on learner-to-instructor engagement. Finally, section D included seven questions on learner-to-content engagement. All questions in these three sections were rated on a 5-point Likert scale (1=strongly disagree to 5=strongly agree).

The reliability of the questionnaire was evaluated using Cronbach's alpha function, which was found in the Statistical Package for Social Sciences version 28.0 (SPSS 28.0). The obtained Cronbach's alpha coefficient for the instrument was 0.862, indicating high reliability.

Table 1
Cronbach Alpha

Reliability Statistics	
Cronbach's Alpha	N of Items
0.862	20

Method of Data Collection

Online questionnaires were sent via WhatsApp to 29 indigenous (Orang Asli) students, after obtaining their consent to participate in this study and ensuring that their responses would remain confidential. The data was then automatically processed by the online survey service after the responses were received. Descriptive data analysis was carried out using the data analysis tool provided.

Method of Data Analysis
The data from this study were analyzed using SPSS version 28.0. The questionnaire results were tallied and calculated as percentages and mean. These responses were then displayed using charts and tables.

Findings
The findings of the study have been categorized into four main sections. Firstly, the demographic profiles of the respondents were assessed through a questionnaire. The second section focused on answering research question 1 (**RQ1**): "*How does learner-to-learner engagement impact Mandarin online learning for indigenous (Orang Asli) students?*" The third section presents findings regarding **RQ2**: "*How does learner-to-instructor engagement impact Mandarin online learning for indigenous (Orang Asli) students?*" Lastly, the fourth section scrutinized the findings of **RQ3**: "*How does learner-to-content engagement impact Mandarin online learning for indigenous (Orang Asli) students?*"
To assess the responses, a 5-point Likert scale was utilized, and the mean values of the statements were computed. The Likert scale options are defined as follows: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, and 5-Strongly Agree. The computed values of the scale responses were used for the analysis of the research data.

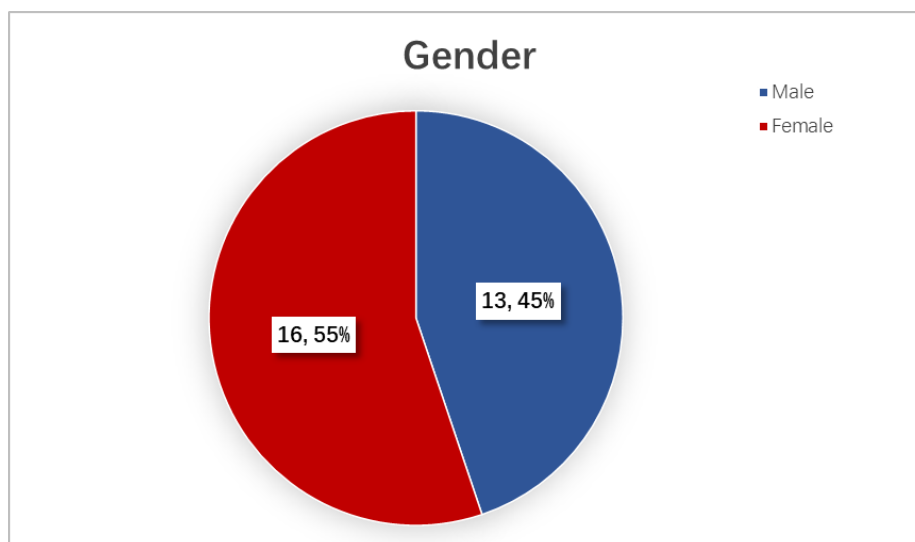**Findings for Demographic Profile**
Gender

Figure 2: Gender

The results showed that 55% of the respondents were female and 45% were male. The gender ratio of respondents was similar.
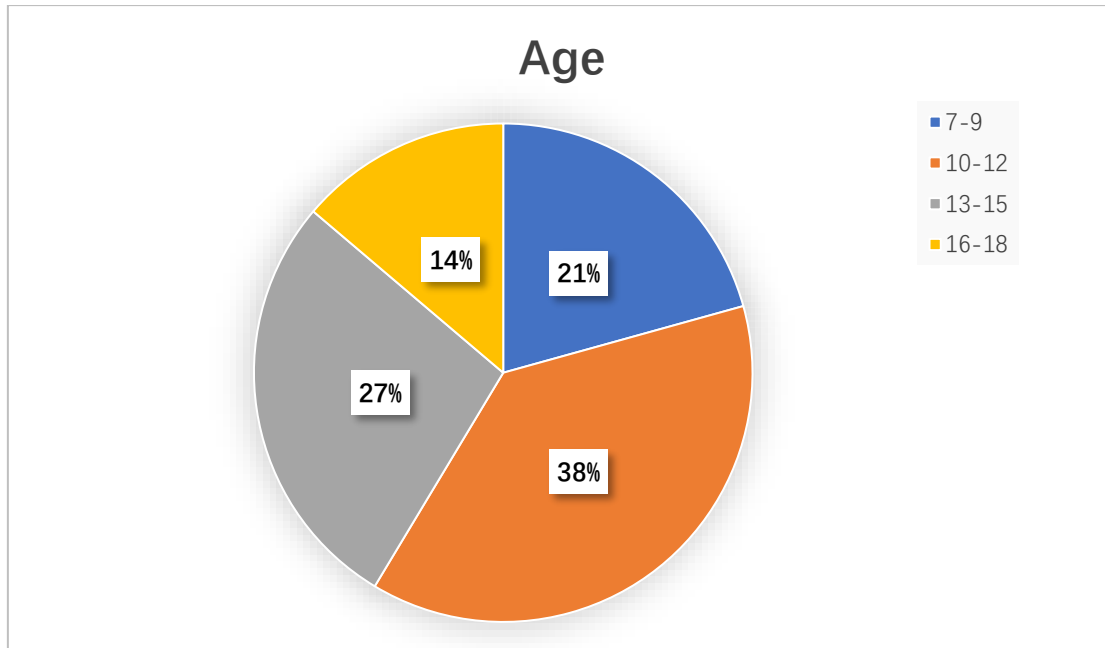
Age

Figure 3: Age

The results showed that most respondents were between the ages of 10 and 12, which accounted for 38% of the total. 27% of the respondents were between the ages of 13 and 15, while 21% were between the ages of 7 and 9. The remaining 14% of respondents were aged 16 to 18. Overall, the respondents were relatively young, with most being less than 12 years old.
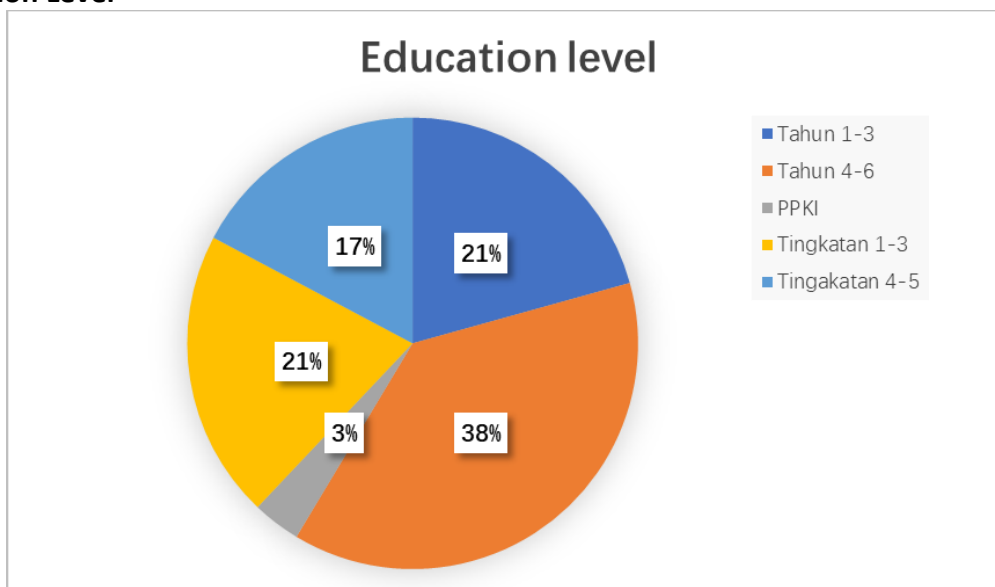
Education Level

Figure 4: Education Level

According to the results, 59% of the respondents were primary school students who were majoring in research, while 38% were in secondary high school. The remaining 3% were enrolled in the integration special education program (Program Pendidikan Khas Integrasi, PPKI).

Findings for RQ1: " *How does learner-to-learner engagement impact Mandarin online learning for indigenous (Orang Asli) students?*"

Table 2
Means and standard deviation for Learner-to-Learner Engagement

ITEM	MEAN	STANDARD DEVIATION
S4. Collaborative learning promotes peer-to-peer understanding.	2.79	1.47
S5. I would like to ask for help from my peers.	3.55	1.30
S6. I prefer to be in the same group with my chosen peer for online activities.	3.83	1.20
S7. I think that the sense of community helps me to engage in online class.	3.21	1.32
S8. I think support from peers motivates me to finish tasks.	3.34	1.56
S9. I think that support from peers prevents me from dropping out of online class.	3.72	1.31

Table 2 illustrates six types of indigenous learner-to-learner engagements in learning Mandarin online. Among these, the item "same group with chosen peers" had the highest mean at 3.83, followed by "support from peers prevent me from dropping out of class" with a mean of 3.72. The items "ask for help from peers," "peers' motivation," and "sense of community" had means of 3.55, 3.34, and 3.21, respectively. The engagement with the lowest mean was "collaborative learning promotes understanding," with a mean of 2.79.

Findings for RQ2: "*How does learner-to-instructor engagement impact Mandarin online learning for indigenous (Orang Asli) students?*"

Table 3

Means and standard deviation Learner-to-Instructor Engagement

ITEM	MEAN	STANDARD DEVIATION
S10. I think that the instructor's teaching style involves students' active participation.	2.83	1.28
S11. I feel encouraged by my instructor to keep engaged in the online classroom.	3.21	1.15
S12. My instructor provides feedback regarding my previous assessment.	3.38	1.15
S13. I think feedback from my instructor on my performances are clear and positive.	3.21	1.40
S14. My instructor uses more than two communication tools to stay connected with students.	3.93	1.22
S15. I think that the online platforms used by your instructor for my online class are effective and convenient.	2.83	1.34
S16. My instructor maintains ongoing interaction with students after online class.	3.21	1.40

Table 3 presents seven items of indigenous learner-to-instructor engagements in online Mandarin learning. The item with the highest mean score was "instructor using more than two communication tools" at 3.93. The second-highest mean score was for "instructor providing feedback" at 3.38. The items "encouragement from the instructor", "clear and positive feedback", and "ongoing interaction" had the same mean score of 3.21. The items "instructor's teaching style" and "effective and convenient use of online platforms" had the same lowest mean score of 2.82.

Findings for RQ3: "*How does learner-to-content engagement impact Mandarin online learning for indigenous (Orang Asli) students?*"

Table 4

Means and standard deviation for Learner-to-Content Engagement

ITEM	MEAN	STANDARD DEVIATION
S17. I think that the synchronous activities (i.e., online discussion) could offer immediate assistance.	3.10	1.14
S18. I think that the asynchronous activities (i.e., assignment) could offer immediate assistance.	3.17	1.23
S19. I think the activities could improve the understanding of subject-matter.	2.90	1.42
S20. I think the activities in online learning could improve my critical thinking skills.	2.34	1.26
S21. I can use relevant knowledge wisely in the learning process.	3.10	1.32
S22. I feel that the ease of online content is important.	2.97	1.57
S23. I feel that it is important to get an overview of the content before the class begins.	3.90	1.08

Table 4 presents the results of the analysis of seven aspects of the interaction between indigenous learners and online Mandarin content. The item with the highest mean score was "getting an overview of the content before class," which scored 3.90. The second-highest item was "asynchronous activities," with a mean score of 3.17, followed by "synchronous activities" and "using relevant knowledge wisely," both with a mean score of 3.10. The item "ease of accessing online content" received a mean score of 2.97, while "activities that could improve the understanding of subject-matter" received a mean score of 2.87. The lowest mean score was for the item "online activities that could improve critical thinking skills," which scored 2.34.

Conclusion

The research aimed to investigate the engagements (also known as interactions) among indigenous learners in the context of online Mandarin learning. Specifically, the study examined three types of engagements: learner-to-learner, learner-to-instructor, and learner-to-content engagements. Collaborating with peers in the same group was the highest-rated learner-to-learner engagement, while a supportive classroom community was found to be a motivating factor for student participation. Concerning learner-to-instructor engagements, learners appreciated instructors who utilized multiple communication tools and provided feedback. The highest-rated item among learner-to-content engagements was "getting an overview of content before class," followed by "asynchronous activities" and "using relevant knowledge wisely." Consistent with previous research by Bolliger and Martin (2018);

Muncundayi (2019), the findings revealed that learners highly value interactions with their peers and instructors.

Discussions

Learner-to-learner engagements have highlighted the significant role peers play in fostering a true sense of learning community. In this study, the participants resided in the same welfare house and shared similar cultural backgrounds. Consequently, their peers strongly impacted their learning by providing support and assistance, boosting their confidence, and creating a safe learning environment, which increased participants' involvement during online learning. However, due to their pre-existing familiarity, the potential of collaborative learning in fostering a deeper understanding was not fully realized."

In online learning, particularly in Mandarin online learning, students are unable to communicate face-to-face as in traditional classroom settings, which may reduce the effectiveness of communication. Employing diverse communication tools not only mitigates the potential hazard of students failing to receive information but also enables them to select communication media that align with their preferences. Effective communication becomes even more crucial between learners and instructors during online learning. Therefore, teachers must ensure that students truly comprehend the information, instructions, and knowledge they have acquired. Providing feedback is another means to ensure that students are on the right track. The lack of physical social interaction and the inability to receive timely feedback can potentially lead students to feel helpless and isolated during online learning. Maintaining continuous interaction with students after online classes can help alleviate the limitations of online instruction. Teachers may overlook the importance of providing students with positive feedback and encouragement during online teaching. Encouragement can help students build confidence to overcome difficulties encountered during the learning process. Additionally, the broad age range and educational level span also pose certain difficulties in course design and teaching style, as it is challenging to meet the needs and preferences of all participants.

Providing an overview of upcoming class content can assist students in reviewing and comprehending related content and knowledge. The incorporation of a range of synchronous and asynchronous activities during online learning can facilitate students' understanding and mastery of the learning material. In addition, teachers should assign a variety of diverse assessments that not only focus on subject-specific knowledge but also utilize or train students in other relevant knowledge, thereby increasing the interest and richness of assessments.

Suggestions for Future Research

It is important to acknowledge several limitations of this study, which can serve as a valuable reference for future researchers who wish to replicate or conduct similar studies. The relatively small sample size used in this study may not fully capture the diversity and complexity of the experiences of indigenous students. Moreover, the focus on students residing in welfare homes may restrict the generalizability of the findings to other indigenous student populations in different contexts. Additionally, due to the limited sample size, participants were not categorized according to their age groups and educational levels. It is anticipated that future studies will conduct further categorization to enable a deeper understanding and investigation of the distinct characteristics of indigenous (Orang Asli) language learners across various age ranges and educational levels.

In a nutshell, by shedding light on the unique experiences of indigenous (Orang Asli) students, this study can contribute to developing effective strategies to improve their engagement in online learning, especially in the field of online Mandarin language learning, and ensure equitable access to education for all Malaysians, regardless of their background.

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