

Online Teaching Experience of ESL Pre-Service Teachers in Malaysian Secondary Schools During the COVID-19 Pandemic: Approaches, Challenges and Perceptions

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ABSTRACT

The COVID-19 pandemic forced an abrupt transition from face-to-face classrooms to online platforms, placing exceptional demands on pre-service teachers who were completing their teaching practicum with little preparation in digital pedagogy. This study examined the online teaching experiences of English as a Second Language (ESL) pre-service teachers who taught in Malaysian secondary schools during the Movement Control Order (MCO) period. Three objectives guided the study: to identify the online teaching approaches used, to determine the challenges encountered, and to explore perceptions of online teaching. A quantitative cross-sectional survey was administered through Google Forms to 112 pre-service teachers who had completed their practicum between 2020 and 2023. Attitudinal items were measured on a five-point Likert scale anchored 1 = strongly disagree to 5 = strongly agree, and were interpreted against a stated mean-score rubric. Data were analysed using descriptive statistics, independent-samples t-tests and one-way ANOVA. Respondents relied heavily on synchronous platforms — Google Meet, Zoom, Google Classroom and Microsoft Teams — supported by videos, presentation slides, online quizzes and worksheets, with group discussion and project-based activities the most common strategies; dedicated speaking practice was almost absent (0.9%). Self-reported teaching confidence was low, with only 9.0% of respondents selecting the top two scale points. All 13 attitudinal items produced means in the narrow band 2.12–2.50, which falls within the low range of the interpretation rubric, indicating that respondents did not, on average, endorse either the challenge statements or the positive perception statements strongly. The most endorsed challenge was difficulty preparing online teaching materials ($M = 2.31$, $SD = 0.85$) and the most endorsed perception was increased adaptability and creativity ($M = 2.50$, $SD = 0.86$). The narrowness of this band, together with subscale reliabilities below the conventional .70 threshold, means that differences between individual items should not be over-interpreted. The study concludes that teacher education programmes should embed structured online pedagogy within the curriculum through online micro-teaching and school-based mentoring rather than relying on incidental exposure during the practicum.

Keywords: ESL online teaching, pre-service teachers, COVID-19 pandemic, teacher education, TPACK, Quality Education (SDG 4)

INTRODUCTION

The COVID-19 pandemic produced one of the most extensive disruptions to education in modern history. Schools in more than 190 countries were closed at the peak of the crisis, and teaching moved almost overnight from physical classrooms to digital platforms (Pokhrel & Chhetri, 2021). In Malaysia, the government implemented the Movement Control Order (MCO) from March 2020, and primary and secondary schools

were required to deliver lessons remotely for extended periods between 2020 and 2021. What emerged was not carefully designed online education but emergency remote teaching, a temporary shift of instructional delivery in response to a crisis (Hodges et al., 2020). The distinction matters because emergency remote teaching was implemented without the planning, infrastructure and pedagogical preparation that characterise well-designed online courses, and its burdens fell heavily on the teachers who had to deliver it (Ferri et al., 2020).

Among the groups most affected were pre-service teachers. These student teachers were completing, or about to begin, a supervised practicum traditionally conducted in physical classrooms under the close guidance of mentor teachers and university supervisors. When schools closed, they were required to conduct practicum lessons entirely online, frequently with minimal training in digital pedagogy, limited mentoring and uneven access to technology (la Velle et al., 2020; Sepúlveda-Escobar & Morrison, 2020). Research across multiple contexts has shown that novice teachers experienced this transition as particularly stressful because they were simultaneously learning to teach and learning to teach online (König et al., 2020; Moorhouse, 2020).

The situation was especially demanding for pre-service teachers of English as a Second Language (ESL) in Malaysian secondary schools. English is a compulsory subject in the national curriculum and a key gatekeeper for further study and employment, so the pressure to maintain the quality of English instruction was considerable. Language teaching also depends heavily on interaction, immediate feedback and communicative practice, all of which are difficult to reproduce in low-bandwidth online environments (Hazaea et al., 2021; Tao & Gao, 2022). Studies of Malaysian ESL teachers during the pandemic reported persistent problems with internet connectivity, student participation and assessment of language skills in virtual classrooms (Lukas & Yunus, 2021). Pre-service ESL teachers faced these same problems while still developing basic pedagogical competence.

Although a substantial body of research has documented the experiences of in-service teachers during the pandemic, comparatively less attention has been given to pre-service teachers in the Malaysian secondary ESL context, particularly with respect to the approaches they adopted, the challenges they faced and the perceptions they formed. Understanding these experiences matters for two reasons. First, the pre-service teachers who taught during the MCO period are now entering the profession, and their formative experiences will shape their practice. Second, teacher education programmes need empirical evidence to redesign curricula so that future cohorts are better prepared for technology-mediated instruction, a preparation now widely regarded as a core professional competency rather than an optional skill (Falloon, 2020; Nagel, 2021).

Three research questions guided the study: (1) How did Malaysian secondary ESL pre-service teachers conduct online classes during the COVID-19 pandemic? (2) What challenges did they face when teaching online? (3) What were their perceptions of online teaching? A fourth, subsidiary question asked whether reported challenges and perceptions differ significantly by programme of study, gender or year of practicum.

The study is significant for several stakeholders. For pre-service teachers, the findings identify common practices and obstacles in online instruction. For teacher education programmes, they highlight specific gaps in digital pedagogy training that can be addressed through curriculum design, online micro-teaching and structured mentoring. For policymakers and school administrators, they provide evidence for investment in infrastructure and support systems. In doing so, the study contributes to United Nations Sustainable Development Goal 4 (SDG 4), which calls for inclusive and equitable quality education, because well-prepared teachers are a precondition for quality education in both normal and crisis conditions.

LITERATURE REVIEW

Theoretical Framework

The study draws on two complementary perspectives. Constructivism (Piaget, 1973; Vygotsky, 1978) holds that learners actively construct knowledge through experience, interaction and reflection rather than receiving it passively. Applied to teacher learning, it implies that pre-service teachers build professional knowledge by

teaching, experimenting with tools and reflecting on outcomes; Vygotsky's emphasis on socially mediated learning is equally relevant, because student teachers learned with and through mentors, peers and online communities. The Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006) adds technology as a third knowledge domain alongside content and pedagogy, and directs attention to the intersections among the three rather than to each in isolation. During the pandemic, pre-service ESL teachers had to combine knowledge of English, emerging pedagogical skill and knowledge of platforms such as Google Meet, Zoom and Google Classroom in order to design lessons that were linguistically sound, pedagogically appropriate and technologically feasible. Together the two frameworks support the study's analytic logic: constructivism explains how competence was acquired under crisis conditions, and TPACK explains where it broke down. Figure 1 presents the conceptual framework.

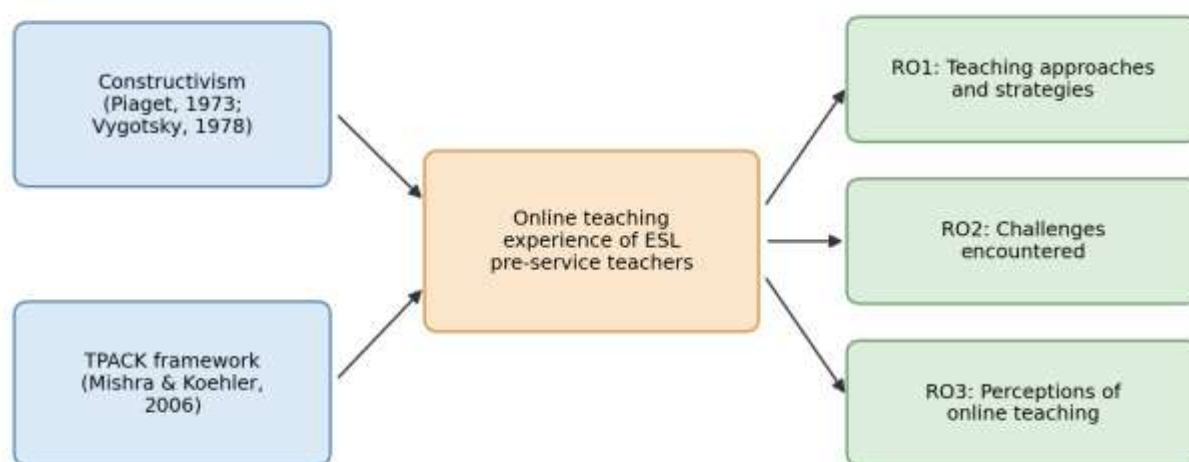


Figure 1. Conceptual Framework of The Study

Emergency Remote Teaching and Online ESL Instruction During COVID-19

The literature distinguishes planned online learning from the emergency remote teaching that occurred during the pandemic: the former results from deliberate instructional design, the latter is a rapid and often improvised response to crisis (Hodges et al., 2020). Early pandemic studies confirmed that most teachers worldwide were delivering the latter with limited preparation, struggling with technology readiness, workload, student engagement and assessment, even as the crisis accelerated digital innovation (Adedoyin & Soykan, 2023; Dhawan, 2020; Pokhrel & Chhetri, 2021). Students reported parallel difficulties with connectivity, home learning environments and self-regulation (Barrot et al., 2021; Selvaraj et al., 2021), and in Malaysia Chung et al. (2020) found only moderate learner readiness for online study, with connectivity the most frequently reported obstacle.

English language teaching was affected in distinctive ways because language learning depends on interaction, negotiation of meaning and extensive practice across the four skills. Teachers moved rapidly to synchronous video platforms, messaging applications and learning management systems, adapting communicative activities for online delivery with varying success (Erarslan, 2021; Moorhouse & Kohnke, 2021). Hartshorn and McMurry (2020) reported heightened stress and perceived declines in learning effectiveness among ESL learners and practitioners in the United States, particularly for speaking. Cheung (2023) documented how a Hong Kong secondary ESL teacher used Zoom to sustain interaction, and Kohnke and Moorhouse (2022) identified breakout rooms, polls and chat as affordances that support synchronous language learning when used purposefully. Regional evidence is consistent: Indonesian EFL teachers taught through a patchwork of applications and struggled with participation and assessment (Atmojo & Nugroho, 2020), while Malaysian teachers integrated tools such as Quizizz, Padlet and Canva and blended synchronous lessons with

asynchronous materials delivered through WhatsApp and Google Classroom (Lukas & Yunus, 2021; Yunus et al., 2021). Blending the two modes emerged as a practical response to unequal connectivity (Moorhouse & Wong, 2022).

Challenges, Adaptations and Perceptions Among Pre-Service Teachers

Pre-service teachers met the general challenges of emergency remote teaching in an intensified form because they lacked classroom experience and established routines. Five difficulties recur in the literature. Technological preparedness was limited, because teacher education programmes had emphasised theory over applied digital pedagogy (Falloon, 2020; König et al., 2020; Nagel, 2021). Connectivity was unreliable for teachers and students alike, particularly in rural areas (Lukas & Yunus, 2021; Mailizar et al., 2020). Classroom management became harder when cameras were switched off and responses were absent (Rasmitadila et al., 2020). Lesson preparation consumed far more time because materials had to be redesigned for digital delivery while platforms were still being learned (Al Abiky, 2021). Finally, the practicum itself was destabilised: Sepúlveda-Escobar and Morrison (2020) found that Chilean pre-service teachers experienced anxiety and a sense of loss at the removal of direct classroom contact, although the placement also offered unexpected opportunities for growth, and similar strain was reported elsewhere (la Velle et al., 2020; Moorhouse, 2020).

Adaptation was nonetheless considerable. Common responses included interactive digital tools to sustain motivation, simplified and flexible planning, recorded lessons for students with poor connectivity, and intensified communication through messaging applications (Atmojo & Nugroho, 2020; Moorhouse & Wong, 2022). Peer collaboration and mentoring raised confidence (Ulla & Perales, 2021), online teaching self-efficacy grew with accumulated experience (Ma et al., 2021), distance conditions stimulated self-regulation and technological engagement (Kurent & Avsec, 2023), and educators with prior online experience adapted more successfully (Moser et al., 2021). Perceptions were correspondingly mixed. Many pre-service teachers valued the opportunity to develop technological and pedagogical competence and to become more flexible practitioners (Kurent & Avsec, 2023; Sepúlveda-Escobar & Morrison, 2020); many others felt unprepared and overburdened, and judged online teaching less effective than face-to-face instruction because of the loss of personal connection and immediate feedback (Hartshorn & McMurry, 2020; Lukas & Yunus, 2021; Tao & Gao, 2022). Despite these reservations, most studies report that pre-service teachers regard online teaching competence as essential and support its inclusion in initial teacher education (Falloon, 2020; Nagel, 2021).

In summary, emergency remote teaching created substantial pedagogical, technological and emotional demands for pre-service teachers; adaptive strategies and support structures moderated those demands; and perceptions were ambivalent but broadly supportive of stronger digital pedagogy training. Relatively few studies, however, have focused specifically on Malaysian secondary ESL pre-service teachers. The present study addresses this gap using quantitative survey data.

METHODOLOGY

Research Design

The study employed a quantitative, cross-sectional survey design. This was appropriate because the aim was to describe the approaches, challenges and perceptions of a relatively large group of pre-service teachers systematically, and to test for differences between demographic subgroups (Creswell & Creswell, 2018). Structured, closed-ended items allowed responses to be quantified and analysed statistically, and online administration enabled efficient data collection from respondents who had already left the university and were geographically dispersed.

Participants and Sampling

The target population comprised pre-service teachers who had completed a teaching practicum in Malaysian secondary schools during the pandemic and had taught ESL online. The accessible population comprised former pre-service teachers from a single Malaysian private university who completed the Bachelor of

Education (TESL) or the Diploma in TESL and conducted online ESL lessons during their practicum between 2020 and 2023. Convenience sampling was used because it allowed former students to be reached efficiently through social media, WhatsApp groups and personal networks within the duration of the study. A total of 112 valid responses were received. Of these, 82 (73.2%) were female and 30 (26.8%) male; 58 (51.8%) were enrolled in the Bachelor of Education (TESL) and 54 (48.2%) in the Diploma in TESL; and most completed their practicum in 2021 (51.8%) or 2022 (39.3%). The implications of this sampling strategy for the interpretation of the findings are set out in detail in the Limitations section.

Instrument

Data were collected using a structured questionnaire developed from the literature on online teaching during the pandemic. The instrument contained four sections. Section A collected demographic information (gender, age, programme of study, year of practicum). Section B addressed online teaching experiences, including platforms used, frequency of online classes, types of teaching material, teaching strategies and self-reported confidence in teaching ESL online. Section C measured challenges encountered using seven items. Section D measured perceptions of online teaching using six items.

The confidence item in Section B used a five-point numeric scale anchored 1 = not at all confident and 5 = extremely confident. All 13 items in Sections C and D used a five-point Likert agreement scale anchored 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree. Higher scores therefore indicate stronger agreement with the statement. No items were reverse-coded. Mean scores were interpreted against the rubric in Table 1, which is applied consistently throughout the Results and Discussion.

Table 1. Interpretation rubric for five-point Likert mean scores

Mean score range	Interpretation	Verbal description
1.00 – 1.80	Very low	Strongly disagree
1.81 – 2.60	Low	Disagree
2.61 – 3.40	Moderate	Neither agree nor disagree
3.41 – 4.20	High	Agree
4.21 – 5.00	Very high	Strongly agree

Note. Class interval = $(5 - 1) / 5 = 0.80$. The rubric is applied to all Likert-type items in Sections C and D.

Validity and Reliability

Content validity was established through review by academic supervisors and subject matter experts, whose feedback was used to refine the phrasing, structure and scope of the items. A pilot study was then conducted with a small group of pre-service teachers who were excluded from the main sample, in order to identify ambiguous items and evaluate the usability of the Google Forms instrument.

Internal consistency was assessed using Cronbach's alpha. Reliability is reported separately for each attitudinal section rather than for the combined 13-item pool, because Sections C and D measure conceptually distinct constructs and a single pooled coefficient would not be interpretable. Table 2 reports the coefficients. The pooled pilot value was $\alpha = .612$, which falls below the conventional .70 threshold and is treated as a limitation of the instrument rather than as grounds for discarding the descriptive findings; the implications are considered in the Limitations section.

Table 2. Internal consistency reliability by section

Section	Construct	k	Pilot α	Main study α
C	Challenges in online teaching	7	—	—
D	Perceptions of online teaching	6	—	—
C + D	Pooled attitudinal items	13	.612	—

Note. k = number of items. Pilot α was computed on the pooled 13-item pool only; section-level pilot coefficients were not retained.

Data Collection and Ethical Considerations

The questionnaire link was distributed through WhatsApp and Instagram over approximately two weeks, and responses were compiled automatically by Google Forms and exported for analysis. Participants were informed of the purpose of the study and the intended use of their data; participation was voluntary; respondents could withdraw at any time; and no personally identifiable information was collected, which ensured anonymity and confidentiality. Informed consent was obtained before respondents completed the questionnaire, and the data were stored securely and used solely for academic purposes.

Data Analysis

Data were analysed using IBM SPSS Statistics. Frequencies and percentages were computed for demographic variables and for categorical items concerning platforms, materials and strategies. Means and standard deviations were computed for the Likert-type items in Sections C and D and interpreted against the rubric in Table 1. Composite scores were formed for each section by averaging the constituent items.

Inferential tests were used to examine subgroup differences. Independent-samples t -tests were used to compare composite challenge and perception scores by programme of study (Bachelor of Education (TESL) versus Diploma in TESL) and by gender (female versus male). Levene's test was used to assess homogeneity of variance, and Welch's correction was applied where that assumption was violated. Cohen's d is reported as the effect size. A one-way analysis of variance (ANOVA) was used to compare composite scores across year of practicum, with eta squared (η^2) reported as the effect size and Tukey's HSD applied for post hoc comparisons where the omnibus test was significant. Because only nine respondents completed their practicum in 2020 and one in 2023, the 2020 and 2021 cohorts were combined and the single 2023 case was excluded from the ANOVA, leaving two adequately sized groups (2020–2021, $n = 67$; 2022, $n = 44$). Alpha was set at .05 throughout.

RESULTS

Profile of Respondents

Table 3 summarises the demographic profile of the 112 respondents. Females constituted the majority (73.2%), reflecting the typical gender composition of TESL programmes in Malaysia. Most respondents were aged 23 to 28 years (81.3% combined), and the sample was almost evenly divided between the Bachelor of Education (TESL) (51.8%) and the Diploma in TESL (48.2%). More than half (51.8%) completed their practicum in 2021, the year in which movement restrictions were most extensive, followed by 2022 (39.3%), 2020 (8.0%) and 2023 (0.9%).

Table 3. Demographic profile of respondents (N = 112)

Variable	Category	f	%
Gender	Female	82	73.2
	Male	30	26.8
	Total	112	100.0
Age	20–22 years	14	12.5
	23–25 years	48	42.9
	26–28 years	43	38.4
	29 years and above	6	5.4
	Undisclosed	1	0.9
	Total	112	100.1
Programme of study	Bachelor of Education (TESL)	58	51.8

	Diploma in TESL	54	48.2
	Total	112	100.0
Year of practicum	2020	9	8.0
	2021	58	51.8
	2022	44	39.3
	2023	1	0.9
	Total	112	100.0

Note. f = frequency. Percentages for age do not sum to exactly 100.0 because of rounding.

Online Teaching Approaches (Research Objective 1)

Respondents reported using a variety of platforms, frequently in combination. The most common configuration was the combined use of Google Meet, Zoom and Google Classroom, reported by 33 respondents (29.5%), followed by exclusive use of Microsoft Teams (16.1%), Google Classroom (11.6%) and Zoom (9.8%). Smaller numbers reported combinations that included pre-recorded video lessons, indicating that asynchronous delivery was used to complement live classes. Table 4 presents the platform categories, and Figure 2 displays the same distribution graphically.

Table 4. Main platforms used for online teaching (N = 112)

Platform or combination	f	%
Google Meet, Zoom and Google Classroom	33	29.5
Microsoft Teams only	18	16.1
Google Classroom only	13	11.6
Zoom only	11	9.8
Google Meet only	8	7.1
Google Meet and Google Classroom	7	6.3
Zoom and Google Classroom	6	5.4
Google Meet and Zoom	5	4.5
Other combinations (including pre-recorded video lessons)	11	9.8
Total	112	100.1

Note. f = frequency. Percentages sum to 100.1 rather than 100.0 because of rounding.

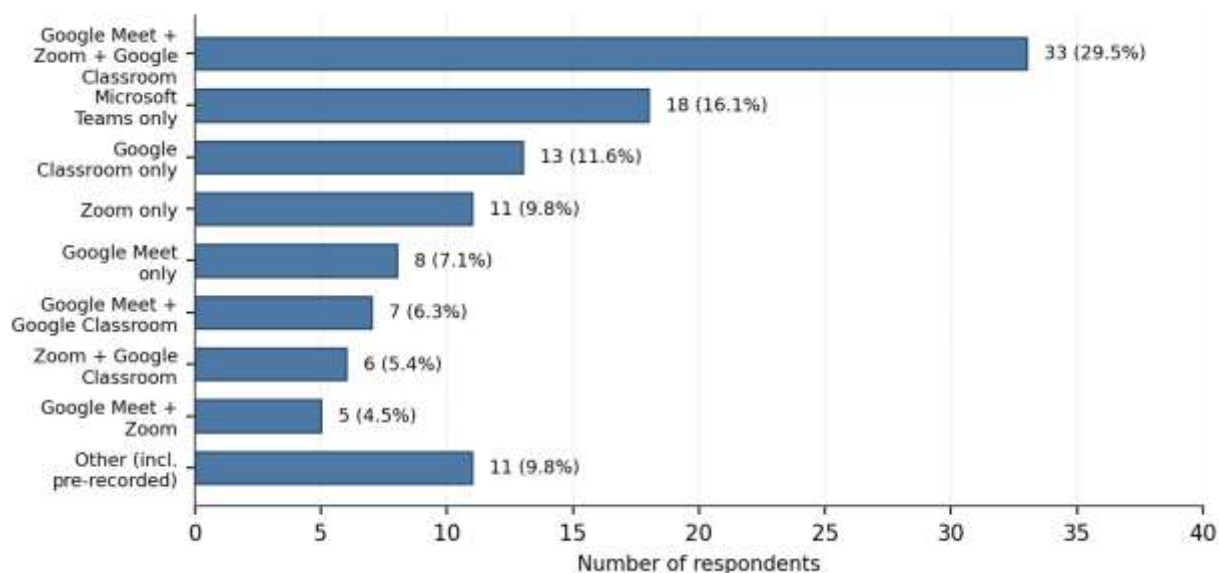


Figure 2. Distribution of platforms used for online teaching (N = 112)

With respect to teaching intensity, the large majority of respondents (81.3%) conducted online classes three to four times per week, 10.7% held classes once or twice per week, 7.1% taught online every day, and one respondent (0.9%) taught less than once a week. Online teaching was therefore a sustained, near-daily professional activity during the practicum rather than an occasional supplement.

Regarding teaching materials, videos were the single most frequently used resource: 23.2% of respondents used videos only, and a further 18.8% combined presentation slides, videos and online quizzes. Online quizzes alone were used by 13.4%, and various combinations of slides, videos, quizzes and worksheets accounted for the remainder. In terms of teaching strategies, the most common combination was group discussion with project-based activities (25.9%), followed by project-based activities with reading and writing activities (22.3%) and reading and writing activities with individual tasks (12.5%). Speaking practice appeared only rarely as a stand-alone strategy (0.9%), suggesting that oral skills were the most difficult to address online.

Self-reported confidence in online teaching was low. On the five-point confidence scale, 48.2% of respondents selected point 2 and 32.1% selected point 3, while only 9.0% selected point 4 or 5 and 10.7% selected point 1. Figure 3 presents the distribution.

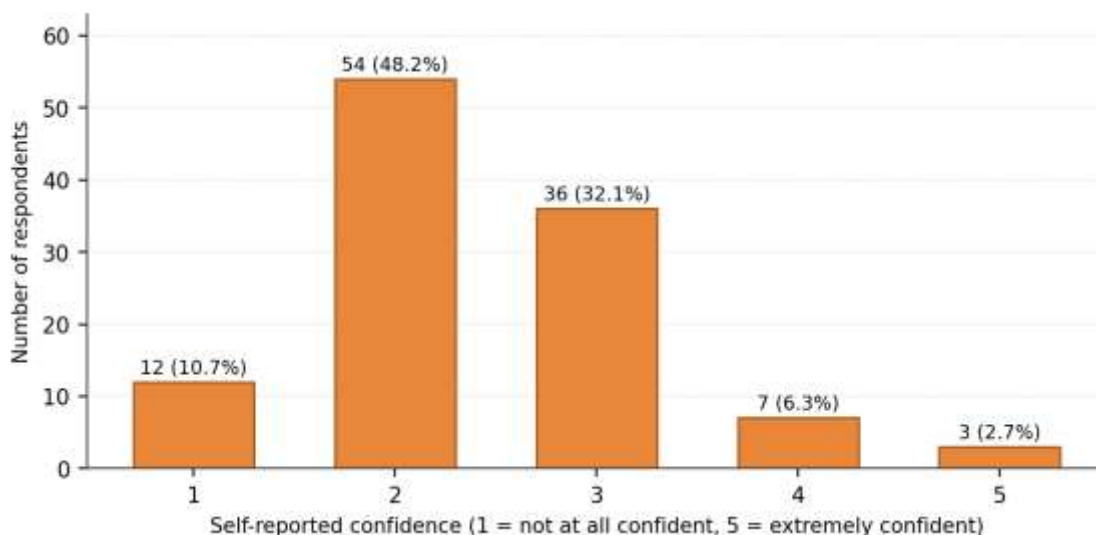


Figure 3. Self-reported confidence in online teaching (N = 112)

Challenges Encountered (Research Objective 2)

Table 5 reports the descriptive statistics for the seven challenge items. All items were answered by the full sample and used the full range of the scale. Every mean fell between 2.12 and 2.31, with standard deviations between 0.838 and 0.941. Interpreted against the rubric in Table 1, all seven means fall in the low band (1.81–2.60), and all lie below the scale midpoint of 3.00. On average, therefore, respondents did not agree with the challenge statements as worded; the modal response tendency was toward disagreement.

Within this narrow band, the relative ordering of items was as follows. Difficulty preparing online teaching materials recorded the highest mean ($M = 2.31$, $SD = 0.849$), followed by students' unstable internet connections ($M = 2.29$, $SD = 0.853$), difficulty managing the class when cameras were off or students did not respond ($M = 2.28$, $SD = 0.862$), lack of training on digital teaching tools ($M = 2.28$, $SD = 0.841$), excessive lesson preparation time ($M = 2.27$, $SD = 0.838$), unresponsive students ($M = 2.17$, $SD = 0.848$) and the respondent's own internet connection problems ($M = 2.12$, $SD = 0.941$). The total spread across all seven items is 0.19 scale points, which is smaller than the standard deviation of any individual item. This ordering is therefore reported for completeness but should not be treated as evidence that any one challenge was experienced more acutely than another. Figure 4 visualises the means with error bars.

Table 5. Descriptive statistics for challenges in online teaching (N = 112)

Item	M	SD	Interpretation
I faced internet connection problems during online teaching	2.12	0.941	Low
Students had an unstable internet connection during class	2.29	0.853	Low
Students were not active or responsive during online classes	2.17	0.848	Low
I faced difficulty preparing online teaching materials	2.31	0.849	Low
I spent too much time preparing lessons for online teaching	2.27	0.838	Low
I had difficulty managing the class (cameras off, no response)	2.28	0.862	Low
I lacked training on digital teaching tools	2.28	0.841	Low
Composite challenge score	2.25		Low

Note. Scale: 1 = strongly disagree to 5 = strongly agree. Interpretation follows Table 1. The composite mean is the average of the seven item means; its standard deviation requires the raw dataset.

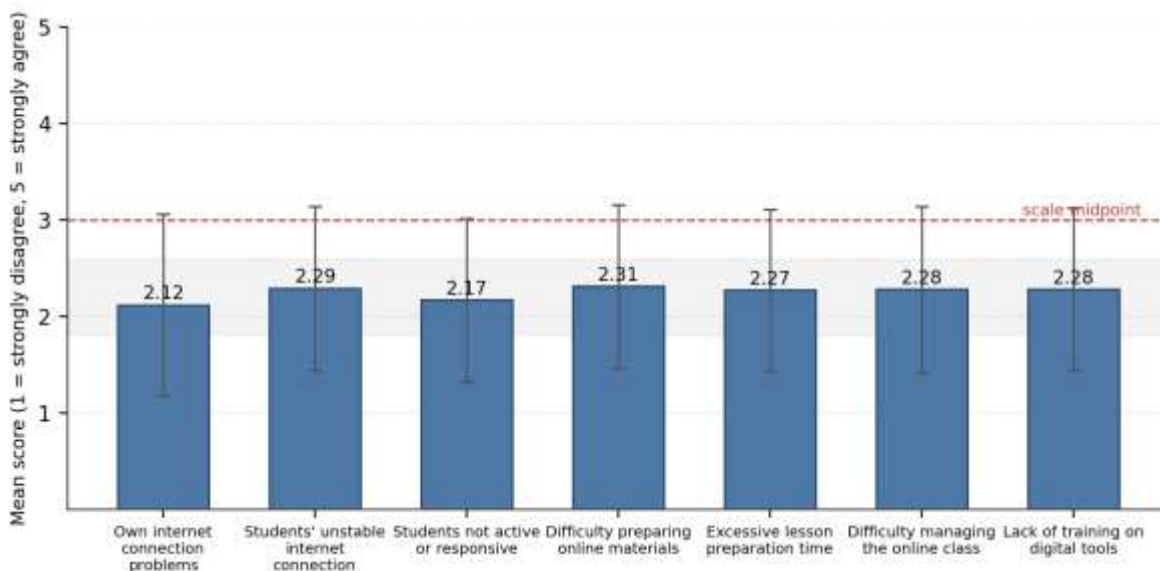


Figure 4. Mean scores of challenge items with standard deviations (N = 112)

Note. The shaded band marks the low interpretation range (1.81–2.60); the dashed line marks the scale midpoint.

Perceptions of Online Teaching (Research Objective 3)

Table 6 reports the descriptive statistics for the six perception items. As with the challenge items, every mean fell within the low band of the rubric and below the scale midpoint, ranging from 2.25 to 2.50. The highest mean in the instrument was recorded for increased adaptability and creativity (M = 2.50, SD = 0.859), followed by confidence in teaching online in the future (M = 2.41, SD = 0.945),

The view that online teaching should be included in teacher training programmes (M = 2.40, SD = 0.925), belief that online teaching is effective for ESL learning (M = 2.38, SD = 0.998), preference for face-to-face teaching (M = 2.38, SD = 0.921) and improvement of digital skills (M = 2.25, SD = 0.844).

Two features of this pattern deserve emphasis. First, respondents did not endorse the positive perception statements strongly; the cohort was lukewarm rather than enthusiastic about the professional value of the experience. Second, the item on preference for face-to-face teaching sits at the same level as the item on the effectiveness of online teaching, so the data do not support a strong claim in either direction about modal preference. The perception profile is best characterised as low and undifferentiated rather than as ‘moderate and mixed’. Figure 5 presents the means.

Table 6. Descriptive statistics for perceptions of online teaching (N = 112)

Item	M	SD	Interpretation
Online teaching helped improve my digital skills	2.25	0.844	Low
Online teaching increased my adaptability and creativity	2.50	0.859	Low
I believe online teaching is effective for ESL learning	2.38	0.998	Low
I feel confident teaching online in the future	2.41	0.945	Low
I prefer face-to-face teaching compared to online teaching	2.38	0.921	Low
Online teaching should be included in teacher training programmes	2.40	0.925	Low
Composite perception score	2.39		Low

Note. Scale: 1 = strongly disagree to 5 = strongly agree. Interpretation follows Table 1.

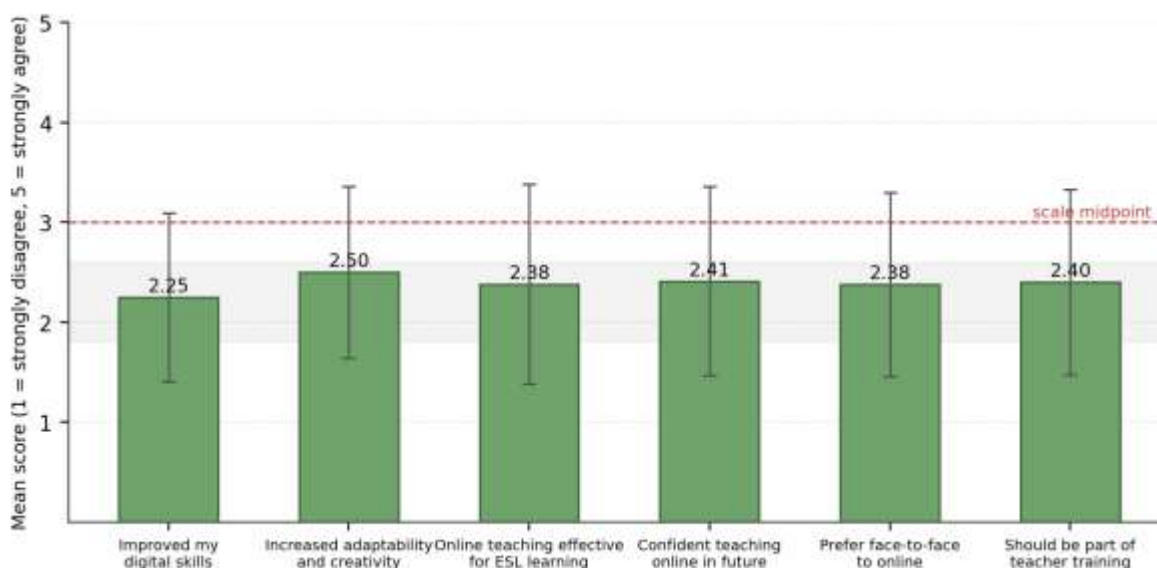


Figure 5. Mean scores of perception items with standard deviations (N = 112)

Differences By Programme, Gender and Year of Practicum (Research Objective 4)

Tables 7 and 8 report the subgroup comparisons. Independent-samples t-tests compared composite challenge and perception scores by programme of study and by gender, and a one-way ANOVA compared composite scores across practicum cohort.

Table 7. Independent-samples t-tests for composite scores by programme and gender

Composite score	Grouping variable	Group	n	M (SD)	t	df	p	d
Challenges	Programme	B.Ed. (TESL)	58	—	—	—	—	—

		Diploma in TESL	54	—				
	Gender	Female	82	—	—	—	—	—
		Male	30	—				
Perceptions	Programme	B.Ed. (TESL)	58	—	—	—	—	—
		Diploma in TESL	54	—				
	Gender	Female	82	—	—	—	—	—
		Male	30	—				

Note. d = Cohen's d. Welch-adjusted t and df are reported where Levene's test indicated unequal variances.

Table 8. One-way ANOVA for composite scores by year of practicum

Composite score	Source	SS	df	MS	F	p	η^2
Challenges	Between groups		1				
	Within groups		109				
	Total		110				
Perceptions	Between groups		1				
	Within groups		109				
	Total		110				

Note. Groups are the 2020–2021 cohort (n = 67) and the 2022 cohort (n = 44); the single 2023 respondent was excluded, so N = 111 for these analyses. With two groups the ANOVA is equivalent to an independent-samples t-test, so no post hoc test is required.

Overall, the results indicate that pre-service teachers deployed a blended repertoire of synchronous platforms, multimedia materials and interactive strategies (Objective 1); that the challenge items were endorsed at a uniformly low level with almost no differentiation between them (Objective 2); and that perceptions of online teaching were similarly low and undifferentiated, with self-reported teaching confidence clustered at the bottom of the scale (Objective 3).

DISCUSSION

Online Teaching Approaches

The finding that most respondents taught three to four times per week through Google Meet, Zoom, Google Classroom and Microsoft Teams shows that synchronous videoconferencing became the backbone of practicum teaching during the MCO period, in line with the international pattern reported for the English language teaching community (Erarslan, 2021; Moorhouse & Kohnke, 2021). The prevalence of the three-platform combination is particularly telling: pre-service teachers did not transplant classroom lessons into a single virtual room but orchestrated an ecology of tools in which live meetings carried interaction, the learning management system carried materials and assignments, and messaging channels carried communication. This orchestration is the kind of integrated technological, pedagogical and content decision-making that TPACK describes (Mishra & Koehler, 2006), and it suggests that even novice teachers were assembling TPACK in practice under crisis conditions — constructing it in action rather than applying it after instruction, as a constructivist account of professional learning would predict (Piaget, 1973; Vygotsky, 1978).

The dominance of video as a teaching material, whether alone (23.2%) or combined with slides and quizzes (18.8%), reflects a pragmatic response to the constraints of the medium. Videos allowed content to reach students with unstable connections, could be replayed for comprehension, and reduced the demand for continuous live interaction that low bandwidth made unreliable. This mirrors the blended synchronous and asynchronous approach that Moorhouse and Wong (2022) identified as an effective adaptation, and it is consistent with Malaysian evidence that teachers distributed recorded lessons through WhatsApp and Google Classroom to reach students with limited access (Lukas & Yunus, 2021). The frequent use of online quizzes further suggests attention to engagement and formative assessment, using gamified checks in place of the immediate feedback loops of the physical classroom (Atmojo & Nugroho, 2020).

The pattern of teaching strategies is equally informative. Group discussion combined with project-based activities (25.9%) and project work combined with reading and writing tasks (22.3%) dominated, while stand-alone speaking practice was almost absent (0.9%). The preference for discussion and project work indicates an activity-centred orientation in which lessons were organised around student production rather than transmission. The near absence of dedicated speaking practice, by contrast, confirms that oral skills were the casualty of the online transition. Speaking requires synchronous, low-latency, multi-party interaction — precisely the conditions that unstable connections and camera-off classrooms undermine — and the same difficulty has been reported for ESL practitioners elsewhere (Cheung, 2023; Hartshorn & McMurry, 2020). In TPACK terms this is a deficit of technological content knowledge specifically: a teacher who can operate Zoom competently but cannot design an online speaking task has technological knowledge without knowing how the technology transforms the representation of the subject matter. The imbalance implies that cohorts of Malaysian secondary students taught during the pandemic may have had systematically fewer opportunities for oral practice, a gap that schools and future teachers should address deliberately.

Finally, the combination of sustained, near-daily teaching with low self-reported confidence illustrates the distinction between performance and self-efficacy. Respondents were doing the work of online teaching, and doing it with recognisable pedagogical intent, yet only 9.0% placed themselves in the top two confidence categories. Ma et al. (2021) showed that online teaching self-efficacy grows with accumulated experience and institutional support; the low confidence observed here most plausibly reflects the compressed and unsupported nature of the practicum rather than an absence of capability, which strengthens the case for structured preparation before, rather than during, the placement.

Challenges Encountered

The interpretation of the challenge data requires care. All seven means fall in the low band of the rubric and below the scale midpoint, which means that respondents did not on average agree that they experienced these difficulties as stated. Two readings are possible and the present data cannot decide between them. The first is substantive: this cohort may genuinely have found the transition less onerous than the international literature suggests, perhaps because they were young, digitally fluent and teaching in a relatively well-connected part of Malaysia. The second is methodological: the compression of all 13 attitudinal items into a 0.38-point band, combined with a pooled reliability coefficient of .612, is consistent with a response-set effect or with items that failed to discriminate. The very small spread across the challenge items — 0.19 scale points, less than one standard deviation of any single item — means the instrument was not distinguishing between quite different phenomena such as bandwidth failure and inadequate training.

This is a finding in its own right, and it disciplines the claims that can be drawn from the data. It is defensible to report that the challenge items formed a uniform low-level profile; it is not defensible to rank the challenges against one another, or to assert that material preparation was the most severe difficulty, because the ordering falls well within measurement noise. The present study therefore makes no such claim.

Read alongside the descriptive results for Objective 1, the pattern is nonetheless coherent with the wider literature in one important respect. Whatever respondents reported on the agreement scale, their behaviour was that of teachers working around an infrastructure constraint: the heavy reliance on recorded video and asynchronous distribution through Google Classroom and WhatsApp is the documented Malaysian adaptation

to unreliable connectivity (Lukas & Yunus, 2021), which Chung et al. (2020) identified from the learner side and Mailizar et al. (2020) and Barrot et al. (2021) found shaping downstream pedagogical decisions across developing contexts. Similarly, the disappearance of speaking practice and the low confidence scores point to difficulties with engagement and management that the agreement items did not capture well — difficulties widely reported by teachers during emergency remote teaching (Rasmitadila et al., 2020) and especially acute for novices without established classroom routines (König et al., 2020). Sustaining participation at a distance also depends on learners' capacity for self-regulation, which many secondary students had never been required to exercise and which online environments rarely scaffold explicitly (Wong et al., 2019); learner motivation in Malaysian online settings has likewise been shown to depend on relatedness and support conditions that home confinement eroded (Kamalruzaman et al., 2023). The divergence between what respondents reported on the Likert items and what their reported practice implies is the clearest signal in these data that the challenge instrument needs revision before it is used again.

Perceptions of Online Teaching

The perception results follow the same pattern. All six means fall in the low band, which indicates that respondents did not strongly endorse the positive statements about professional growth, nor did they strongly endorse a preference for face-to-face teaching. The cohort is best described as lukewarm and undifferentiated rather than ambivalent in the sense of holding two strong and opposing views. Where the international literature finds teachers actively weighing the flexibility and skill development of online teaching against doubts about its efficacy (Moser et al., 2021; Tao & Gao, 2022), these respondents registered low agreement across the board.

Two observations follow. First, whatever judgement respondents formed was formed under emergency conditions — unstable infrastructure, disengaged students, minimal training — and is therefore a judgement about emergency remote teaching rather than about well-designed online learning (Hodges et al., 2020). Studies conducted where infrastructure and instructional design were stronger show that synchronous platforms can support rich language interaction when their affordances are exploited deliberately (Cheung, 2023; Kohnke & Moorhouse, 2022). The perception data should therefore be read as evidence about unprepared implementation, not about the mode itself, and this distinction matters when findings are translated into curriculum policy. Second, the item on including online teaching in teacher training programmes ($M = 2.40$) attracted no more endorsement than any other item, so these data do not support the claim, common in the wider literature, that pandemic cohorts actively endorse institutionalising online pedagogy training. The case for such training made in this paper rests instead on the observed evidence: near-absent speaking instruction, confidence concentrated at the bottom of the scale, and a documented reliance on workarounds rather than designed solutions.

From a TPACK standpoint the three sets of findings map an uneven development of the knowledge domains. Content knowledge was the most stable, since command of English was unaffected by delivery mode. Pedagogical knowledge was partially transferable: discussion and project work migrated online, but management and feedback routines did not. Technological knowledge was weakest, and the greatest strain appeared at the intersections — technological pedagogical knowledge (engaging and managing a class through a screen) and technological content knowledge (designing digital tasks for language skills, most visibly speaking). This has direct diagnostic value for teacher education, because it indicates that curricula should target the intersections rather than teaching technology as an isolated skill (Falloon, 2020; Mishra & Koehler, 2006; Nagel, 2021).

Implications for Teacher Education

The findings speak most directly to initial teacher education, and three concrete reforms follow from them. They are set out here in the order in which a programme would implement them.

Curriculum

Digital pedagogy should be a compulsory, assessed strand of the TESL curriculum rather than an elective or an incidental by-product of the practicum. Two design principles follow from the TPACK mapping above. First, the strand should be organised around the intersections of the framework rather than around tools: the learning outcome is not ‘operates Google Classroom’ but ‘designs, delivers and assesses an online ESL lesson’. Second, it should be embedded within existing methodology courses rather than taught as a stand-alone ICT module, because a separate module reproduces exactly the isolation of technological knowledge that this study found to be the problem (Falloon, 2020; Nagel, 2021). Speaking instruction deserves specific curricular attention. The near-total absence of stand-alone speaking practice in this sample is the study's sharpest single finding, and it points to a content-specific gap: student teachers need explicit instruction in designing online oral tasks, including asynchronous voice recording, structured breakout-room protocols, paired speaking with recorded submission, and low-bandwidth alternatives to live oral work (Cheung, 2023; Kohnke & Moorhouse, 2022). Assessment literacy for online contexts — how to judge fluency and interaction when video is degraded or absent — belongs in the same strand.

Micro-Teaching

Micro-teaching is the most direct lever available to programmes, because it is already a standard component and requires reconfiguration rather than new resources. Programmes should require that a defined proportion of micro-teaching cycles be conducted fully online, in the same platforms students will use on placement, and under conditions that reproduce the difficulties documented here rather than idealised ones. Practically, this means simulated sessions in which cameras are off and responses are delayed, so that student teachers rehearse the management and engagement moves that this cohort had to improvise; deliberate practice with low-bandwidth contingencies, including switching a live lesson to an asynchronous alternative mid-session; and at least one cycle devoted specifically to an online speaking lesson. Recording and peer review of these sessions supports the reflective cycle through which professional knowledge is constructed (Piaget, 1973; Vygotsky, 1978), converting the improvised learning that this cohort undertook under pressure into structured, low-stakes rehearsal. The gap between the sustained teaching performance observed here and the low confidence reported alongside it is precisely the gap that rehearsal before placement is designed to close (Ma et al., 2021).

Mentoring

The practicum documented in this study was, in effect, unmentored in the digital domain: supervisors and cooperating teachers were themselves learning the platforms. Three adjustments would address this. First, mentor teachers and university supervisors need preparation in observing and giving feedback on online lessons, since the observable indicators of a good lesson differ when the class is a grid of muted tiles; observation instruments designed for physical classrooms should be revised accordingly. Second, structured peer support should be built into the placement rather than left to informal WhatsApp groups; communities of practice sustained novice teachers during the crisis and raised confidence (Ulla & Perales, 2021), and small supervised peer groups meeting at fixed points during the practicum institutionalise that support. Third, programmes should pair student teachers with mentors who have documented online teaching experience where possible, since prior online experience predicts successful adaptation among language educators (Moser et al., 2021).

Two further implications lie outside teacher education but condition its success. For schools and education authorities, investment in connectivity and device access remains foundational, because no amount of pedagogical preparation compensates for students who cannot stay online; and these investments serve SDG 4 directly, since equitable access to quality education during disruption depends on both infrastructure and teacher preparedness. For pre-service teachers themselves, the findings normalise the difficulty of the transition while showing that blended delivery, interactive tools and peer collaboration are learnable and effective responses.

LIMITATIONS

The limitations of this study are substantial and constrain the claims that can be made from it. They are stated here at length because the sampling and measurement issues in particular affect how the findings should be read.

Sampling is the most serious constraint. Respondents were recruited by convenience from the alumni of a single private university, through social media, WhatsApp groups and the researchers' personal networks. Three distinct problems follow. First, because the sampling frame was one institution, the findings describe the graduates of one programme and cannot be generalised to Malaysian ESL pre-service teachers as a population; programmes differ in their ICT provision, and it is precisely such programme-level differences that would explain variation in digital preparedness. Second, recruitment through the researchers' own networks introduces selection bias in an unknown direction: former students who remained in contact, who retained a positive relationship with the institution, or who had a particular interest in the topic were more likely to respond, and no response rate can be calculated because the size of the reached population is unknown. Third, the subgroups are unbalanced. With 30 male respondents against 82 female, nine respondents from the 2020 cohort and one from 2023, the comparisons reported in Tables 7 and 8 are underpowered; a null result in those analyses should be read as inconclusive rather than as evidence that programme, gender or cohort makes no difference. For all these reasons the study should be treated as exploratory and descriptive of one institutional cohort, not as an estimate of any population parameter.

Measurement is the second constraint. The instrument was newly developed, and internal consistency was below the conventional .70 threshold in the pilot. All 13 attitudinal items produced means within a 0.38-point band with similar standard deviations, which indicates weak discrimination between items and is consistent with a response-set effect. As noted in the Discussion, this makes the relative ranking of individual challenges and perceptions unreliable, and the study accordingly reports only the overall level of the profiles rather than any ordering within them.

Five revisions would strengthen the instrument before it is used again. Items with corrected item-total correlations below .30 should be rewritten or dropped. The double-barrelled Section C item on classroom management, which combines cameras being switched off with absence of response, should be split into two single-idea items, since double-barrelled items depress inter-item correlation. The two facets currently conflated within Section C — infrastructure, covering the respondent's own and students' connectivity, and workload and preparedness, covering material preparation, preparation time and training — should be separated and reported as distinct subscales. The Section D item on preference for face-to-face teaching is conceptually reversed relative to the other five perception items and should be reverse-coded or reported separately, since leaving it unreversed suppresses alpha. Finally, each subscale should be lengthened by two or three parallel items, because alpha is a direct function of scale length and scales of six or seven items are short.

Three further limitations apply. The data are entirely self-reported and were collected retrospectively, up to several years after the practicum in some cases, so they are subject to recall decay and social desirability bias; no observational or documentary evidence corroborates the reported practices. The design is cross-sectional, so it captures a single retrospective snapshot and cannot show how approaches, confidence or perceptions changed over the course of the pandemic. And the closed-ended format cannot explain the divergence noted above between low agreement on the challenge items and behavioural evidence of workaround strategies; qualitative data would be required to interpret it.

CONCLUSION

This study examined the online teaching experiences of 112 Malaysian secondary ESL pre-service teachers during the COVID-19 pandemic, focusing on their approaches, challenges and perceptions. Respondents sustained frequent online instruction through an ecology of synchronous platforms and asynchronous materials, favouring videos, slides, quizzes and interactive strategies such as group discussion and project-

based work, while opportunities for dedicated speaking practice were almost entirely absent. Self-reported teaching confidence was concentrated at the lower end of the scale. The attitudinal items produced uniformly low means across both the challenge and perception scales, with very little differentiation between individual items — a pattern that the study interprets cautiously, given the instrument's limited reliability, as evidence about the overall level of the profiles rather than about the relative severity of particular difficulties.

The study contributes empirical evidence on an under-researched group and interprets its experience through constructivist and TPACK perspectives, showing that technological knowledge and its intersections with pedagogy and content were the domains under greatest strain. Its practical contribution is a specific agenda for teacher education: digital pedagogy embedded within methodology courses rather than taught as a separate ICT module, online micro-teaching conducted under realistic constraints before the practicum, explicit preparation for teaching and assessing oral skills online, and mentoring arrangements in which supervisors are themselves prepared to observe and give feedback on online lessons.

Future research should address the limitations identified above. Larger, multi-institution samples using probability or stratified designs are needed before population-level claims can be made; the instrument requires psychometric revision and revalidation; qualitative interviews and lesson observation would help explain the divergence between reported attitudes and reported practice; and longitudinal or intervention designs are needed to test whether the curricular, micro-teaching and mentoring reforms proposed here actually improve preparedness. Extending the enquiry to hybrid teaching in the post-pandemic period would establish whether the competencies developed under emergency conditions have proved durable.

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