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Beyond Virtual Presence: Mapping E-Tutor Practice in a Fully Online Open University

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Abstract

This preliminary study examines how e-tutors at Open University Malaysia apply the four online-facilitation framework, consisting of the PMST roles—pedagogical, social, managerial, and technical—after the university's shift to fully online teaching. Guided by the newly proposed PMST Sub-Role Alignment Model (PSAM), a survey of 211 e-tutors captured the self-reported frequency with which 26 sub-roles are performed. Overall, the awareness of the PMST framework is high, but in practice the application is uneven: pedagogical and social roles dominate, while managerial and technical roles appear to receive less emphasis. Within each dimension, e-tutors appear to excel at concept explanation and assignment guidance, maintaining a positive online forum climate, and keeping to e-Tutorial schedules. By contrast, fostering critical thinking, creating informal discussion spaces, proactive outreach to inactive learners, and first-line technical trouble-shooting are less consistently applied. These gaps highlight priority areas for future e-tutor professional development and provide an initial validation of PSAM as a tool for diagnosing role alignment. Strengthening the less-practiced sub-roles should enhance the consistency and quality of online facilitation at the university and similar open-distance institutions.

Keywords: Online Facilitation Roles, Open and Distance Learning, PMST Framework, E-Tutors, Online Teaching

Introduction

The rise of new technologies has enabled both traditional and open and distance learning providers to offer their programs in a fully online format, extending beyond their physical campuses. The COVID-19 pandemic has not merely induced a transition to online learning; it has also accelerated this shift, prompting institutions worldwide to embrace e-learning (WEF, 2020). Online learning has become increasingly popular among prospective learners, with global enrollment exceeding pre-pandemic levels and anticipated to continue growing (Wood, 2022). Driven by this rising demand, many institutions of higher learning have adopted blended and distance learning approaches.

For the last twenty-five years, Open University Malaysia (OUM) has provided diploma, undergraduate, and postgraduate programs via Open and Distance Learning (ODL). Initially, it employed a blended approach, combining face-to-face teaching at learning centers with online learning through its platform, myInspire. This model allowed learners direct engagement with tutors at local learning centers, supported by virtual discussions and resources. However, the COVID-19 lockdowns necessitated an abrupt transition to fully online learning, compelling face-to-face tutors to assume new responsibilities as online instructors, known as e-tutors at OUM.

The transition to fully online learning introduced new responsibilities for OUM's e-tutors, including effectively facilitating online instruction to support students and foster engaging, rewarding learning experiences. Recent studies indicate that students perceive online learning positively, citing reduced anxiety (Kaisar & Chowdhury, 2020), and enhanced virtual learning experiences facilitated by positive relationships with instructors and peers (Luo et al., 2019). Furthermore, e-learning enables learners to complete complex tasks by breaking down content into manageable units (Peacock & Cowan, 2019).

Nonetheless, new e-tutors accustomed to face-to-face facilitation often face challenges when teaching online. This is primarily due to the lack of verbal and non-verbal cues traditionally used to initiate discourse and clarify tasks in physical classrooms (Ho et al., 2023). As a result, e-tutors must primarily rely on written communication within the online platform to interact effectively with learners. Fang et al. (2024) noted that lack of face-to-face interaction resulted in communication barriers, which made it difficult to foster engagement and maintain learner motivation and active participation. Kellen and Kumar (2021) highlighted how the rapid shift to digital environments strained educators, who needed to quickly develop skills in managing technological barriers and meeting the demands of online teaching.

E-tutors often experience role ambiguity and challenges in workload management due to unclear expectations in online facilitation. The sudden shift to fully online teaching blurred the boundaries of e-tutor roles, causing uncertainty about intervention levels in discussions or replicating traditional teaching identities online (Shange, 2021). This ambiguity, coupled with student expectations for constant availability, has led to workload overload and potential burnout (Kellen & Kumar, 2021). Grammens et al. (2022) further elaborated on the expanded roles e-tutors must now perform, emphasizing competencies in instructional, managerial, technical, communicational, and social dimensions necessary for effective synchronous online instruction.

To address the complexities of these new responsibilities, institutions have employed structured frameworks such as Berge's (1995) online facilitation model, which categorizes instructor roles into pedagogical, social, managerial, and technical dimensions (Berge, 2008). Berge's framework remains relevant today by highlighting e-tutors' multifaceted facilitator roles rather than traditional lecturer roles (Fang et al., 2024). Contemporary adaptations of Berge's model, such as Grammens et al.'s (2022) inclusion of a dedicated communicational role, further underline the evolving complexity of online facilitation post-pandemic.

Within Berge's pedagogical framework, the university expects e-tutors to facilitate learning and foster critical thinking (Richardson et al., 2016; Schindler & Burkholder, 2014). Socially, e-

tutors assist learners in developing interactive skills to overcome online social inhibitions (Croft et al., 2015). In their managerial role, e-tutors guide online discussions by maintaining regular online presence, promptly addressing queries, and timely posting of essential course information. Technically, e-tutors are tasked with offering basic technical support or escalating complex issues appropriately. Additionally, successful online facilitators must humanize online courses and innovate to effectively engage learners (Pacansky-Brock et al., 2020).

Despite institutional guidelines, preliminary feedback from OUM learners indicates discrepancies between expected and actual e-tutor practices. Learners report that e-tutors fail to explain core concepts effectively, neglect to encourage deeper critical thinking, and provide insufficient guidance for completing assignments.

Some university learners at OUM feel the online environment is too impersonal. They state that e-tutors seldom encourage student introductions and make limited efforts to maintain open communication or use an appropriate tone in messages. Learners have also expressed frustration over the e-tutors' infrequent online presence, delayed responses to queries, lack of proactive engagement, and inconsistent scheduling of online tutorials, all of which undermine professionalism and active discussion. Learners have also expressed dissatisfaction with the technical support provided. They report that guidance on using the learning platform is sometimes minimal and that accessing library resources for assignment completion is confusing.

Conversely, e-tutors often perceive themselves as adequately fulfilling their roles, highlighting a perception gap. Understanding this discrepancy will help the university better align support structures to effectively meet e-tutor and learner expectations, enhancing online teaching quality and learner satisfaction. By explicitly defining these sub-roles, OUM aims to reduce role ambiguity and better support e-tutors in delivering high-quality online education, thereby improving the learner experience and satisfaction. However, there remains a lack of clear, practical guidance on how each of the four PMST dimensions should be enacted in online teaching. To address this gap, the present study proposes the PMST Sub-Role Alignment Model (PSAM), which offers concrete role clarifications for e-tutors; the model is outlined in the next section.

A Proposed Model for Online Facilitation: The PMST Sub-Role Alignment Model (PSAM)
Drawing upon Berge's (1995) facilitation framework, the PMST Sub-Role Alignment Model (PSAM) develops this framework by defining 26 distinct sub-roles across the four core areas: Pedagogical, Social, Managerial, and Technical. The Pedagogical role encompasses 5 sub-roles, the Social role 9 sub-roles, the Managerial role 8 sub-roles, and the Technical role 4 sub-roles. Each sub-role serves as a "functional lever" to address common learner concerns, such as insufficient tutor presence, delayed feedback, and inadequate social engagement.
The proposed model is structured as follows (refer to Fig 1):

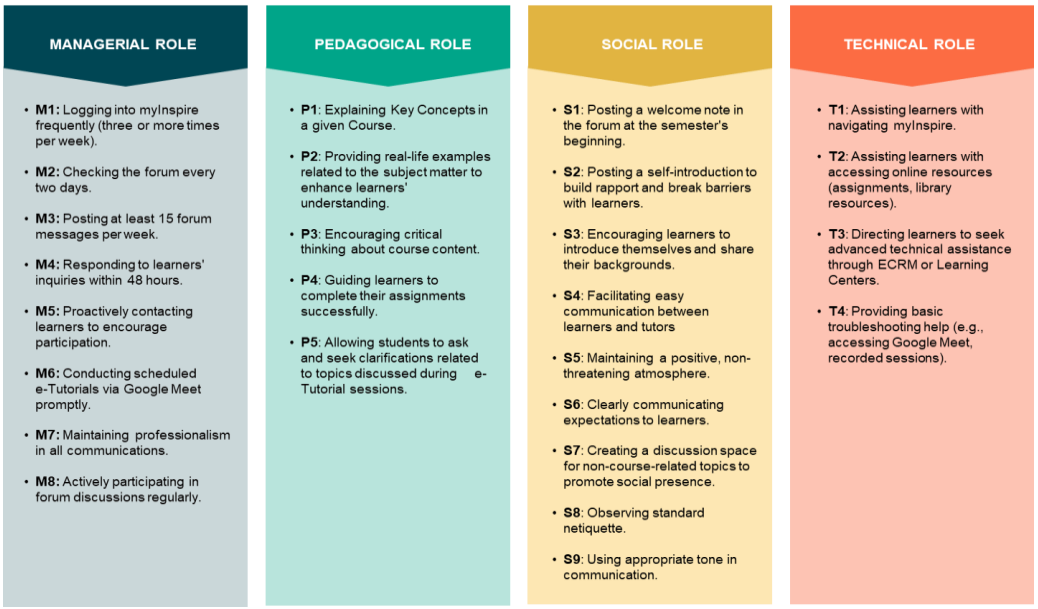

Fig 1. The PMST Sub-role Model (PSAM)

Pedagogical Alignment (P1–P5):
These sub-roles offer improved academic support to learners and enhance cognitive clarity. They include strategies such as explaining key concepts (P1), contextualizing the subject matter with real-life examples(P2), encouraging critical thinking about course content (P3), guiding learners to assignment completion (P4), and allowing learners to ask and seek clarification during online classes (P5). Together, they seek to address learner difficulties in understanding course content and managing assessment expectations.

Social Alignment (S1–S9):
These sub-roles are about building a warm and supportive online community through various interpersonal actions. It includes posting a welcome note in the online forum at the beginning of the semester (S1) and posting a self-introduction (S2) to build rapport with learners. Encouraging learners to introduce themselves and share their backgrounds (S3) and facilitating easy communication between learners and tutors (S4), while maintaining a positive and non-threatening atmosphere (S5) and clearly communicating expectations (S6) to learners keeps interactions respectful. Additionally, creating discussion spaces for off-topic discussions (S7), observing standard netiquette (S8), and using an appropriate tone in all communications (S9) contribute to a better-connected online learning environment.

Managerial Alignment (M1–M8):
Managerial alignment focuses on keeping the course running efficiently and ensuring that learners receive continuous guidance from their e-tutors. This involves regularly logging into the myInspire system (M1), checking discussion forums every couple of days (M2), and contributing at least 15 messages weekly (M3) to maintain active interaction. Prompt responses to inquiries within 48 hours (M4) and proactively contacting students to boost engagement (M5) demonstrate attentiveness, while conducting scheduled e-Tutorials via Google Meet (M6), upholding professionalism (M7), and actively participating in forum discussions (M8).

Technical Alignment (T1–T4):
Technical alignment ensures that all digital learning tools are accessible and user-friendly. This includes e-tutors helping their learners navigate the learning management system (T1) and guiding them in accessing essential online resources (T2). When students encounter issues that require further assistance, directing them to specialized support services at the university (T3) and providing basic troubleshooting—for instance, with Google Meet sessions or accessing recorded materials (T4)—facilitates smooth and uninterrupted access to the course content.

The proposed PMST Sub-Role Alignment Model (PSAM) is built upon two key design principles. First, every learner's complaint is carefully mapped to at least one specific e-tutor role. Second, each e-tutor role is designed to be observable and quantifiable through platform analytics or self-assessment checklists. Figure 2 visually depicts how common learner frustrations are channelled into the PMST dimensions, which then branch out into the actionable sub-roles.

This not only clarifies the expectations for e-tutor performance but also enables tangible benefits. First, it provides clarity to the university by pinpointing the specific behaviours linked to learner dissatisfaction. Second, it supports targetted professional development by identifying sub-roles with lower performance levels for focused training interventions. Finally, the measurable nature of these sub-roles offers a valuable framework for future empirical studies, facilitating the examination of direct causal relationships between tutor actions and learner outcomes.

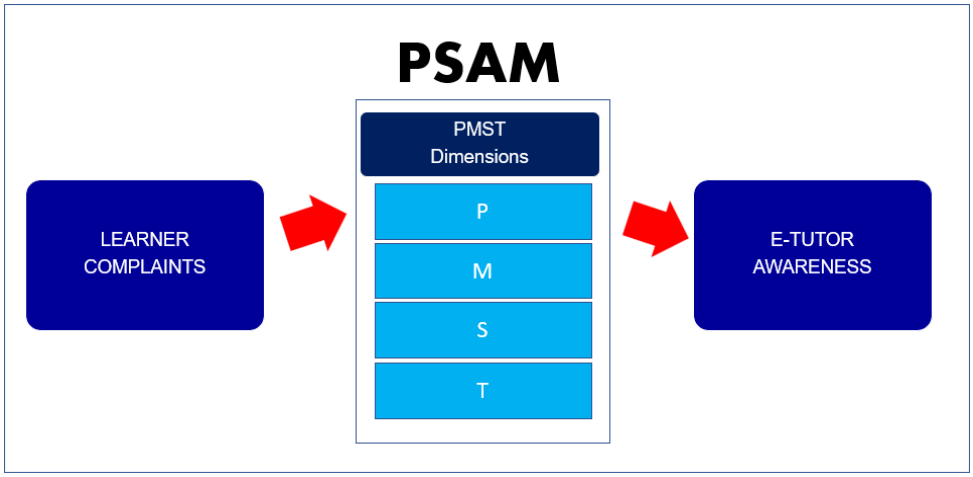

Fig. 2 PSAM

Purpose of the Study
This study examines how e-tutors at OUM have adopted the 26 sub-roles specified under PSAM framework introduced after the university's move to fully online mode. It investigates e- tutors' self-reported practice of each sub-role and compares engagement across the four facilitation dimensions to identify strengths and gaps that may need further support.
The work is guided by three research questions:
RQ 1. How often do e-tutors report performing each PSAM sub-role?
RQ 2. Which roles show the highest and lowest mean enactment scores?
RQ 3. Which sub-roles display the greatest variability in practice, indicating areas that may require targeted professional development?

Study Design

The survey used a quantitative survey to explore e-tutors' perceptions of their prescribed online facilitation roles under PSAM. The survey also examined how frequently they applied these roles in their online courses for both the undergraduate and postgraduate levels during the May 2023 semester.

Survey Instrument

The Google Form survey instrument was used in this study. The questionnaire was adapted from Santa Ana College's Online course self-assessment tool. It was subsequently refined to address the objectives of the study with the guidance of an internal expert. The preliminary survey had a total of 37 items. The first 7 questions collected demographic details of the respondents. Additionally, one question probed the respondents' awareness of the various online facilitation roles at the university, and another delved into the roles they have practiced as online e-tutors for their assigned courses. 26 items were structured on a Five-point Likert scale (Always, Often, Sometimes, Rarely, Never), touching upon the four dimensions proposed by Berge's model. There were 5 items on the Pedagogical dimension, 9 items on the Social dimension, 8 items on the Managerial dimension and 4 items on the Technical dimension. Each of these 26 items required the respondent to provide a response to opinion statements. The preliminary survey instrument was tested on a random sample of 25 e-tutors. Using SPSS, internal consistency for the questions was assessed, and a content validity review was conducted. The Cronbach's Alpha score for the 26 items in the preliminary test stood at 0.758, which is deemed satisfactory. After gathering feedback from the respondents who participated in the pilot survey, the questionnaire items were further refined for clarity before they were rolled out to the respondents.

Survey Sample

According to Krejcie and Morgan (1970), a sample size of 254 was considered sufficient for a study population of 750 e-tutors. However, with 343 e-tutors responding to the survey, the study achieved a 46% response rate, surpassing the required sample size and providing a strong foundation for analysis. Demographically, nearly 66% of respondents were aged between 41 and 60 years, while only 14% fell within the 31-40 age range. The gender distribution among respondents was almost balanced. Regarding academic qualifications, a significant 96% of respondents held at least a Master's degree. In terms of work experience, almost 80% had over a decade of experience in teaching and learning within higher education. Additionally, 34% of respondents had more than 21 years of experience in the field. As for blended teaching experience, 41% had over a decade of involvement, while 12.5% were newcomers with less than 3 years in blended teaching, with the remainder having between 4 to 10 years of experience.

Analysis of the data further revealed that nearly 10% have some experience in fully online teaching in higher education institutions over a decade. Conversely, 50% of the respondents have between 4 and 6 years of experience, while approximately 33% are relatively new with less than 3 years of experience in fully online environments.

Findings

RQ1: How often do e-tutors report performing each PSAM sub-role?

For the pedagogical role, the results are presented in Table 1. The mean and SD scores for each question (P1 to P5) are calculated based on the numerical values assigned to each response type (Always = 5, Often = 4, Sometimes = 3, Rarely = 2, Never = 1).

Table 1

Responses for the pedagogical role

Response	P1(%)	P2(%)	P3(%)	P4(%)	P5(%)
Always	75.52	75.51	68.51	81.05	90.38
Often	22.16	21.57	27.70	15.45	9.04
Sometimes	1.17	2.62	3.50	2.92	0.29
Rarely	0.58	0.00	0.00	0.00	0.00
Never	0.29	0.00	0.00	0.29	0.00
Mean	4.73	4.73	4.65	4.77	4.90
SD	0.54	0.50	0.55	0.52	0.31

Table 1 reveals three clear trends. First, "Always" is the modal response for every pedagogical sub-role, with the highest uptake for P5 (90 %) and P4 (81 %). These tasks align closely with students' immediate needs for clarification and assessment support. Second, P1 and P2 show almost identical "Always" rates, suggesting tutors treat conceptual explanation and contextualisation as a single, integrated practice. Third, P3 records the lowest "Always" rate (69 %), indicating that fostering higher-order discussion is less routine than content delivery or procedural guidance—likely because it requires more time and deliberate facilitation.

Table 2 shows the percentage of each response for items S1 to S9 for the Social sub roles, along with the mean and SD (standard deviation) scores for each question:

Table 2

Responses for the social role

Response	S1(%)	S2(%)	S3(%)	S4(%)	S5(%)	S6(%)	S7(%)	S8(%)	S9(%)
Always	93.88	84.55	59.77	66.76	90.09	77.84	29.74	65.31	84.26
Often	5.54	12.54	23.91	29.74	9.62	20.41	29.74	28.28	14.87
Sometimes	0.29	2.04	12.83	2.92	0.00	1.46	24.20	4.96	0.58
Rarely	0.00	0.58	2.92	0.29	0.00	0.00	8.16	0.87	0.00
Never	0.00	0.00	0.29	0.00	0.00	0.00	7.87	0.29	0.00
Mean	4.94	4.82	4.40	4.63	4.90	4.77	3.65	4.58	4.84
SD	0.25	0.48	0.84	0.56	0.30	0.46	1.21	0.66	0.38

A similar pattern appears in Table 2, consistent with the one for the pedagogical role. "Always" is the dominant response for every sub-role, with the highest uptake for S1 and S5. Sub-role S2 and also score high (≈ 85 %). By contrast, responses for S3, S7, and S8 are more varied. S7 is the least enacted, with 8 % of tutors saying they *never* create such a space.

Table 3 displays the percentage of each response for items for the Managerial role, along with the mean and SD scores for each item:

Table 3
Responses for the managerial role

Response	M1 (%)	M2 (%)	M3 (%)	M4 (%)	M5 (%)	M6 (%)	M7 (%)	M8 (%)
Always	66.76	59.48	53.64	60.64	36.15	92.13	91.48	59.48
Often	28.86	33.53	29.74	34.11	27.70	7.58	7.87	32.36
Sometimes	4.08	5.54	13.12	4.66	25.07	0.00	0.00	7.29
Rarely	0.00	0.58	2.92	0.29	7.00	0.00	0.00	0.58
Never	0.00	0.58	0.29	0.00	3.79	0.00	0.00	0.00
Mean	4.63	4.51	4.34	4.56	3.86	4.92	4.92	4.51
SD	0.56	0.68	0.84	0.60	1.10	0.27	0.27	0.66

Managerial sub-roles follow the same overall pattern: “Always” is the modal response for every item. M6 and M7 top the list, with about 92 % and 91 % of tutors, respectively, reporting they *always* perform these tasks. M1–M4 and M8 also score well (60–67 % *Always*). M5 (proactive outreach to inactive learners) is the clear outlier: only 36 % *Always* and 10 %

Never/Rarely.
Table 4 displays the percentage of each response under the Technical Dimension along with the mean and SD scores for each item.

Table 4

Responses for the technical role

Response	T1(%)	T2(%)	T3(%)	T4(%)
Always	57.14	48.98	43.44	39.07
Often	30.03	31.20	25.95	28.86
Sometimes	9.62	15.74	22.74	19.53
Rarely	2.04	2.62	4.96	8.75
Never	0.87	1.17	2.62	3.50
Mean	4.41	4.25	4.03	3.92
SD	0.82	0.90	1.05	1.12

Technical roles (Table 4) show lower uptake than the other dimensions**.** The most frequently enacted task is T1—helping students navigate myInspire—reported as *Always* by 57 % of tutors. The remaining items cluster just below 50 % *Always*, and T4 (basic troubleshooting) has both the lowest *Always* rate (39 %) and the highest *Rarely/Never* rate (12 %). These figures suggest tutors prioritise platform navigation but provide hands-on technical support less consistently, perhaps assuming students can resolve minor issues independently.

RQ 2. Which roles show the highest and lowest mean enactment scores?
From Tables 1-4 and averaging the five-point frequency scores shows the existence of a role hierarchy: pedagogical roles are performed most consistently (M = 4.76, SD = 0.49), followed by social roles (M = 4.61, SD = 0.63). Managerial tasks sit mid-range (M = 4.53, SD = 0.74), while technical support is the least developed area (M = 4.15, SD = 0.99).

RQ 3. Which sub-roles display the greatest variability in practice, indicating areas that may require targeted professional development?

The largest spreads in tutor practice occur in five sub-roles. The most variable is S7 with an SD = 1.21—indicating that some tutors embrace this community-building tool while many do not use it at all. Technical support items follow: T4 (SD = 1.12) and T3 (SD = 1.05) both show wide dispersion, suggesting uneven confidence or uncertainty about responsibility for first-line technical assistance. M5 also displays high variability (SD = 1.10). Within the otherwise strong pedagogical set, P3 has the greatest spread (SD = 0.55), implying that higher-order discussion is facilitated consistently by some tutors but not others.

Implications

The data seems to indicate that critical-thinking facilitation (P3) should be embedded directly within every e-Tutorial session. This can be achieved through standardized questions—such as prompts for application, analysis, and synthesis—that automatically appear in discussion templates. Furthermore, online workshops can be convened where e-tutors can work together to refine these prompts, thereby building proficiency in guiding learners through the full cycle of cognitive presence.

The study found that the largest spread in e-tutor practice occurred in role S7. This seems to suggest that many e-tutors may not see this as a 'core" duty or may not know how to perform this sub-role effectively. This is a missed opportunity. Having an informal interaction space is a way to reduce feelings of loneliness and isolation among fully online learners and in fostering a stronger sense of community. One way to help e-tutors here is to provide them with "preset" discussion forums—titled, for example, "Weekend Reflections" or "Weekly study tips"—complete with starter prompts to lower the effort needed to get started. Similarly, M5 remains a challenge to many e-tutors. To support e- tutors in this sub-role, the university could introduce automated alerts when a student has not logged in or posted for a certain number of days. Also, providing a set of short, ready-to-use message templates would make it easier for tutors to respond quickly. Recognising tutors who consistently follow up with learners can also send a clear message that this kind of proactive engagement matters. Finally, basic technical support (T3–T4) ought to be incorporated into initial tutor training via a concise technical orientation segment. In this session, tutors engage with a one-page troubleshooting guide that outlines the ten most common learner issues, and learn established procedures for escalating unresolved problems.

Discussions and Conclusion

This study provides valuable insights into what OUM e-tutors are actually doing during their online facilitation. A major finding from this study is that there is a clear hierarchy in e-tutor engagement: pedagogical roles (P1–P5) were given most prominence, with e-tutors regularly explaining concepts, providing examples, guiding assignments, and offering clarification. Another finding from this study is that as far as social roles are concerned, sub-roles (S1, S2, S5, S9) are prioritised by most e-tutors, as they frequently posted welcome notes, shared self-introductions, maintained a positive tone, and used respectful language. Another finding from this study was that managerial roles like logging in regularly, checking the online forum and posting messages, and responding to learners' inquiries within 48-hours (M1–M4), conducting e-Tutorials on schedule, maintaining professionalism and actively participating on the online forum (M6-M8) were carried out by approximately 92 % of e-tutors. On the other hand, this study found that technical roles (T1–T4) lagged furthest behind, with assisting learners with basic navigation of the myInspire platform (T1) widely adopted by e-tutors,

while directing learners to advanced help (T3) and troubleshooting issues (T4) remained uncommon. Finally, the study also found that sub-role P3—encouraging critical thinking—exhibited both the lowest mean enactment and greatest variability, and proactive outreach to inactive students (M5) was the least practiced managerial sub-role.

The findings from this study are consistent with earlier research findings on online teaching presence. The prominence of pedagogical sub-roles echoes Garrison, Anderson, and Archer's (2000) assertion that teaching presence drives learner satisfaction. The findings of this study seem to suggest that e-tutors are strongest where teaching and social roles are concerned, and weakest when it comes to hands-on technical help. Another finding from this study is that one weak area appears to be in carrying out sub-role P3—getting students to think critically—which shows both the lowest average and the widest spread; while e-tutors "keep the conversation going", they may often stop short of designing prompts or guiding discussions toward the deeper sense-making that defines true cognitive presence. This gap reflects Garrison and Cleveland-Innes's (2005) finding that without instructor-led, purposeful course design and moderation, learners rarely move beyond surface-level exchanges.

On the social role, e-tutors give primacy to roles S1, S2, S5, and S9. Posting a welcome note and self-introduction at the semester's start makes a positive first impression—Richardson and Swan (2003) showed that strong social presence correlates with perceived learning and satisfaction. Likewise, creating a positive, non-threatening environment and adopting an appropriate tone fosters the sense of fellowship students need. By contrast, S7 ranks lowest, mirroring Shea and Bidjerano's (2009) finding that many instructors under-utilize "low-stakes" community builders despite their value in reducing transactional distance.

Under the managerial sub-roles, the high consistency in M1-M4. M6-M8 reflect best practices identified by Porter and Bozkaya (2020) as key to driving engagement and retention. Yet proactive outreach to inactive learners (M5) attracts the highest rarely/never responses, suggesting that time constraints and unclear contact protocols hinder personalized follow-up—an area ripe for targeted support.

Technical roles are the weakest. While a majority of tutors help learners navigate the myInspire , fewer feel confident with T3 (directing learners to the help desk) and T4 (basic troubleshooting), which mirrors Sun et al.'s (2008) finding that reliable technical assistance is a critical determinant of e-learning satisfaction.

To address these gaps, professional-development efforts should focus on four areas. First, P3 (encouraging critical thinking) needs explicit instructional-design support through workshops that model effective questioning. Second, uptake of S7 can be strengthened with brief sessions on low-maintenance community threads. Third, variability in M5 calls for clear outreach protocols, message templates, and recognition. Finally, confidence in T3–T4 can be improved via concise, scenario-based training and an up-to-date "first-line support" guide. Targeted interventions in these sub-roles should bring social, managerial, and technical practice up to the strong pedagogical baseline, thereby aligning facilitation more closely with the PMST Sub-Role Alignment Model (PSAM).

Limitations of this Research

While this study offers valuable insights into how e-tutors carry out their roles under PSAM, several limitations that should be acknowledged. Firstly, the reliance on self-reported survey data may introduce response bias: respondents could overestimate their own performance or align responses with perceived "best practices." Secondly, the cross-sectional design captures enactment at a single semester, which prevents any assessment of how these roles evolve over time or in response to targetted interventions by the institution. Thirdly, the sample is drawn exclusively from the university's e-tutor community, limiting the generalizability of findings to other institutions or contexts. Finally, our focus on quantitative frequency data means we lack the rich, contextualized understanding that qualitative interviews or open-ended feedback could provide—particularly around why certain sub-roles are adopted more readily than others.

Further Research

Building on these findings, future studies might employ a mixed-methods approach, combining surveys with in-depth interviews or focus groups to explore the motivations and challenges behind sub-role enactment. A longitudinal design could track changes in tutor practices before and after participation in targeted professional-development workshops (for example, on critical-thinking prompts or low-stakes community building). Comparative research across different institutions, disciplines, or cultural settings would shed light on how local policies and learner demographics influence PMST role uptake. Finally, experimental studies that introduce and evaluate specific interventions—for instance, template messages for proactive outreach or scenario-based technical-support training—could identify the most effective strategies for closing the gaps highlighted by this research.

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