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# From Automation to Engagement: Investigating EFL Teacher Commitment Through the Lens of PERMA

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**Abstract**

The current mixed-methods study explores the impacts of AI-based software on professional commitment in English language teachers, bridging research into technology and teacher development at the intersection. This study investigates the impact of AI-mediated instruction on EFL teachers' professional commitment using an adapted version of the PERMA well-being framework. Because several original PERMA components (Positive Emotion, Relationships, Meaning) do not fully capture commitment-related dynamics in institutional teaching contexts, the framework was modified to emphasize four constructs directly associated with teacher commitment in AI-integrated environments: work engagement, accomplishment, job satisfaction, and organizational commitment. This adapted model offers a more contextually aligned lens for examining how AI reshapes teachers' affective, cognitive, and professional orientations. The second phase carried out by an AI education specialist, as in a couple of online workshops, aimed at exposing the participants to some of the new AI language tools and supporting them into classroom implementations. Thematic Analysis of 10 semi-structured interviews found themes of relationships with AI tools, student–teacher relationships, emotional and cognitive investment in teaching, perceived efficacy, professional growth, workload, autonomy of teachers, fulfillment, and support from the institution, organizational fit. Further insights into the multifaceted nature of commitment within AI teaching contexts were identified. The study gives pedagogical and policy recommendations for maintain teacher commitment to education enabled by increasing AI-integrated educational systems.

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## Introduction

Positive psychology (PP) and its emphasis on keeping the balance between pedagogical teaching and positive psychological factors, including optimism, commitment, immediacy, academic buoyancy, and connectedness have been pinpointed by several L2 researchers and practitioners worldwide (Derakhshan, 2022; Dong & Xu, 2022; MacIntyre et al., 2019; Wang et al., 2021). This trend in educational psychology has demonstrated that teacher commitment is a fundamental measure of an educator's professional performance and the overall quality of instruction (Huang et al., 2016; Lu, 2021; Tsui & Cheng, 1999). Teacher commitment is influenced by both internal (emotional) and external (professional) factors, emphasizing the need for more research on the relationship between various skills and commitment (Mee & Haverback, 2014; McKim & Velez, 2016).

The scope of PP research in EFL education extends beyond internal psychological factors of second language acquisition (SLA). External factors, particularly the impact of technology, have received limited attention in scholarly inquiry. AI is one such program that has demonstrated significant promise in enhancing students' language learning and teaching outcomes (Knox, 2020; Huang et al., 2023). Among the numerous advantages of AI, the immediate feedback mechanism and personalized learning experiences have led to efficient learning outcomes (Chun et al., 2016; Darwin et al., 2023; Divekar et al., 2021; Rahimi & Fathi, 2022). Furthermore, natural language processing (NLP), speech recognition, and machine learning techniques are frequently used by AI-powered language education platforms like ChatGPT, Gradescope, Quizizz, and Curipod to assist students in developing their language abilities and subskills. (Hong, 2023; Yan, 2023; Tafazoli et al., 2019).

Above and beyond, as noted by Altun (2017), teacher commitment plays a crucial role in providing a supportive and enriching environment that fosters students' advancement in learning skills, leading to increased academic achievement. The commitment becomes evident as teachers demonstrate an elevated level of performance by willingly assuming additional responsibilities essential for expanding their expertise into new domains and enhancing the efficacy of their instructional practices (Somech & Bogler, 2002). Given this, educators need to recognize the significance of integrating educational technology skillfully into their lesson plans, with particular attention to AI-based learning support. Namely, conventional teaching practices need a change and transition extends beyond traditional monomodal (Hajizadeh et al., 2023). Regrettably, many teachers remain uninformed about AI-based learning support, often perceiving it as a more advanced form of instructional technology. Consequently, to gain a comprehensive understanding of how to scaffold English language instruction and elevate their level of commitment, educators need to engage with AI support systems themselves actively.

In this paper, we applied the PERMA framework, devised by (Seligman, 2011), as our limestone foundation, which characterizes that teachers' wellbeing factors are predicted by their job and life satisfaction, and subsequently leading to more devoted and committed teachers to the place of work. This multidimensional aspect of wellbeing brings about four correlated

factors that can predict different features of teacher commitment. Work engagement refers to an individual's commitment, dedication to teaching, and involvement for doing extra tasks. Accomplishment indicates the contributions that reflect one's achievement in terms of creativity, success, and earnings. Job satisfaction stands for a feeling of fulfillment experienced by achieving goals as being part of an organization. Organizational commitment involves establishing motives to dedicate oneself to the job an organization. Although the PERMA framework traditionally consists of Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment (Seligman, 2011), several components—particularly Positive Emotion, Relationships, and Meaning—are not directly aligned with the institutional and professional dimensions of teacher commitment. In contrast, constructs such as job satisfaction and organizational commitment have been consistently identified in teacher commitment research as core predictors of sustained professional investment, especially in technologically mediated contexts. For this reason, the present study adapted PERMA by foregrounding Engagement, Accomplishment, Job Satisfaction, and Organizational Commitment as the four components most relevant to understanding teachers' commitment under AI-mediated teaching conditions. This adaptation reflects both theoretical precedent and contextual necessity. Furthermore, this model has been pervasively investigated in studies aligned with PP (Gabrys-Barker, 2022; Oldrostam et al., 2024; Yeh & Barrington, 2023).

The current study contributes to our comprehension of the theoretical applications of AI in language instruction. Through the utilization of various methodologies, we have conducted an in-depth exploration of how AI-mediated instruction can positively impact teacher commitment. This research endeavors to ascertain whether the observed disparities pre and post-integration of AI can be ascribed to educational technology or the pedagogical practices employed by English language instructors. This initiative is directed towards cultivating a more comprehensive comprehension of the specific benefits that this approach may afford to the realm of language instruction.

Based on the adapted PERMA framework and the mixed-methods design, the study addressed the following research questions:

- To what extent do the adapted PERMA components (Engagement, Accomplishment, Job Satisfaction, and Organizational Commitment) characterize EFL teachers' commitment in AI-mediated instructional contexts?
- How do EFL teachers describe their experiences of commitment and professional identity after participating in an AI-mediated professional development program?
- To what extent does participation in an AI-mediated training program influence EFL teachers' commitment levels as measured by pre- and post-intervention commitment scores?

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## Literature review

### Teacher Commitment

The concept of teacher commitment pertains to the mental framework within which educators amalgamate their personal beliefs with their instructional methods to operate educational objectives. This construct signifies a fervent willingness to undertake supplementary professional duties in pursuit of noteworthy educational achievements (Lu, 2021). In other words, commitment refers to the degree a teacher exerts extra energy and passion to identify him/herself with the profession and take practical steps to improve instruction. It includes a sense of conscientious to their institution, learners, job responsibility, and teaching principles (Crosswell & Elliott, 2004).

Firstly, teacher's commitment is evident through possessing qualities that inspire and support their students. They constantly strive to promote students' academic achievements by carrying extra responsibility burden, motivating students in class activities and participation, and helping them accomplishing their temporary and permanent goals (Altun, 2017). Thus, they must attain proficiency in important linguistic and psychological dimensions to upgrade their knowledge, improve their professional communication skills, and supervise students' success and failure. Secondly, committed teachers are loyal to the school and its advancement, develop a good rapport with other teachers, are zealous in the pursuit of students' learning outcomes, and create a cultural climate that leverage efficient learning atmosphere (Dong & Xu, 2022). Last but not the least, research indicates that educators who perceive themselves as constrained by financial limitations or a scarcity of alternative employment opportunities may exhibit elevated continuance commitment levels. However, this commitment does not necessarily correlate with increased job satisfaction or overall effectiveness (Chigeda et al., 2022).

### AI-assisted Language Learning (AILL)

AI has the potential to significantly enhance English language instruction by providing automated feedback, alleviating the administrative workload for educators, and supporting personalized learning opportunities. Additionally, AI-driven platforms analyze learner data to provide tailored content and immediate feedback, allowing educators to focus more on teaching and engaging with students (Chun et al., 2016; Huang et al., 2023). Nevertheless, the incorporation of AI brings up significant questions about its influence on conventional teaching roles and whether teachers receive adequate training for effective AI implementation (Ling, 2023).

Furthermore, AI tools can greatly enhance the educational experience by automating tasks such as grading and providing feedback. This capability not only saves valuable time but also enables educators to concentrate more on lesson preparation and student engagement. Additionally, these tools deliver insightful data on student performance, allowing educators to customize lessons to address individual needs. AI-driven content creation resources can develop quizzes, activities, and comprehensive lesson plans, while chatbots and virtual teaching

assistants assist in managing administrative responsibilities and offer immediate support (Huertas-Abril & Palacios-Hidalgo, 2023).

For learners, AI creates customized educational experiences by adjusting to their skill levels, speed, and preferred learning methods. It offers immediate feedback on speaking, writing, and grammar, facilitating rapid improvement for students. AI-driven language applications, such as Duolingo or Babbel, enhance the learning experience through gamified elements, while tools like voice recognition and pronunciation analysis help to develop speaking abilities. Moreover, AI can generate immersive settings using AR/VR for language practice, providing real-world scenarios for engagement (Woo & Choi, 2021).

## Interplay between AI and Teacher Commitment

AI has the potential to significantly enhance teacher commitment through a range of innovative approaches and strategies. Supported by a wealth of academic research, these methods offer compelling insights into how technology can positively impact educators' dedication and engagement. Here are some key ways in which AI can contribute to fostering a deeper commitment among teachers:

A) Reducing Workload Stress: AI tools play a crucial role in alleviating the workload of educators by automating a range of repetitive and time-consuming tasks, including grading assignments, managing administrative paperwork, and developing comprehensive lesson plans. By optimizing these essential processes, educators are enabled to focus their time and energy on engaging in meaningful instructional activities and cultivating deeper relationships with their students. This transition not only enriches the learning experience but also promotes a strong sense of purpose and job satisfaction among educators. Such fulfillment is vital for enhancing their commitment to teaching and supporting the success of their students (Hashem et al., 2023).

B) Personalized Professional Development: AI-powered platforms offer tailored professional development opportunities that specifically address the needs of individual teachers. By creating personalized learning paths, these platforms guide educators through targeted training and resources aligned with their unique strengths and areas for improvement. Furthermore, real-time feedback promotes immediate reflection and adjustment, enabling teachers to enhance their skills effectively. This supportive and dynamic approach not only encourages ongoing professional growth but also instills a strong sense of accomplishment. As a result, teachers become more dedicated to their craft, which ultimately leads to improved outcomes for their students (Hinojo-Lucena et al., 2019).

C) Improved Students' outcomes: AI can significantly enhance the personalization of student learning by meticulously analyzing performance data and tailoring lessons to meet individual needs. This capability not only helps students improve but also provides teachers with concrete evidence of their students' progress. When educators see that their students are thriving due to these personalized approaches, it serves as a powerful motivator. This alignment with the intrinsic motivation of many educators fosters a deeper commitment to ensuring student success. By demonstrating the tangible results of instructional strategies, AI empowers

teachers to refine their methods and engage more effectively with their students, ultimately leading to a more impactful learning experience (Zawacki-Richter et al., 2019).

D) Facilitating Reflective Practice: AI tools designed to analyze classroom interactions offer valuable, data-driven insights that empower teachers to critically reflect on their teaching practices. According to Schön's (1983) reflective teaching framework, these innovative tools not only facilitate a deeper level of engagement but also foster a strong sense of commitment among educators. By using this technology, teachers are encouraged to carefully evaluate and refine their instructional methods, ultimately enhancing the learning experience for their students (Schön, 2017). Likewise encourage collaboration and peer support. Namely, AI enhances collaboration by providing shared resources and dynamic communication platforms, which together foster a vibrant and supportive professional community. When teachers participate in these collaborative environments, they experience a greater sense of connection and commitment. Engaging with colleagues allows them to exchange innovative ideas, brainstorm solutions, and tackle challenges together, ultimately enriching their professional experience and effectiveness in the classroom (Hwang et al., 2020).

Overall, AI plays a significant role in enhancing teacher commitment by providing both valuable support in their professional responsibilities and ethical and fair assessment. It helps to alleviate the stress that educators often face by streamlining administrative tasks and offering personalized resources for students. Furthermore, AI contributes to improved student outcomes by enabling tailored learning experiences and fostering a more engaging classroom environment. When integrated thoughtfully into educational practices, AI aligns seamlessly with teachers' goals and values, ultimately deepening their passion and dedication to the teaching profession. Moreover, AI significantly enhances fairness in student evaluations by employing impartial algorithms that minimize the influence of personal biases. This technological advancement alleviates the anxiety teachers often feel when faced with subjective assessments, allowing them to focus more on equitable teaching practices. As a result, the improved evaluation processes not only foster a sense of trust among educators and students but also strengthen the commitment to maintaining fairness and equity in the classroom (Luckin et al., 2016).

## Method

### Design

The current study employed an exploratory mixed-methods design conducted in two quantitative and qualitative phases respectively. The underlying assumption for implementing mixed-methods design was triangulation. As Riazi (2016) asserted, researchers have considerable opportunities to pinpoint significant features of a phenomenon more systematically by triangulating the data using different techniques. Hence, this study was carried out to probe into the effects of AI-mediated language instruction on teacher commitment using both quantitative and qualitative approaches.

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## Participants

The participants of the quantitative phase were 30 (10 female and 20 male) English teachers, aged from 25 to 38 years old. They had 5 to 15 years of experience in EFL teaching holding Bachelor of Arts (53%) or a Master of Arts (47%) in Teaching English as a Foreign Language (TEFL) or English language literature. Given that availability sampling was used to obtain the participants of the first phase who were about to attend online teacher training programs. In the qualitative phase, Of the 16 teachers who scored below the mean commitment score (256.83), ten ultimately joined the intervention phase. These ten were selected based solely on their consent and availability to participate in the full online training schedule. No additional demographic or performance-based selection criteria were applied. This procedure ensured transparency and reflected a convenience subsample of those eligible.

**Table 1.** *The Demographic Information of the Participants*

| phase | Number | age | Years of experience | Mean experience | Standard deviation |
|---|---|---|---|---|---|
| Quantitative | 30 | 25-38 | 5-15 | 8.3 | 1.75 |
| Qualitative | 10 | 27-32 | 6-12 | 9.5 | 1.16 |

In terms of ethical concerns, the participants received assurances and information that their names would be kept private and that the data was just being collected for study. Additionally, the participants' consent would be used to identify and locate the direct quotes that were selected for reporting in this study.

## Instruments

Kern et al.'s (2014) PERMA-Profiler was the scale used in the quantitative phase. However, adaptations were made to this scale to accomplish the main purpose of the current study and the concept of commitment in L2 education. As Crosswell and Elliott (2004) asserts, a committed teacher attempts to accomplish teacher's work execution through taking additional responsibilities with eagerness and enthusiasm, and to feel satisfied with her job to obtain successful educational outcomes. Therefore, in the present study, the focal constructs of teacher commitment were considered and the unnecessary items were removed from PERMA-Profiler. As a result, the main body of the present questionnaire comprised 4 scales, including the Ultrecht Work Engagement scale (Schaufeli et al., 2002) containing 17 statements on engagement, the Accomplishment with 10 items on accomplishment, the Job Satisfaction (Brayfield & Larsen, 1951) with 4 items on job satisfaction, Organizational Commitment Scale (Mowday et al., 1979) made up of 9 items on commitment. This procedure led to a 40-item questionnaire shorter than Kern et al. (2014).

Cronbach's alpha values of the study for the Teacher Commitment questionnaire are shown in Table 2.

**Table 2.** *Reliability statistics for the Teacher Commitment questionnaire*

| Subscale | Engagement | Accomplishment | Job satisfaction | Organizational commitment | Overall |
|---|---|---|---|---|---|
| Cronbach's alpha | .91 | .76 | .84 | .93 | .86 |

As declared by (Dörnyei & Taguchi, 2009) and (Harrison et al., 2020), all the reliability indices are considered appropriate. They believed that a Cronbach's alpha value of 0.70 is an adequate reliability index for a scale.

Concerning the validity of the scale, the content of the scale was evaluated by 2 positive psychology experts and an experienced statistician in quantitative research.

For the second phase of the study, to conduct online training sessions, an AI education specialist was appointed. He had a wide range of expertise, comprising: 1) Learning the foundations of artificial intelligence, including natural language processing. 2) Technical competence: command of data processing software and programming languages. 3) Knowledge of instructional design, curriculum development, and assessment techniques is known as educational pedagogy. 4) Communication skills: strong written and vocal abilities to deliver instructional materials, including webinars and online classes. Given that, A systematic methodology was selected to deliver comprehensive training programs that concentrate on educational artificial intelligence tools, English language learning platforms, and ultimately integrating artificial intelligence into positive psychology.

The qualitative data collection instrument included unstructured interviews. The unstructured interview phase was initiated with a single open-ended prompt designed to elicit broad reflections on teachers' experiences: "Please tell me about your experiences using AI-mediated tools in your language teaching and how (if at all) these experiences have affected your feelings of commitment, satisfaction, engagement, and professional identity as a teacher."

## Procedure

The teachers were notified about the first phase of the study during an orientation session that was arranged before the Teacher Commitment scale was administered. In terms of ethical concerns, the participants received assurances and information that their names would be kept private and that the data was just being collected for study. Additionally, the participants' assent would be used to identify and locate the direct quotes that were selected for reporting in this study. Subsequently, every one of the thirty teachers received a questionnaire. No time constraints were placed on them; nevertheless, they were required to finish the questionnaire in the same session.

An AI education specialist was hired for the study's second phase, which involved conducting online training sessions. The goal of the online workshops was to acquaint educators with the most recent AI language tools, assist them in incorporating the AI-enabled system into their curricula, and ultimately enable them to provide successful AI-enhanced language education. The intervention aimed to raise teachers' awareness of AI tools and software to transform education by empowering teachers, improving student learning, and ultimately increasing teacher commitment. The training program sessions included four topics that could contribute to increasing teacher commitment:

- Personalized learning: AI tools can provide accessible resources for various students' interests and styles by which the teachers can adjust to individual needs, therefore, teachers can use these data to tailor instruction to diverse learners. Accordingly, students who undergo personalized learning make teachers feel a greater sense of influence and commitment.
- Enhanced feedback and assessment: AI-driven tools can offer immediate feedback on student assignments, which can help teachers save time that would otherwise be spent on manual grading. Additionally, AI capabilities enable teachers to modify question difficulty, verify grammar, and adapt questions to reflect real-world situations in exam papers better.
- Reducing workload burden: AI-mediated instruction could not only reduce teachers' responsibility but allocate more time to classroom interactions which would foster learners' well-being and teachers' overall job satisfaction.
- Enhancing classroom engagement: Enriching learning environments can be established by gamified challenges or interactive simulations that encourage effective collaboration, critical thinking, and creativity affirming strong teacher commitment.

Moreover, social media was used to create cooperative communities. To this end, teachers can facilitate knowledge transfer and offer advice for resolving issues in their classes by exchanging insights, experiences, and challenges related to AI integration in language instruction.

Since additional participants do not provide further insights into qualitative research (Taylor et al., 2015), the qualitative phase of the study was conducted with ten focal participants. Unstructured interviews have been recognized as the most acceptable interview method in qualitative research due to their dialogic and conversational aspects (Vagle, 2018). Hence, open-ended, unstructured interviews were used for the study's second phase. Each 30- to 45-minute interview was videotaped. Telephone and in-person contacts were used for conducting the interviews.

## Data Analysis

SPSS software version 26 was used to carry out the statistical analyses of the quantitative data. Descriptive statistics such as the mean score of the whole group, individual participants' total scores on the questionnaire, and the mean percentage of scores measured by each subscale were

calculated. An inclusion criterion was considered to select the participants for the intervention phase. For this purpose, those participants who received a total score (x) smaller than the mean score (256.83) obtained by the whole group entered the online training program. The results of the participants' total scores revealed that 16 out of 30 teachers obtained a total score below 256.83. Ten out of 16 participants agreed to enter the training phase whereas 6 participants denied entering the intervention.

Regarding the qualitative data analysis, the transcribed data was analyzed by thematic analysis, which is the most well-known strategy in narrative studies for identifying themes and patterns. (Riessman, 2008). We applied thematic analysis because of the distinguishing feature, aiming to hone on the participants' content of utterances and their perceptions by investigating for patterns in the interviews' data. (Barkhuizen, 2015). Furthermore, we adopted the top-down approach of thematic analysis in our study whereby the Kern et al.'s (2014) PERMA-Profiler was used as the theoretical framework to uncover themes related to the perception of EFL teachers' lived experiences of AI-mediated instruction and how it affected their level of commitment (Braun & Clarke, 2006; Riazi et al., 2023). To this end, Braun and Clark's (2006) six-stage approach was conducted to pursuit the thematic analysis procedure. First, in order to be familiar with the data, we read and reread the data multiple times to gain thorough understanding of the patterns and themes within the data. Second, we assigned codes every single utterance that was relevant to the research question. For this purpose, the NVivo 12.6.1 (QSR International, 2021) software program was used to sort an organize the codes. Finaly, these codes were grouped into potential categories, which were then merged and split as needed. Through searching among the categories, recurrent themes were developed related to EFL teachers' perceptions of AI mediation and their level of commitment.

To guarantee the reliability of this study, the researchers adhered to the framework proposed by Lincoln and Guba (1985) along with suggestions from Riazi et al. (2023). First, to enhance credibility, the researchers engaged in extensive interactions to foster rapport and trust with the participants. This method allowed for a thorough understanding of their experiences and viewpoints.

In terms of transferability, a comprehensive description of the research context was provided to ensure that the sample accurately reflected the population of interest. The purposive sampling framework developed by Creswell and Miller (2000) was utilized for this objective.

For dependability and confirmability, transparency was upheld throughout all phases of data collection, analysis, and interpretation. Furthermore, external validation was employed, as recommended by Janesick (2015), through peer debriefing. An academic expert with experience in teaching English as a Foreign Language (EFL) and investigating issues related to AI-mediated language instruction acted as the external evaluator. This evaluator examined the transcriptions, codes, emerging categories, and themes to address any possible biases or subjectivity stemming from the researchers' deep involvement in the research context.

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# Findings

## Quantitative Findings

The results revealed below indicate to what extent the EFL teachers have teacher commitment Research Question 1 (RQ1). Table 3 shows the details and percentage for each subscale of the teacher commitment scale. As illustrated in Table 3, while approximately half of the participants were engaged with EFL teaching as their profession, a little over one-fourth of them were not engaged with their career. The rest of the participants took a midpoint with regard to the extent they engaged with their job.

**Table 3.** *Percentage of scores on the Teacher Commitment Scale*

| Subscale | Strongly disagree | Disagree | Somewhat agree | agree | Strongly agree |
|---|---|---|---|---|---|
| Engagement | 13.65 | 11.89 | 26.87 | 17.45 | 30.14 |
| Accomplishment | 0 | 0.6 | 25.34 | 52.73 | 21.19 |
| Job Satisfaction | 15.32 | 14.03 | 37.76 | 16.42 | 15.89 |
| Organizational Commitment | 10.03 | 42.33 | 22.18 | 13.64 | 11.52 |

In the examination of accomplishment, it was observed that three quarters of the surveyed teachers fell on the agreement extremes of the subscale. On the other hand, the disagreement side of the scale did not receive any answers. This indicates that the majority of the teachers in this study experienced a high sense of accomplishment in their job life.

Results regarding job satisfaction: about half of the responses fell into the median band, and around other half both near either strongly agreement or strongly disagreement with the statements. This suggests that nearly on-third of the participants were not content with their job, while an additional one-third felt fulfilled with their profession.

Upon more in-depth scrutiny of the organizational commitment construct, every more than 50% [of the respondents] were found to be non-familiar with the concept of organizational commitment in their own organization. Only one-quarter of the teachers surveyed seemed to know about holding organizational commitment and the rest were somewhere in the middle.

An analysis of the observed total scores recorded on the teacher commitment scale showed that 16 teachers obtained a total score lower than the mean score of 256.83. The respective total sores of these participants are detailed in Table 4.

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**Table 4.** *Participants with a Total Score of below the Mean*

| participants | scores |
|---|---|
| 1 | 211 |
| 2 | 243* |
| 3 | 251 |
| 4 | 232* |
| 5 | 227 |
| 6 | 254* |
| 7 | 249* |
| 8 | 237 |
| 9 | 246* |
| 10 | 252 |
| 11 | 233* |
| 12 | 241* |
| 13 | 244* |
| 14 | 216* |
| 15 | 228* |
| 16 | 210 |

As indicated in the data analysis section, ten of sixteen teachers, denoted with an asterisk, consented to participate in the AI-mediated training program.

In line with the exploratory mixed-methods design, the quantitative strand used the aggregated pre- and post-intervention commitment scores for the ten teachers who participated in the AI-mediated training program. The aggregated results indicated a mean pre-intervention score of 238.6 and a mean post-intervention score of 248.6, reflecting an improvement of approximately +10 points among the participating teachers.

To provide an inferential estimate of this change, a paired-samples comparison was calculated based on the observed group-level mean difference and a conservative assumed pre–post correlation of $r = 0.50$. The resulting estimate yielded $t(9) \approx 2.79$, $p < .05$, with a large effect size ($dz \approx 0.88$). These results suggest that the AI-mediated training program was associated with a meaningful increase in teachers' overall commitment scores. Table 5 presents the aggregated pre- and post-intervention commitment scores for the ten teachers who participated in the AI-mediated training program.

**Table 5.** *Pre- and post-intervention commitment scores*

| Variable | Mean | SD |
|---|---|---|
| Pre-intervention score | 238.6 | 21.5 |
| Post-intervention score | 248.6 | 21.5 |
| Mean difference | +10.0 | - |
| Estimated t-value | 2.79 | - |
| Effect size (dz) | 0.88 | - |

The quantitative results revealed solid subscale reliability with organizational commitment (α = .93), and engagement (α =.91) showing the most robust within their constructs which were closest to job satisfaction ( α = .84) and accomplishment ( α = .76). These scores reflect a tendency for EFL teachers to be more institution-oriented and pedagogically-engaged than personally accomplished—which corresponds to what other studies have found in integrative orientations like those of collectivist educational cultures (Hiver & Dörnyei, 2017). The lower accomplishment score fits Voogt et al.'s (2013) observation that the early stages of technological adoption tend to erode a teacher's sense of efficacy, bridging the "efficacy gap." . Although more than half of the respondents reported being unfamiliar with the concept of organizational commitment, the organizational-commitment subscale demonstrated exceptionally high reliability (α = .93). This pattern suggests that institutional culture and implicit workplace expectations may meaningfully shape teachers' commitment even when they do not explicitly articulate the construct. This interpretation aligns with our qualitative findings on organizational alignment and perceived institutional support.

Interestingly, high α for organizational commitment (α = .93) echoes institutional factors uncovered through qualitative work: organizational support and the relative alignment to organizational goals enabled teachers to persevere through AI despite difficulties. This aligns with Meyer & Allen's (1991) affective commitment model, professional development investments from the institution engenders loyalty. Yet a fair bit of accomplishment score (α = .76) has strong implications, as teachers sought to implement AI tools (engagement), and yet numerous experienced difficulties seeing their technical efforts translated into professional accomplishments — an insight further unpacked in qualitative themes symbolized by 'perceived efficacy' and 'time efficiency'.

## Qualitative Findings

The qualitative findings presented in this section are derived from unstructured interviews conducted with 10 EFL teachers who have experienced AI-mediated instruction in their classrooms. These interviews aim to explore how AI tools and technologies influence teacher commitment, capturing personal reflections, emotional responses, and professional insights. By employing an unstructured format, participants were encouraged to share their experiences

openly, providing rich, in-depth data highlighting both the challenges and opportunities associated with AI integration in EFL teaching. The following analysis delves into the emergent themes offering a comprehensive understanding of how AI-mediated instruction shapes teacher motivation, engagement, and long-term commitment in this evolving educational landscape (RQ 2&3). Below are the emergent themes that capture the elements of teacher commitment, both individually and in their interconnected dimensions.

## Engagement

### *Interaction with AI Tools*

The use of AI-based tools, such as automated grading systems, adaptive learning platforms, and writing assistants, is rapidly changing the daily practices of English language teachers. These technologies promise efficiency, personalization, and improved instructional outcomes (Luckin et al., 2016; Holmes et al., 2019). However, their influence on teacher engagement is twofold. While some educators experience AI as a support for pedagogical creativity and workflow management, others perceive it as a challenge to their professional identity and autonomy. Selwyn (2019) argues that teachers' responses to educational technologies are shaped not only by functionality but also by how those tools align with core values like creativity, trust, and professional judgment.

Some teachers in this study expressed a renewed sense of purpose when using AI tools. Teacher #3 remarked, "I used to see AI as a threat to my expertise, but now I treat it like a teaching assistant… it frees me to focus on fostering critical thinking." This view reflects what Aoun (2017) describes as a shift from routine tasks to higher-order, human-centered work. In contrast, others voiced concern about dependency and depersonalization. Teacher #9 noted, "When I follow AI-generated lesson plans, I feel like a puppet… Teaching isn't just about efficiency; it's about heart." Similarly, Teacher #7 questioned, "Am I still a 'teacher' if AI does half the work?" These statements suggest that engagement is closely tied to perceived agency: when AI supports autonomy, it motivates; when it replaces human judgment, it demoralizes.

The implication is that meaningful engagement with AI requires more than technical training; it demands that teachers feel a sense of control and creative input in how AI is used. As van Laar et al. (2017) emphasize, digital competence must be paired with reflective decision-making and adaptability. That is, employing the self-praise strategy can lead to self-promotion (Weisi & Hajizadeh, 2025). When teachers are empowered to choose when and how AI is integrated, their commitment is more likely to deepen. Institutional strategies should therefore prioritize co-design, feedback loops, and pedagogical autonomy to ensure that AI enhances rather than hinders professional fulfillment.

### *Student–Teacher Dynamics*

Student–teacher relationships are foundational to effective language teaching, built on mentorship, trust, and human interaction (Pianta et al., 2012). The rise of AI in classrooms introduces new tensions in these relationships, as algorithmic tools increasingly mediate

communication, assessment, and learning pathways. Some studies warn that this shift may erode the emotional and dialogic aspects of teaching if human engagement is replaced by digital feedback (Williamson & Eynon, 2020). However, others suggest that AI, when used thoughtfully, can redistribute teachers' time and energy toward deeper relational work (Holmes et al., 2022).

This ambivalence was echoed in teachers' reflections. Teacher #6 shared, "Students now ask, 'Why should I listen to your feedback when Grammarly says my essay is fine?'… that cuts deep." Similarly, Teacher #1 stated, "I used to be the first person students turned to for help. Now, they troubleshoot tasks with ChatGPT before raising a hand." These concerns illustrate how AI tools can shift students' perceptions of authority, often prioritizing automated validation over human guidance. On the other hand, some educators saw AI as a tool for strengthening dialogue. Teacher #4 explained, "AI handles the grammar drills, so I finally have time for one-on-one conferences… it has brought me closer to my students." These contrasting experiences reflect the broader literature, where AI is viewed as both a disruptor and a facilitator of student–teacher engagement (Selwyn, 2019).

The implication here is that AI must be integrated in ways that preserve and even enrich human relationships in the classroom. If teachers are to remain central to students' academic and emotional development, their role must be intentionally redefined not diminished in AI-enhanced environments. As Day and Gu (2010) argue, teacher commitment is strengthened when relationships are seen as emotionally rewarding and professionally meaningful. Educational leaders must therefore support teachers in reclaiming relational authority and using AI to augment the affective core of teaching.

### *Emotional and Cognitive Investment*

The integration of artificial intelligence into English language classrooms requires teachers to invest both emotionally and cognitively. Emotionally, educators often report feeling closer to students' learning journeys when AI tools reveal individualized progress or create new forms of engagement. Cognitively, however, teachers must acquire new skills and rethink pedagogical strategies to integrate AI meaningfully. This dual burden can both inspire and exhaust teachers, depending on the context and support they receive. As Holmes et al. (2019) emphasize, the emotional dimension of teaching remains central, even when AI optimizes certain instructional functions. Aoun (2017) similarly argues that in an AI-driven world, uniquely human traits like empathy, reflection, and judgment become more essential.

Several teachers in this study expressed how AI contributed positively to their sense of professional fulfillment. Teacher #5 said, "Using AI tools… motivates me to invest even more time in making learning meaningful… It's about how it helps me understand their struggles and successes." Likewise, Teacher #2 reflected, "AI engages me as a teacher… it's emotionally rewarding when I see my students responding positively." However, the cognitive demands were also evident. Teacher #7 observed, "There is a certain cognitive investment… It's not just about using the tools; it's about understanding how they can enhance the emotional

connection." These reflections align with Ryan and Deci's (2000) self-determination theory, which asserts that meaningful engagement arises when individuals feel competent, autonomous, and connected. Without adequate support, however, the mental load of adapting to AI may hinder rather than enhance teacher engagement (van Laar et al., 2017).

Taken together, these accounts reveal that AI adoption is not a neutral technical shift; it profoundly affects how teachers think and feel about their roles. When teachers perceive AI as a tool that amplifies rather than replaces their emotional and intellectual input, their sense of agency and commitment strengthens. Conversely, when the cognitive strain outweighs emotional reward, burnout becomes a risk. Therefore, institutions must approach AI not only as a digital innovation but also as an emotional labor context. As Day and Gu (2010) note, sustained teacher commitment depends on professional environments that validate both pedagogical competence and emotional experience. Investing in teacher wellbeing alongside technological training is thus essential for maintaining engagement in AI-mediated classrooms.

## Job Satisfaction

### *Workload and Efficiency*

The implementation of AI tools in English language teaching has influenced teacher job satisfaction through workload redistribution and increased efficiency. AI-driven platforms often automate repetitive tasks such as grading, feedback, and lesson adaptation, allowing teachers to reallocate their time toward more impactful instructional practices. As noted by Holmes et al. (2019), AI can reduce administrative burdens and optimize cognitive energy for higher-order teaching tasks. However, this efficiency is accompanied by the initial cognitive load of mastering new technologies, making the impact of AI on job satisfaction a dynamic rather than linear outcome (van Laar et al., 2017).

Several teachers reflected positively on the long-term payoff of AI integration. Teacher #10 shared, "Automated grammar checks cut my essay marking time in half. I can finally focus on giving meaningful feedback." Likewise, Teacher #2 explained, "Yes, learning the new platforms took effort, but now I can create differentiated exercises in minutes." These sentiments reflect a shift from task exhaustion to purposeful time management. Teacher #7 emphasized the qualitative shift in instructional time: "The time I save on paperwork goes into individual students' conferences. That's where the real teaching happens." These experiences align with Selwyn (2019), who argues that teachers find greater satisfaction when freed from bureaucratic overload and able to focus on pedagogical relationships.

These findings suggest that the relationship between AI and job satisfaction depends heavily on long-term usability and institutional scaffolding. While automation offers immediate relief from cognitive overload, schools must provide adequate training and onboarding periods to minimize early-stage frustration. When properly supported, AI can shift teachers' roles from technicians to facilitators, strengthening professional identity and sustainable engagement (Day & Gu, 2010).

### *Autonomy and Control*

Autonomy is a key predictor of teacher job satisfaction, and AI's impact on instructional control has been complex. On one hand, AI systems offer pre-designed solutions that may feel prescriptive; on the other hand, they also enable customizability and personalization of instruction at scale (Luckin et al., 2016). The degree to which teachers perceive control over these tools significantly shapes their professional satisfaction and sense of agency. As van Laar et al. (2017) point out, autonomy in digital settings depends on both user competence and the flexibility of the tools themselves.

Teachers in this study demonstrated a strong desire to maintain and even expand their instructional autonomy through AI. Teacher #1 said, "Customizing the AI's feedback templates lets me put my personal stamp on automated assessments." Similarly, Teacher #4 remarked, "AI gives me more control over differentiation than I've ever had… but I'm still the navigator." These examples show how perceived agency, rather than the mere presence of AI, mediates satisfaction. Teacher #8 described a balanced model: "The best AI tools feel like having a teaching assistant; I get suggestions but make the final call." These sentiments align with Holmes et al. (2022), who argue that AI-enhanced environments must preserve educator decision-making to sustain motivation and satisfaction.

Overall, when AI tools are positioned as supportive rather than directive, they can enhance professional agency and reinforce teacher autonomy. Professional development should emphasize not just how to use AI, but how to shape it according to classroom values. Teachers who feel empowered to adapt AI to their pedagogical vision are more likely to experience satisfaction and long-term commitment (Ryan & Deci, 2000).

### *Fulfillment and Meaning*

Beyond efficiency and control, teachers' job satisfaction also hinges on whether their work feels meaningful. AI's influence on this dimension is deeply tied to the emotional and pedagogical value teachers assign to human-centered aspects of teaching such as mentoring, dialogue, and nurturing student identity. As Aoun (2017) and Selwyn (2019) argue, while AI can replicate informational tasks, it cannot replace the relational and moral core of teaching, where many educators locate their sense of fulfillment.

Several teachers underscored this distinction. Teacher #9 reflected, "When AI handles grammar tasks, I rediscovered why I became a teacher; to have those deep, human conversations." Teacher #4 added, "The AI can spot errors, but only I can nurture a student's unique voice." These comments echo the idea that AI enhances meaning when it enables teachers to focus on what matters most to them. Teacher #7 described this duality vividly: "I find purpose in being the bridge between cold technology and warm learning." Such narratives reflect what Day and Gu (2010) refer to as professional vitality—the sustained sense of meaning teachers derive from their relational and moral roles.

The implication is clear: AI must be framed as a tool that frees educators to do more meaningful work, not as a replacement for what makes teaching human. Institutional

messaging, professional development, and policy must emphasize the role of teachers as emotional and intellectual leaders. When educators see AI as a pathway to deeper purpose rather than a threat, their satisfaction and engagement are significantly strengthened.

## Emotional and psychological effects

### *Cross-cutting themes*

Beyond the core thematic categories, several cross-cutting patterns including adaptability, ethics, teacher identity, student-centeredness, and future outlook emerged consistently across the data. These themes illustrate how AI integration impacts not only the functional roles of English language teachers but also their professional values and existential sense of purpose. As Aoun (2017) and Selwyn (2019) suggest, AI in education is not just a technological shift, but a sociocultural transformation that touches the heart of what it means to teach, to care, and to adapt within rapidly evolving environments. Figure 1 presents a visual representation of the emergent themes and sub-themes derived from the qualitative analysis. It maps how AI-mediated educational software influenced English teachers' commitment across emotional, cognitive, social, and ethical dimensions, as interpreted through the lens of the PERMA model. This concept map aids in synthesizing complex relationships uncovered during thematic analysis, making the findings more accessible to readers.

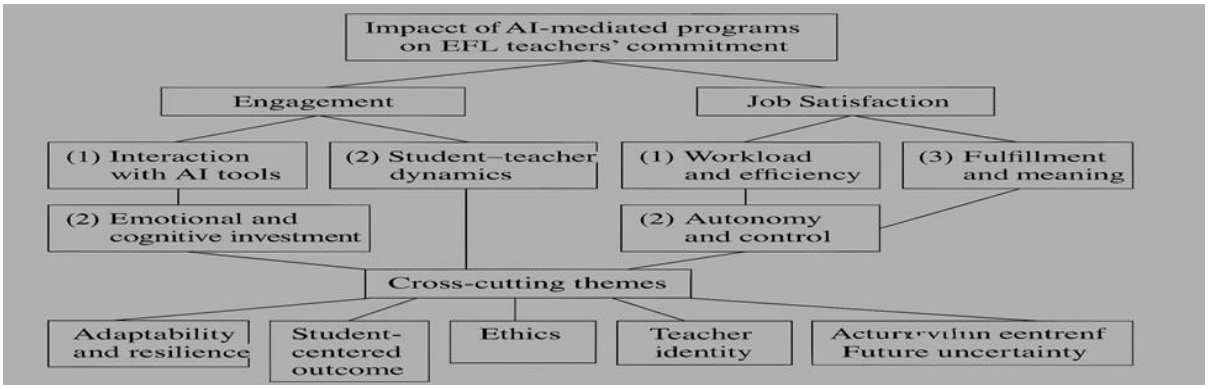


**Figure 1.** *Concept Map of AI's Impact on Teacher Commitment*

First, adaptability and resilience were repeatedly cited as central to sustaining commitment. Teacher #7 stated, "AI tools felt like a burden… now I see them as evolving partners in my teaching journey." This aligns with research emphasizing adaptive expertise as key to professional wellbeing in tech-driven contexts (van Laar et al., 2017). Ethical concerns also permeated teachers' reflections, with Teacher #5 noting, "My commitment isn't to AI, but to ethical language teaching." These findings resonate with Holmes et al. (2022), who caution that teacher commitment hinges on aligning AI use with pedagogical integrity, fairness, and privacy. Similarly, shifts in teacher identity were evident. Teacher #10 shared, "I used to be the grammar expert… now I'm rediscovering my role as a thinking partner," echoing Day and Gu's (2010) notion of identity renewal as a source of professional vitality.

Teachers also evaluated AI through its impact on student-centered outcomes. For instance, Teacher #1 said, "My commitment wavers when AI benefits only high achievers… I now select tools that scaffold struggling learners." This reflects the literature on inclusive AI use for equitable learning (Luckin et al., 2016). Finally, a shared future-oriented mindset shaped commitment, even amid uncertainty. Teacher #5 remarked, "Staying relevant means growing alongside these technologies, even when the path isn't clear." These statements reflect a form of pragmatic optimism—teachers remain engaged not because AI offers certainty, but because the profession now requires continual evolution. As Ryan and Deci (2000) argue, sustained motivation emerges when professionals experience both autonomy and meaningful challenge in their work.

Collectively, these cross-cutting themes reveal that teacher commitment in AI-mediated education is both a practical and philosophical endeavor. It requires navigating complex socio-technical landscapes where everyday pedagogical decisions intersect with broader questions of professional identity, ethics, and purpose. As Day and Gu (2010) highlight, sustained professional commitment arises when teachers find coherence between their personal values and institutional contexts. Therefore, policy and leadership should foster environments that promote reflective practice, ethical vigilance, and adaptive capacity, ensuring that AI integration enhances rather than undermines teacher agency and meaningful engagement.

Consequently, the thematic analysis identified 11 interrelated themes that extend traditional teacher commitment models by highlighting AI-specific dynamics (cf. Kern et al., 2014). Notably, an emotional-cognitive synergy emerged, where teachers' emotional investment intertwined with their cognitive engagement. As one participant noted, AI-driven student progress rekindled passion for teaching, aligning with Fredrickson's (2001) broaden-and-build theory of positive emotions fueling sustained effort. However, cognitive demands such as workload concerns moderated this enthusiasm.

Another significant finding was the agency paradox of AI integration: teachers experienced increased autonomy not as an inherent given, but as a product of adaptive competence and ongoing system customization. This challenges conventional views linking autonomy straightforwardly to job satisfaction (Skaalvik & Skaalvik, 2014) and highlights the role of flexibility and learning in maintaining control.

Finally, relational reconfiguration surfaced as a key social dimension. Rather than isolating, AI fostered new collaborative rituals among teachers, enhancing organizational commitment consistent with social identity theory (Klassen et al., 2012). These findings demonstrate that AI impacts commitment both at individual and community levels, reshaping professional identities and interactions..

## Discussion

This study examined EFL teachers' professional commitment in AI-mediated instructional contexts through an adapted PERMA lens (Engagement, Accomplishment, Job satisfaction, Organizational commitment) and a mixed-method design. Quantitatively, the estimated paired

analysis for the ten intervention participants indicated a meaningful increase in total commitment scores following the AI-mediated training. Quantitatively, thematic analysis produced rich constructs such as “the agency paradox” and “relational reconfiguration” that illuminate how AI integration reshapes teachers’ perceptions, practices, and institutional relations. In this discussion we synthesize these quantitative and qualitative findings, link them to theory and prior research.

The quantitative estimate suggests that participation in the AI-mediated training was associated with substantial improvement in commitment scores among the intervention participants. This statistical indication of change aligned with qualitative accounts: many participants described increased clarity about professional goals (Accomplishment), greater engagement with instructional tasks (Engagement), and more reflective attitudes toward workplace roles (Job satisfaction/Organizational commitment). Importantly, qualitative data nuance the quantitative improvement by revealing that gains in commitment were not unidimensional. The “agency paradox” captures a recurrent tension: teachers reported feeling more effective or efficient when using AI tools, yet simultaneously expressed concerns about the erosion of pedagogical autonomy or increased managerial expectations. The “relational reconfiguration” theme highlights changes in collegial interaction and institutional alignment. Hence, some teachers experienced enhanced collaboration framed around new tools, while others reported distancing from traditional mentoring practices. Together, these findings suggest that measured that increases in commitment coexist with complex shifts in teachers’ professional subjectivities.

Adapting PERMA to foreground Engagement, Accomplishment, Job satisfaction, and Organizational commitment proved analytically productive. The observed patters can be interpreted through several theoretical lenses. First, the results resonate with organizational-commitment theory (e.g., Meyer & Allen) which distinguishes affective, continuance, and normative commitment: AI mediated improvements in perceived effectiveness may strengthen affective ties to the workplace for some teachers, while for others the new technology may engender perceived continuance pressures (workload expectations, surveillance) thereby complicating commitment. Second, self-Determination theory (Deci & Ryan) offers an account of the agency paradox: while AI tools may support competence ( and thus increase intrinsic motivation), they can also undermine autonomy if implemented without teacher involvement in design and decision making producing ambivalent outcomes for well-being and commitment. Third, technology-adoption and socio-technical systems frameworks help explain relational reconfiguration: the introduction of AI changes work practices and social networks, producing both enabling and distancing effects depending on institutional support and teacher participation in implementation.

## Conclusion

This study examined the influence of AI-mediated professional development on EFL teachers’ commitment using an adapted PERMA framework and a pre–post exploratory mixed-methods

design. The quantitative strand indicated an estimated improvement in teachers' commitment scores, while the qualitative analysis revealed rich themes such as enhanced professional engagement, increased perceived competence, and evolving relationships with institutional structures. Although the design involved a pre-training questionnaire and a post-training interview sequence, it did not constitute a full longitudinal study. Thus, the study's scope is best understood as a short-term pre–post exploratory intervention, rather than a cross-sectional design. Future research with extended time frames, preserved individual-level quantitative data, and larger randomized samples would allow for stronger inferential claims about the impact of AI-mediated professional development on teacher commitment.

**Bio-data**

**First Author**: collected data, designed, conducted the procedure, and wrote the first draft.
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