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Barriers and breakthroughs in implementing higher-order thinking skills (HOTS) during teaching practicum: Experience of English pre-service teachers

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Abstract

Global challenges and 21st-century skills drive education to prioritize higher-order thinking skills (HOTS) over rote memorization. Educational reforms, including those in Indonesia, emphasize HOTS; however, their successful implementation depends on teachers' abilities. Pre-service teachers recognize the importance of HOTS but struggle to incorporate them into teaching. This study addresses a vital gap in the existing literature by exploring the experiences of six English language pre-service teachers at an Indonesian university who completed a five-month teaching practicum. Utilizing a narrative inquiry approach, the research sought to elucidate the educational experiences of these pre-service teachers and to offer valuable insights into the effectiveness of the pedagogical models employed. Through in-depth, semi-structured interviews and reflective journals, comprehensive and detailed accounts of personal and professional meaning-making processes were obtained. The findings indicated that the implementation of HOTS involves not only cognitive and technical challenges but also an emotional and identity-formation journey. While lecture notes in university courses help students catalogue theoretical concepts, they often encounter a disconnect between theory and classroom practice, leading to cognitive dissonance as they navigate multiple professional identities. Furthermore, pre-service teachers encountered significant systemic and linguistic constraints, notably students' limited English vocabulary, strict time constraints, and an exam-oriented educational culture. They had devised strategies to address these challenges, including pedagogical adjustments such as shifting from generic textbook examples to localized, contextualized, and culturally relevant topics, as well as engaging in structured reflection on emotional challenges in collaboration with supportive mentor teachers. The insights gained from this research can inform teacher education programs in planning targeted interventions and methods and may prompt policy revisions aimed at producing graduates equipped with higher-order thinking skills.

Keywords: *critical incidents; higher order thinking skills; narrative inquiry; pre-service teachers; teacher education*

INTRODUCTION

As a result of technological advances, Industry 5.0, and unforeseen developments, educational paradigms need to change rapidly to prepare learners for the 21st-century job market. As machines take over lower-order cognitive tasks that require little involvement of human reasoning and thinking, the need for human capabilities such as complex problem-solving, transdisciplinary collaboration, resilience, and technological solution creation is in demand (Hashim et al., 2024; Chigbu & Makapela, 2025). As a result, an education system that fosters the development of Higher-Order Thinking Skills (HOTS), such as analyzing, evaluating, creating, and critical thinking, has become an essential requirement (Anderson & Krathwohl, 2001; Trilling & Fadel, 2009). In EFL contexts, HOTS can not only enhance language but also involve other cognitive reasoning of the student. EFL classrooms provide a context in which students can develop interpretive and negotiated skills related to their own language acquisition while also employing critical thinking (Pabriana et al., 2023; Ragab et al., 2024; Mousavi et al., 2026). Nevertheless, implementing HOTS within the framework of language learning requires a significant shift from the conventional grammar-translation approach to an inquiry-based one, which still faces global issues (Xuan et al., 2024; Sajidin, 2026).

This international issue is especially significant in Indonesia. Indonesian students' low performance on international assessments such as PISA and TIMSS has led to a national curriculum mandate to implement teaching that focuses on HOTS to develop their analytical abilities (Akmalia & Parlan, 2024; Pahdi & Abidin, 2020; Kemendikbud, 2013). Nevertheless, effective application of these policies hinges on teachers' capacity to translate broader objectives into everyday practice (Fullan, 2007). EFL teachers face increasing systemic limitations. Students have limited proficiency in English, making basic-level comprehension challenging and higher-order tasks virtually impossible (Singh et al., 2020; Puspitasari, 2025). In addition, there are large class sizes, a lack of teaching resources related to HOTS, and an exam-oriented school culture that has already existed so far (Setiawati & Setyarini, 2020; Rasyid et al., 2021; Astrid et al., 2022). When mentor teachers spend considerable time preparing their students for standardized tests, inquiry-based learning strategies are often replaced by lower-order rote-learning tasks to maintain classroom order and meet rigid targets (Saifer, 2024; Zain et al., 2022).

Pre-service teacher education programs are crucial in preparing educators by providing them with essential pedagogical knowledge and dispositions (Darling-Hammond, 2012; Korthagen, 2010; Voithofer & Nelson, 2021). These challenges underscore the importance of such programs. It is imperative for pre-service teachers to integrate curriculum objectives with classroom practice and ongoing professional development. Regrettably, numerous students commence their practicum with only a superficial, taxonomic understanding of HOTS, where it is reduced to a mere collection of action verbs utilized in lesson planning rather than a guiding philosophy of teaching (Armala et al., 2019; Susantini et al., 2022). According to several experts, teachers encounter considerable cognitive dissonance resulting, among

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other factors, from limited training in planning tasks that promote critical thinking (Bachtiar et al., 2024; Assaly & Jabarin, 2024; Liew et al., 2020). Furthermore, their educational experiences have often failed to expose them to good models (Ginting & Kuswandono, 2020). Tanak (2020) and Hashemiparast et al. (2019) concur with this perspective.

To appreciate the struggle with HOTS implementation, it must be recognized not only as a pedagogical hurdle but also as a professional identity crisis. The transition from a “transmitter of knowledge” to a “facilitator of critical thought” requires pre-service teachers to continually negotiate their emerging identities within restrictive institutional frameworks. Reflective practice becomes the crucial mechanism through which they process cognitive dissonance and reconstruct their pedagogical beliefs (Zohar, 2023).

While previous studies have effectively classified the barriers to HOTS integration, a crucial gap remains. Earlier research predominantly focused on cross-sectional or survey designs to compile a consistent list of the cognitive and practical challenges. As a result, there is little to no available literature that details the lived experiences and the internal meaning-making of pre-service teachers in real time as they confront these obstacles. While it is evident that there are barriers, little is known about how pre-service teachers experientially navigate them, how they emotionally process their instructional challenges, or how they achieve pedagogical breakthroughs during their teaching practicum.

It is important to address this gap to move from diagnosis to reform. Using a narrative inquiry approach (Clandinin & Connelly, 2000), this study seeks to capture the ongoing trajectory of pre-service teachers’ meaning-making. Narrative inquiry highlights the emotional, psychological, and contextual nature of lived experience by examining “critical incidents” and “learning moments” embedded in their narratives (Barkhuizen et al., 2024). In addition, past research has provided little longitudinal evidence on the ongoing effects of professional development. This research moves beyond a deficit narrative to showcase how pre-service teachers employ effective strategies, such as coping through successful improvisation, the impact of reflective practice, and working in a non-supportive environment, to create HOTS-ready classrooms. Exposing these stories will enable teacher education programs to develop targeted interventions, responsive mentorship models, and research-informed policy reforms. With this in mind, the researcher formulated the following research questions. (1) How do pre-service EFL teachers narrate their experiences about HOTS during reflective practice? What systemic challenges and critical breakthroughs do pre-service teachers face in the classroom?

This research was significant, particularly in offering insights into the challenges faced by pre-service teachers in the implementation of Higher-Order Thinking Skills (HOTS). The findings from this study aim to serve as a reference for English Education lecturers when delivering foundational training related to HOTS implementation during practicum periods. Consequently, this will enable pre-service teachers to execute HOTS more effectively in practical settings.

METHOD

Research Design

Employing a qualitative narrative inquiry framework, the study aimed to investigate the experiences of pre-service English language teachers as they implement Higher Order Thinking Skills (HOTS) during their teaching practicum (Clandinin & Connelly, 2000; Clandinin & Caine, 2013; Barkhuizen et al., 2024). Originally envisioned as a form of inquiry that could gather rich, storied accounts, narrative inquiry collects accounts that reflect meaning-making, both personal and professional. This design is suitable for understanding the emotional, cognitive, and pedagogical complexities experienced by pre-service teachers as they attempt to implement HOTS-oriented teaching. According to Clandinin and Connelly (2000), narrative inquiry is a means of understanding experience. It is a collaboration between researcher and participants, over time, place, or a series of places, and in social interaction with the milieu. This method permits a profound exploration of the subjective realities and evolving understandings of the participants.

Participants

Participants were selected through purposive sampling, with the primary criterion that they were currently undertaking their capstone teaching practicum. The practicum lasted exactly five months (August 2025 to December 2025). A sample of six participants (n=6) was intentionally selected. Narrative inquiry methodology privileges deep, rich longitudinal data from a small cohort over broad, thin data from a large sample, as it allows for an in-depth thematic cross-case comparison without losing the distinct voices of the participants (Barkhuizen et al., 2024).

The six pre-service teachers are shown in Table 1 along with their demographic profiles.

Table 1. Participant Profiles

Pseudonym	Gender	Age	School Placement Level	Prior Teaching Experience
Rina	Female	21	Junior High School	None
Budi	Male	22	Senior High School	Private tutoring (1 year)
Sari	Female	21	Senior High School	None
Andi	Male	22	Vocational High School	None
Maya	Female	21	Junior High School	Teacher Assistant (6 months)
Dian	Female	22	Senior High School	None

Instruments

The study employed two primary qualitative instruments to ensure a comprehensive and triangulated dataset:

In-depth Semi-structured Interviews

Participants took part in two 60-minute semi-structured interviews. The purpose of the interviews was to generate detailed personal accounts of dilemmas and decision-making in the effort to implement HOTS. Using a semi-structured format ensured that themes would be addressed while allowing flexibility (Vaivio, 2012). The sample questions from the interview guide are summarised in Table 2.

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Table 2: Sample questions from the interview guide

No	Questions
1	Can you walk me through a specific topic or method where you tried to implement a HOTS-based activity? What actually happened in the class?
2	Describe a moment during your practicum when you felt completely unprepared to ask higher-order questions. How did you react?
3	How did your mentor teacher's expectations align or conflict with your attempts to use inquiry-based teaching?

Reflective Journals or Written Narratives

Participants took part in the study and were invited to produce three semi-guided written reflections (approximately 500–750 words each), spaced throughout their five-month practicum. The journals were based on prompts inspired by Gibbs’ Reflective Cycle, which required participants to narrow their focus and respond to a “critical incident” involving Higher-Order Thinking Skills (HOTS), detailing the incident, feelings, evaluation, and action plan. This method, which involved capturing experiences immediately, mitigated the disadvantages of retrospective interviews. In other words, it documented internal thought processes and emotional responses over time.

Data analysis

Data were analyzed using narrative thematic analysis (Barkhuizen et al., 2024; Riessman, 2008), focusing on patterns, emotional arcs, and turning points in the collected stories. NVivo software (Version 12) was primarily used as a data management tool to organize transcripts, systematically code data, and retrieve coded segments across the large qualitative data set.

The coding process was predominantly inductive and data-driven, encompassing the following steps: (1) Familiarization: This involved reading and rereading all interview transcripts and journal entries to gain an overview of each participant’s story arc. In NVivo, a line-by-line analysis was conducted to generate first-level codes that are close to participants’ own words or quotations. This yielded 48 initial codes (e.g., fear of silent students, abandoning the lesson plan, pressure to complete the textbook). (3) Arranging codes into categories according to the theme. Codes related to student silence, inability to remember vocabulary, and issues with misbehaving students were merged into Classroom Realities vs. Theoretical Expectations. (4) Thematic Mapping: Categories were refined into themes that answered the research questions. To ensure robustness, two researchers independently coded a sample of the data (20%). Small disagreements were resolved through negotiation (investigator triangulation). In conclusion, the themes were mapped back to the conceptual framework of teacher identity and reflective practice.

Trustworthiness and Ethical Considerations

A variety of trustworthiness strategies were employed to establish the credibility and reliability of the findings. The reflective journal entries, which documented immediate emotional experiences, and the interview transcripts, which revealed deeper retrospective meanings, were triangulated. Additionally, thorough member checking was conducted: all six participants received their interview transcripts and a preliminary draft of their personal narrative summaries. All

six participants validated the researcher's interpretations. They offered minor contextual clarifications, which were subsequently incorporated into the study.

Before commencing data collection, Institutional Review Board clearance was formally obtained. Participants provided written informed consent, indicating their willingness to participate in the study. They also had the right to withdraw from the study at any time without penalty. They were fully informed about the study. Each participant was assigned a pseudonym and identifying details about the school where they were placed were masked.

RESULTS AND DISCUSSION

This section highlights the significant findings that emerged from interviews and reflective journals of six pre-service English language teachers. We will discuss the interpretation of data through the lens of narrative inquiry, particularly in relation to critical incidents, obstacles, solutions, and changes in perspective related to HOTS implementation in practicum.

Table 3. Themes of the research result

Theme	Sub-themes	Frequency (n=6)	Primary Data Sources
Understanding of HOTS	Mostly gained in coursework; deepened during practicum	6/6	Interviews, Reflective Journals
Barriers	Time limits, vocabulary gaps, passive learners, and curriculum	6/6	Interviews, Reflective Journals
Breakthrough Moments	Student creativity, engagement with personal topics, and improvisation	5/6	Interviews, Reflective Journals
Growth through Reflection	Increased confidence, realization that all students can think critically	6/6	Interviews, Reflective Journals
Support Systems	Mentors, peers, modeling helped experimentation	4/6	Interviews
Emotional Impact	Feelings of pride, frustration, and motivation shaped identity	6/6	Interviews, Reflective Journals (primarily)
Future Plans	Commitment to continued learning, more visual and digital strategies	6/6	Interview

Initial Understanding and Preparation for HOTS

Recent studies show that pre-service teachers lack a deep understanding of HOTS concepts and the ability to operationalize these concepts in lesson planning and assessment (Assaly & Jabarín, 2024; Rianasari & Apriani, 2019; Sumardi & Guci, 2023). However, this study found a different result. Maya demonstrated a comprehensive understanding of HOTS.

"...Trying to ask questions with a critical answer pattern does require its own tricks. I often try to ask with the word ask why, for example, at the beginning of the learning opener, I began to stimulate by asking what breakfast is, why it is eaten, what the effect is, and so on, of course, related to learning today..." Journal excerpt week 2 (Budi)

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It differs from Rina, who initiates stimulation by attempting to present problems to be solved.

"I often give two different situations comparisons, for example, picture 1 of a dirty beach, a picture of 2 clean beaches. I ask them, what is different, why is that, why does it happen, what are the consequences...." Interview excerpt (Rina)

All participants displayed an initial awareness of HOTS, often referring to it as involving critical, analytical, and creative thinking and its relationship to the Bloom taxonomy. More than half were introduced to the concept through their teacher education courses. Most often, this occurred in courses related to teaching strategy and lesson planning.

"...compiling starting from learning methods that support the implementation of HOTS, for example, such as problem-based learning (PBL), I implement it in the classroom in the stages seen from the lesson plan that I compiled..." Interview excerpt (Dian)

While participants understood HOTS theoretically, several admitted that their understanding deepened significantly only after engaging in their teaching practicum.

"I even better understand the concept of HOTS in learning when I directly practice it in class..." Interview excerpt (Andi)

This observation supports the perspective that pre-service teachers often acquire a clearer understanding of Higher-Order Thinking Skills (HOTS) through experiential teaching and learning opportunities rather than through direct instruction (Fono & Zohar, 2024). This finding demonstrates that comprehension of HOTS is not solely achieved via instructional methods but is also constructed during practicum experiences. Teacher education programs frequently exhibit a persistent gap between theory and practice, providing theoretical tools and lesson planning without sufficient classroom practice for HOTS activities (Korthagen, 2010; Pabriana et al., 2023). A formulation of this pedagogical approach regards HOTS as a body of knowledge that can be transmitted. Conversely, alternative formulations view this pedagogy as a complex skill that can only be mastered and internalized through active engagement—implementing it within teaching practice and subsequently reflecting upon it.

Barriers to Implementing HOTS in Practice

Participants consistently reported multi-layered challenges that impeded their efforts to implement HOTS in the classroom. These barriers were not solely cognitive but encompassed student-level, systemic, and classroom management issues.

Student-Level Challenges

All participants encountered multifaceted challenges in communicating the HOTS beyond the classroom teaching environment. These barriers encompassed cognitive issues, student-level difficulties, systemic obstacles, and concerns related to classroom management.

" Their biggest challenge is their limited vocabulary in English. They like simple tasks; when I ask a 'why' question they just freeze." Interview Excerpt (Budi)

At the same time, Maya said that a lack of words and weak English made students passive.

"When I asked them yes/no questions, they answered them spontaneously, but when the answer needed an explanation, they got stuck. When I asked why, they knew the answer but couldn't say it." Interview Excerpt (Maya)

This failure of responsiveness reflected a disinclination to engage in open-ended dialogue and an absence of prior experiences with the open-ended tasks which demand deeper reasoning. One participant stated, for example,

"At today's meeting, students seemed to have difficulty discussing and even answering complex questions. After being asked, they knew the answer but couldn't express it..." Journal excerpt week 3 (Sari)

The findings of this research corroborate prior studies indicating that the linguistic requirements of HOTS-based tasks influence language learners (Tyas, et al., 2019; Ginting & Kuswandono, 2020; Fitriani et al., 2023; Puspitasari, 2025). Furthermore, Budi encountered challenges related to the varying proficiency levels of students in English.

"... Classes whose English level is varied are also an obstacle because I have to explain the basics first, for example, when the topic is about recount text, some students already know it before, so others must be explained first..." Interview excerpt (Budi)

Given the significant disparity in English proficiency among students, teachers offer basic explanations of tasks to ensure comprehension for all students. According to prior research, teachers often depend more on lower-order questions due to the variability in student abilities and the presence of students speaking in English at varying levels, particularly within multilingual settings (Singh et al., 2020; Heffington & Coady, 2023). However, during the implementation process, Dian perceived the situation differently.

".. for today's class turned out to be different, students' English skills were uneven, but this is a way for me, when conducting discussion activities about flood, students who are less proficient will do more analysis by looking for translations according to the context and answering questions..." Journal excerpt week 5 (Dian)

This situation indicates that the implementation of HOTS can be done in various ways.

All things considered, the limited English vocabulary of students prevented them from executing more complex tasks and taking part in open-ended conversations. Due to this language barrier and differences in the levels of English proficiency, the learners were passive and dependent on teachers' lower-order questions. Nonetheless, the obstacles can be used for the implementation of HOTS.

Time and Curriculum Constraints

All the respondents cited limited lesson time and dense curricula as practical constraints to the implementation of HOTS, particularly in view of the level of the students' proficiency in English. Their written reflections demonstrated an ongoing struggle. A journal entry written by Sari during week three describes in detail the difficulties created by those time restrictions.

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"I spent 30 minutes trying to help them understand the text on global warming. By the time I wanted to ask them to evaluate the author's argument, the bell rang. Because time is so limited, I often have to abandon my HOTS lesson plan just to finish the basic material." Journal Excerpt (Sari)

Although many of the respondents later found alternatives, it should be noted that Dian experienced persistent issues with the integration of HOTS. At a very competitive Senior High School, she ceased using inquiry-based methods by the third month. Dian said this in her last interview.

"The students explicitly asked me to just give them the grammar formulas for the national exam. When I tried problem-solving, they resisted. I felt I had to choose between being a 'HOTS teacher' and completing the practicum." Interview excerpt (Dian)

The emphasis on examinations in this instance has completely eclipsed the efforts of pre-service teacher training. When teachers feel obliged to teach a great deal in not enough time, they do not go deep. As a result, there is an inadequate time duration for inquiry-based or problem-solving activities, which foster HOTS. The implementation of HOTS should also consider social norms, cultural expectations (MACS), institutional context, pedagogical choices, and teacher cognition (Kurti, 2023; Zohar et al., 2001). Policies concerning the scheduling of lessons, especially in English, represent institutional factors. Similarly, teacher cognition is also an impediment that does not play a leading role in overcoming social norms and cultural expectations in the teaching and learning process.

Classroom Management and Uneven Student Abilities

The presence of students with varying levels of proficiency within one teacher's classroom posed significant challenges for task design and pacing. Teachers did find it difficult to develop the HOTS-based activities that meet the needs of the advanced and the struggling learners at the same time. According to Rina,

"Today's class challenge was different students' abilities—some understand quickly, while others get stuck. Beyond expectations, I had to change my lesson plan, which was in PBL, and directly analyze the questions. I had to explain in advance the vocabulary that would appear to help them learn later." Journal excerpt, week 6 (Rina)

Pre-service teachers are expected to demonstrate astuteness in managing classroom situations where active learning occurs or situations that are not anticipated in advance. These findings distinguish this study from other research focused on heterogeneous classes, low English proficiency, and a tendency to emphasize lower-order thinking (Sigh et al., 2020; Zhou et al., 2023). Nonetheless, as Andi stated, the issue that may arise for a pre-service teacher teaching in a classroom for the first time is that classroom management is a crucial consideration.

"...when I teach a class with the children's abilities that are completely uneven, the lesson plans that I planned that focused on carrying out learning as planned did not work out, and I had to teach the basic material." Interview excerpt (Andi)

This mismatch in readiness highlights the importance of differentiation for HOTS in an EFL context, as cognitive capabilities and linguistic competence could be widely different (Puspitasari, 2025).

Critical Incidents: Breakthroughs and Turning Points

Even with the different challenges, there were some “critical incidents” for pre-service teachers. Such incidents were those where the teacher realized that the students could engage in HOTS. This was often when students were given a well-scaffolded task that was a little out of reach. As mentioned by them, these events were turning points in their understanding and confidence regarding HOTS implementation.

Topic Relevance and Student Engagement

Several respondents observed a marked increase in student engagement when the lesson content was personally or culturally relevant to them. For example, Dian recounted,

“...Students who were usually silent could actively present about their favorite foods....” Journal excerpt week 8 (Dian)

This statement confirms that improving the material related to their personal interests could engage them in the lesson. Sari shared a touching account:

“...A student made a touching greeting card for his sick friend—it showed deep thought...” Journal excerpt week 11 (Sari)

Different from Dian and Sari, Andi recounted a breakthrough when he shifted a descriptive text lesson from international tourist landmarks to the students' own vocational interests.

“I had seen that the type of text in books, especially about descriptive text, always has a broad theme, so to make students interested, sometimes I always change it to things they experience or nearby places such as Ciletuh Geopark and so on.” Interview excerpt (Andi)

These breakthroughs almost exclusively occurred when teachers abandoned generic textbook examples and anchored lessons in authentic, highly relevant local contexts. Rina documented a similar shift in her journal:

“Today was a turning point. Instead of the textbook roleplay, I asked them to evaluate the menu of a local café where they all hang out. Students who are usually completely silent were arguing (in mixed English and Indonesian) about pricing strategies and target markets. They actually can think critically if I stop making it solely about perfect grammar.” Journal Excerpt week 12 (Rina)

Unlike others, Maya sometimes improvises pedagogy in her learning by using basic words and an initial understanding of learning.

“...The main obstacle faced today is that I have to provide an initial understanding of the material, starting from basic words, basic grammar, or a more detailed explanation of today's material.” Journal excerpt week 5 (Maya)

According to Facione (2015), EFL learners can harness higher-order thinking skills through meaningful and authentic topics, even when language barriers may pose challenges. Nonetheless, the findings of the research offer a broader

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perspective by linking the subject or theme of the lesson with topics related to students' experiences, thereby enhancing student engagement and the implications for teaching HOTS. According to research conducted by Gordani (2010) and Gymfi et al. (2025), textbooks and other referenced materials tend to focus on low-level skills. While they do provide some examples involving HOTS-oriented activities, it is evident that integrating material relevant to students' experiences significantly facilitates HOTS learning.

These significant occurrences demonstrate the considerable influence of student agency and engagement when tasks are aligned with their lives and permit freedom of expression. The effective implementation of Higher-Order Thinking Skills (HOTS) is also contingent upon the collaborative effort of both teacher and student in co-constructing the learning process. In essence, it requires pedagogical approaches capable of fostering student agency and relevance, alongside the pedagogical skill of the educator.

Creative Responses and Improvisation

Other critical moments emerged during activities such as role plays and project-based learning (PBL), where students were allowed to improvise or add original ideas. Dian noted,

"...I gave a role play about asking and giving directions, and some students improvised by adding some demonstration and acting during the lesson..."
Journal excerpt week 10 (Dian)

The other participant explained differently. Rina found that the students in PBL creatively design the project.

"...one of the groups creatively designed their poster of global warming with some realistic ornament, the reason was to make it realistic and get attention from the audience to see..." *Journal excerpt week 8 (Rina)*

The findings show close correspondence with Role play, group projects, and problem-based learning practices, which provide students with higher-order thinking and make HOTS more accessible (Yigletu et al., 2023). Project-based learning, a kind of HOTS-oriented pedagogy, can develop HOTS even when language fluency is inadequate (Jonassen, 2010). These instances convinced the pre-service teachers that students were naturally capable of creativity and solving problems when provided with a suitable framework.

Reflection and Teacher Learning

The participants consistently described significant shifts in their perception of HOTS and their own teaching abilities over time, a process largely driven by their reflective practice. Initially, some held reservations about their students' capacity for HOTS. For example, Maya reflected,

"I used to think HOTS was too difficult for junior high students, but I was wrong..." *Interview excerpt (Maya)*

Likewise, Rina, who also underwent a practicum in junior high school, said,

"I used to see myself as a secular person since I taught English at the junior high school level, especially when focusing on HOTS. However, I discovered that with a bit of improvisation, I could handle the topic and related matters quite effectively." *Interview excerpt (Rina)*

This indicates that pre-service teachers' initial skepticism about students or their school level regarding HOTS implementation decreased as they became more open through improvising materials and enhancing their teaching skills. Another expressed a newfound belief:

"All students can be guided to think critically with the right examples..."
Interview excerpt (Maya)

According to Farrell (2022) and Cook (1993), critical incidents could be a source of development. Indicators of increased pedagogic confidence and a stronger belief in students' thinking abilities. The above reflections show this.

As a result of the reflective nature of the process, many participants decided to adapt their practice further by starting with clear modelling and visuals, using group work to scaffold difficult tasks, and giving students choice. Anyways, one of our participants discovered,

"Next time I'll use more visual texts before writing to stimulate ideas..."
Interview excerpt (Budi)

Furthermore, Dian had a different view about her teaching in week 14.

"The weekly test could be improved by including a variety of question types, not just multiple choice or descriptive questions, but also options like matching, randomizing, and more. This way, the test becomes more engaging and diverse for everyone." Journal excerpt week 14 (Dian)

This positions reflective practice not just as a beneficial activity, but as a causal mechanism for professional development in HOTS pedagogy. It suggests that structured, guided reflection is a central component of teacher education, directly leading to shifts in perception and the development of effective strategies.

Support and the Role of Mentors

Almost all participants highlighted the invaluable role of mentor teachers and peers as key sources of encouragement and practical support. Four participants highlighted the invaluable, supportive role of mentors. Rina noted in her interview,

"My mentor often gave me space to experiment. She sat in the back, let me fail, and then gave me useful feedback on how to scaffold the questions better." Interview excerpt (Rina)

Conversely, participants like Dian and Budi faced restrictive mentorship. Budi reflected in his journal:

"My mentor told me my lesson plan was too complicated and to just stick to the LKS (student worksheet). It's hard to practice HOTS when the senior teacher thinks it's a waste of time." Journal excerpt (Budi)

This highlights that pre-service teachers cannot implement HOTS in a vacuum; they require structural permission to experiment. The feedback and space to experiment provided by mentors were crucial in building their confidence and refining their HOTS implementation strategies. Andi stated,

"...The senior teacher gave me feedback, especially on how to suit my tempo, material, and code-switching in class. She gave me a description for every

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class, telling me what to pay attention to. That feedback made me more confident and braver to teach..." Journal excerpt week 4 (Andi)

This finding significantly reinforces the sociocultural perspective on teacher learning, emphasizing that teacher reflection and mentoring are vital components of professional development, and that the process of learning to teach is collaborative and supported. Gyamfi et al. (2025) states, "Mentors enhance pre-service teachers' confidence and competence in diverse classroom settings," which aligns with the findings of Ahmat et al. (2020), who further noted that mentors play a crucial role for pre-teachers.

Maya and Sari, unlike the others, did not get the intensive mentoring and were also allowed to teach.

"...The senior teacher gave me the freedom to teach, but sometimes this also made me confused about what to do, so I did more research on the internet or books..." Journal excerpt week 2 (Maya)

The findings indicate that guidance from mentors or supervisors is essential for pre-service teachers during their instructional process, particularly concerning the development of Higher-Order Thinking Skills (HOTS). According to Hamzah et al. (2022), as well as Albab et al. (2020), supervisors assist teachers in employing metacognitive strategies, which are crucial for the effective planning and evaluation of HOTS.

Emotional Dimensions of HOTS Teaching

One qualitative finding that emerged from the data was the participants' reflection on their feelings about teaching HOTS. It is noted that some described feeling proud when students demonstrated deep thinking, frustrated when they didn't or copied each other, and surprised by a breakthrough. Their identity as developing educators was impacted tremendously by these emotional reactions, as was their motivation. Their reflective journals offered a safe space allowing them to reflect upon and organize feelings of inadequacy, vulnerability, and pride. Maya's Week 4 journal captured the vulnerability of a not-so-successful HOTS lesson.

"I felt like a complete failure today. I gave them an open-ended project, and instead of being creative, three groups just copied each other's work from Google. I was so disappointed, not just in them, but in myself. It made me question if I am actually ready to be a teacher." Journal Excerpt (Maya)

Likewise, Budi felt frustrated when he saw the students' answers.

"I am sometimes confused about how else to explain to students their answers, which are always short without a clear explanation, even though I have given an example and elaborated..." Interview excerpt (Budi)

However, when breakthroughs occurred, the emotional reward was intensely validating. In his post-practicum interview, Andi stated,

"Seeing a student who usually sleeps in class make a complex, touching greeting card for his sick friend—it showed deep thought. It made me feel incredibly proud and excited to keep going. I realized I am not just teaching a language; I am teaching them how to think." Interview Excerpt (Andi)

Moreover, Dian experienced things that made her feel satisfied with the work of her students. As stated in her week 5 journal.

"Today, after several meetings, I feel very satisfied with their reading test scores, especially the description section that answers clearly and critically related to the questions...." Journal excerpt (Dian)

In essence, the narrative indicates that HOTS integration transcends mere instructional activity; it is an emotional experience that influences identity formation. Maya and Budi encounter frustration and self-doubt—a common reaction when abandoning basic, low-level strategies. However, the experiences of Andi and Dian demonstrate that this cognitive dissonance can also lead to considerable professional affirmation. These occurrences not only foster confidence but also transform the perception of pre-service teachers from simple language instructors to proficient facilitators of critical thinking. Consequently, this emotional journey underscores the necessity for teacher education programs to provide opportunities for teachers to process setbacks and emotional challenges, beyond merely refining pedagogical techniques. Such narrative accounts strongly imply that teaching HOTS encompasses not only technical and cognitive dimensions but also emotional and ethical considerations, as teachers confront student resistance, celebrate breakthroughs, and grapple with self-doubt (Barkhuizen, 2016; Riessman, 2008). Therefore, cognitive training must be supplemented with emotional resilience and self-efficacy development, which are vital for teacher identity formation and motivation.

Future Commitment and Development

All participants expressed a strong desire to continue developing their HOTS teaching capabilities. This commitment manifested in intentions to pursue further training, engage in peer collaboration, and experiment with innovative digital or project-based tools. For example, Andi expressed a desire,

"... next session will be focused on integrating digital tools like exploring blogs and video diaries to make recounts more engaging." Journal excerpt week 15 (Andi)

while Budi planned to learn more about HOTS lesson plans and visual media, as he stated,

"I feel truly satisfied when I see students actively engaging in class. That's why, when I become a teacher, prioritizing HOTS will be my main focus in teaching." Interview excerpt (Budi)

As their responses demonstrate, they possess a strong sense of professional agency and dedication to lifelong learning, aligning with the scholarly literature on teachers' identity development (Beauchamp & Thomas, 2009). In engaging with this reflective process, pre-service teachers encounter emotional challenges, such as the "emotional flux" experienced during teaching practicum. Teachers' emotional reflections are interconnected with identity development, subsequently influencing their roles in response to recognition and progression within teaching environments (Teng, 2017). Moreover, Dian indicates that this issue compels her to enhance her skills and knowledge, particularly in the implementation of Higher-Order Thinking Skills (HOTS).

"...with various demands placed on me, this is a spur for me to develop my skills both in teaching and more knowledge about the implementation of HOTS in learning..." Journal excerpt week 19 (Dian)

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This finding confirms that pre-service teachers frequently encounter work-related pressures, including high expectations and public scrutiny, which complicate their identity development. This reflective journal facilitated their processing of these challenges but necessitates structured support (Kettunen & Lutovac, 2026).

In conclusion, the findings of this narrative inquiry reveal that, while pre-service English teachers enter their practicum with a strong theoretical understanding of Higher Order Thinking Skills (HOTS), their operational capacity is fundamentally constructed and deepened through actual classroom experience. Throughout this journey, participants consistently encountered multi-layered obstacles, including students' limited English vocabulary, uneven language proficiency, and rigid systemic constraints such as dense curricula and examination pressures. Despite these barriers, critical breakthrough moments emerged when teachers departed from generic textbook materials to anchor lessons in highly relevant, localized contexts. By leveraging scaffolded, authentic tasks and active pedagogies like problem-based learning, the pre-service teachers successfully unlocked student agency, proving that linguistic limitations do not preclude critical thinking when the material is made personally meaningful.

Beyond the technical execution of lesson plans, this study underscores that implementing HOTS is an inherently emotional and identity-shaping process. The journey was marked by a complex emotional spectrum, where initial feelings of self-doubt and frustration regarding student passivity ultimately gave way to professional pride and validation during creative breakthroughs. Structured reflective practices and supportive mentorship served as the primary causal mechanisms for growth, transforming these emotional fluctuations into pedagogical confidence and shifting the participants' professional identity from mere language instructors to expert facilitators of critical thought. Ultimately, the pre-service teachers' sustained future commitment highlights a resilient sense of professional agency, signaling that teacher education programs must look beyond technical methodologies to actively cultivate the emotional resilience and structural support required for real-world classroom transformation.

CONCLUSION

The study constitutes a narrative inquiry aimed at comprehending the experiences of pre-service English as a Foreign Language (EFL) teachers in the application of Higher Order Thinking Skills (HOTS) during their teaching practice. Moving beyond static, quantitative assessments of pedagogical barriers, the research explicitly endeavors to address the formulated research questions by documenting the actual dynamic, emotional, and contextual realities experienced by the pre-service teachers.

Regarding the first research question on how pre-service teachers narrate their experiences, the study found that implementing HOTS is not merely a cognitive or technical matter but an emotional and identity-forming journey. Theoretical knowledge (in college classes) and its practical application become conflicting experiences for pre-service teachers as they continue to negotiate

their professional identities in the classroom. With respect to the second research question on barriers and breakthroughs, the study shows that pre-service teachers face serious constraints at the systemic and linguistic levels. In particular, students' limited vocabulary, time constraints, and examination-oriented school cultures severely hinder multilingual practices in the teaching-learning process. These assessments of values and meanings are complex, but they are managed pedagogically by moving away from generic textbook examples towards localised, culturally relevant topics, and emotionally through structured reflection and the necessary support from collaborative mentor teachers.

To effectively foster HOTS in EFL contexts, teacher education programs must shift from theoretical frameworks to contextualized, practical training that equips pre-service teachers with visual aids, bilingual scaffolding, and differentiated strategies tailored for lower-proficiency learners. This requires moving away from generic textbooks toward adaptive, localized curricula that trigger student engagement through personally relevant topics. Furthermore, because teaching higher-order thinking entails significant vulnerability, programs should institutionalize structured reflective practice (such as Gibbs' Reflective Cycle) as a vital tool for emotional regulation, allowing new teachers to safely process pedagogical failures and celebrate breakthroughs. Finally, universities must build tighter alignments with practicum schools to ensure mentor teachers support inquiry-based learning, thereby granting pre-service educators the structural freedom to experiment and innovate without the paralyzing pressure of high-stakes exam perfection.

The outcomes of this research may significantly impact education policy and practice. The qualitative nature of narrative inquiry, coupled with the limited sample size (n=6), renders the findings highly context-dependent. Consequently, these results are not generalizable to all pre-service teachers across different regions. Furthermore, the study was conducted within an English education department at an Indonesian university, thereby establishing a specific social and cultural setting. In conclusion, although interviews and journal entries were utilized through methodological triangulation, the data ultimately rely on self-reported narratives and subjective interpretations.

To extend the findings, longitudinal research could monitor these pre-service teachers through their initial years of full-time teaching to observe the evolution of their HOTS pedagogy and professional identities over an extended period. Additional comparative studies involving pre-service teachers from diverse institutional backgrounds or geographical regions could offer a deeper understanding of systemic constraints. It is ultimately recommended that classroom-based action research be employed to design, implement, and evaluate the direct impact of specific localized scaffolding techniques on the critical thinking skills of low-proficiency EFL learners.

AUTHOR STATEMENT

The sole author, **Handi Pabriana**, was responsible for the conceptualization, methodology, data collection, data analysis, writing the findings and discussion,

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and editing the manuscript based on the journal's guidelines and thoroughly proofreading all drafts of the article.

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