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Tracing Pre-Service Teachers' Research Literacy Across Coursework and Practicum: A Qualitative Case Study

Öğretmen Adaylarının Araştırma Okuryazarlığının Ders ve Öğretmenlik Uygulaması Süreçlerinde İzlenmesi: Nitel Bir Durum Çalışması

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Abstract: This qualitative case study explores the development of teacher research literacy among pre-service English language teachers in a Turkish university context. The study was conducted in a Faculty of Education and followed 26 third-year pre-service teachers (PSTs)during a research methods course (Phase I), along with a purposively selected subgroup of five PSTs in Phase II during their subsequent practicum (Phase II). Drawing on the Teacher Research Literacy (TRL) framework, data were collected through reflective journals, research artefacts, and practicum narratives, and analyzed using reflexive thematic analysis. Findings indicate that while PSTs developed foundational research knowledge and conceptual awareness during coursework, the transfer of this knowledge into practicum contexts was uneven and often limited. Participants consistently valued research at a conceptual level; however, its enactment was constrained by institutional expectations, time pressures, and the prioritization of teaching performance over inquiry-oriented practices. The study highlights the need for stronger integration between research-oriented coursework and school-based practice,emphasizing the importance of sustained, practice-based opportunities for developing research literacy in teacher education programs.

Keywords: research literacy, pre-service teachers, teacher education, practicum, research engagement

Öz: Bu nitel durum çalışması, Türkiye'de bir üniversite bağlamında İngilizce öğretmeni adaylarının araştırma okuryazarlığının nasıl geliştiğini incelemektedir. Çalışma, bir eğitim fakültesinde yürütülmüş olup araştırma yöntemleri dersini alan 26 üçüncü sınıf öğretmen adayını (Aşama I) ve öğretmenlik uygulaması sürecinde yer alan amaçlı örnekleme ile seçilmiş beş öğretmen adayını (Aşama II) kapsamaktadır. Öğretmen Araştırma Okuryazarlığı (Teacher Research Literacy – TRL) çerçevesine dayanan çalışmada veriler yansıtıcı günlükler, araştırma ürünleri ve uygulama sürecine ilişkin anlatılar aracılığıyla toplanmış ve yansıtıcı tematik analiz yöntemiyle çözümlenmiştir. Bulgular, öğretmen adaylarının ders sürecinde temel araştırma bilgisi ve kavramsal farkındalık geliştirdiklerini ancak bu bilginin öğretmenlik uygulaması bağlamına aktarımının sınırlı ve düzensiz olduğunu göstermektedir. Katılımcılar araştırmayı kavramsal düzeyde değerli bulmuşlardır fakat bu bilginin uygulamaya geçirilmesi kurumsal beklentiler, zaman baskısı ve öğretim performansının sorgulayıcı uygulamalara göre önceliklendirilmesi gibi etkenler tarafından kısıtlanmaktadır. Çalışma, öğretmen eğitimi programlarında araştırma odaklı dersler ile okul temelli uygulamalar arasında daha güçlü bir bütünleşmeye ihtiyaç olduğunu ortaya koymakta ve araştırma okuryazarlığının geliştirilmesi için uygulamaya dayalı, süreklilik gösteren öğrenme fırsatlarının önemini vurgulamaktadır.

Anahtar Kelimeler: Araştırma okuryazarlığı, öğretmen adayları, öğretmen eğitimi, öğretmenlik uygulaması, araştırma katılımı

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Introduction

Research engagement has gained importance in second language (L2) teacher education; however, pre-service teachers' (PSTs) experiences with research remain uneven, ambiguous, and frequently constrained by program structures and school realities (Borg, 2010; Consoli & Dikilitaş, 2021). Although research methodology courses and small-scale projects have become common features of teacher education programs, there is limited evidence regarding how these experiences shape PSTs' early understandings of teaching or contribute to their emerging professional identities (Guilfoyle et al., 2024; Smetana & Leong, 2026). Studies consistently report that PSTs often struggle to see the relevance of research for classroom practice, perceive inquiry tasks as disconnected from school realities, or regard research requirements as academic hurdles rather than opportunities for professional growth (Borg, 2019; Smith & Flores, 2019; van Katwijk et al., 2019). These findings point to the need for closer examination of how research-related learning unfolds during teacher preparation and how its influence is sustained, or diminished, once PSTs enter school placements (Amir et al., 2017; Guilbert et al., 2016).

In this study, we distinguish between several closely related constructs that are often used interchangeably in the literature. *Research literacy* refers to a developing capacity that integrates conceptual understanding (declarative knowledge), methodological competence (procedural skills), and dispositions toward inquiry, as conceptualized in the TRL framework (Kostoulas et al., 2025). *Research engagement* is used more broadly to describe participation in research-related activities and practices within teacher education (Borg, 2019). By contrast, *research-informed reasoning* refers to the extent to which teachers draw on research knowledge to interpret and justify pedagogical decisions (Tajeddin & Bolouri, 2023). In contrast, an *inquiry orientation* reflects a more general stance of questioning and problematizing classroom practice (Truxaw et al., 2011). In this paper, we use *research literacy* as the central construct, while the other terms are used to capture specific aspects of how this literacy is enacted or constrained across contexts.

The notion of teacher research literacy is also historically connected to earlier traditions of the *teacher-as-researcher*, most notably advanced by Stenhouse in 1975. (Steenhouse, 1975). This perspective positioned teachers as active inquirers

into their own practice, laying the groundwork for later developments in action research and practitioner inquiry. However, contemporary conceptualizations of research literacy extend beyond conducting research to include teachers' capacity to interpret, evaluate, and engage with research in context (e.g., Heikkilä & Eriksen, 2024; Kostoulas et al., 2025).

Recent studies increasingly challenge earlier views of research as a set of technical skills acquired during coursework (Contreras et al., 2025; Tatto, 2021; van Katwijk et al., 2019). However, this shift is neither uniform nor uncontested. Research engagement is still frequently treated as a set of technical skills acquired during coursework, rather than as a broader constellation of knowledge, practices, and orientations through which teachers come to understand themselves as professionals (Evans et al., 2017; Flores, 2020). From this perspective, participation in research is often described as opening space for PSTs to question taken-for-granted assumptions and to reconsider the pedagogical rationales guiding their decisions (Cian et al., 2017; van Katwijk et al., 2019). But, as several studies implicitly suggest (Flores, 2020; Taylor, 2017), such questioning remains uneven and highly sensitive to context (Contreras et al., 2025).

The transition from university coursework to the school-based practicum frequently disrupts these research-related understandings (Akyel, 2015). While coursework tends to legitimize inquiry and reflection, the practicum confronts PSTs with competing priorities such as curricular coverage, mentor expectations, and immediate demands of classroom management (Contreras et al., 2025; Flores, 2020; Trent, 2013). In such contexts, inquiry-oriented thinking is not necessarily rejected, but often considered as less urgent (Cian et al., 2017; Ulvik & Riese, 2016). Studies suggest that research engagement is developmental and context-dependent, shaped not only by PSTs' knowledge and attitudes but also by the conditions under which they attempt to enact research-informed reasoning during practicum (Bendtsen et al., 2021; Contreras et al., 2025; Schatz-Oppenheimer, 2017).

Despite calls for longitudinal research in this area (Contreras et al., 2025; Mayer, 2021), studies tracing PSTs across multiple stages of preparation remain limited (e.g., Guilbert et al., 2016; Martinovic &Dabaja, 2023; Zeivots et al., 2024).Much existing research examines perceptions immediately following a research course or project, offering little insight into how these understandings evolve as PSTs enter classrooms and encounter competing expectations (e.g.,Hulse & Hulme, 2012; McMahan & Garza, 2017; Trent, 2013). As a result, it remains unclear which aspects of research engagement endure beyond coursework, which diminish during practicum, and how these patterns intersect with emerging professional identity (Akyel, 2015).This uncertainty limits our understanding of how research literacy functions not as a static competence, but as a developmental process shaped by institutional conditions(Nadelson & Fannigan, 2014).

To address this gap, our study adopts a qualitative, two-phase case study design with a developmental focus following PSTs across two interconnected stages of teacher preparation within an English Language Teaching (ELT) program. Rather than examining research learning at a single point in time, the study traces how research literacy is recontextualized across a key transition from a university-based research course to a subsequent school-based practicum. Drawing on reflective journals, research artefacts, and practicum narratives, we traced how PSTs' understandings are recontextualized across settings, how they intersect with emerging teacher identities, and how contextual conditions shape the sustainability of research literacy. This gap is not only conceptual but also practical, as teacher education programs often assume that research competencies developed in coursework will naturally transfer to practicum settings. However, without understanding how this transfer occurs, or fails to occur, such assumptions remain unexamined.

By grounding our analysis in studies on research engagement and adopting the Teacher Research Literacy (TRL) (Kostoulas et al., 2025) as its conceptual framework, the study positions research not merely as a methodological requirement but as a meaningful dimension of early professional development. The findings aim to inform program design by identifying which elements of research learning are most likely to support long-term engagement and which require structural or pedagogical adjustments to endure through the practicum and beyond. This study addresses the following research questions:

1. How is PSTs' research literacy recontextualized across a university-based research course and a subsequent school-based practicum in an ELT program?
    a. In what ways do PSTs' declarative knowledge, procedural skills, and research dispositions evolve during the third-year academic writing and research course?
    b. How are these components adopted, adapted, or limited during the practicum, and what contextual conditions influence their sustainability?

Literature Review

Research Engagement in L2 Teacher Education

Existing research has predominantly highlighted research engagement as a marker of teacher professionalism and evidence-informed practice (Borg, 2010; Cordingley, 2015). However, this perspective tends to emphasize outcomes rather than the processes through which teachers come to engage with research, particularly across different phases of teacher education. On the other hand, a substantial body of research suggests that PSTs enter the profession with limited confidence, a tendency, or a perceived need to draw on research in their everyday teaching (e.g., Bendtsen et al., 2021;van Katwijk et al., 2022). This tension has caused researchers to reconsider not only how research is taught, but how it is experienced and interpreted by PSTs (Cian et al., 2017).

Rather than treating research engagement as the acquisition of methodological competence alone, recent studies increasingly conceptualize it as a multifaceted phenomenon involving knowledge, practices, values, and orientations toward inquiry (Tatto, 2021; Trent, 2013). This shift reflects growing recognition that the central issue is not whether PSTs can technically conduct research, but how they make sense of research and whether they come to see it as meaningful within their developing professional identities (Cian et al., 2017).

Several studies have emphasized that both individual and contextual factors shape research engagement. Evans et al. (2017), for instance, demonstrated that initial teacher education often imposes research requirements without sufficient attention to helping prospective teachers understand why inquiry matters or how it connects to teaching practice. As a result, PSTs may comply with research tasks while remaining distanced from the underlying purposes of inquiry (Akyel, 2015; Guilbert et al., 2016). These findings suggest that research engagement cannot be understood as an outcome

of coursework alone but must instead be considered a developmental process shaped over time and across various contexts.

Research Learning in Coursework

For most PSTs, university-based courses constitute their first encounter with educational research (Escalié et al., 2023). Such courses typically combine instruction in research methods with small-scale inquiry projects, reflective writing, and guided reading of empirical literature (Guilbert et al., 2016; Amir et al., 2017). While such designs offer structured opportunities to practice inquiry, the literature reports that PSTs experience these courses as demanding and disorienting (Aspfors & Eklund, 2017;Escalié et al., 2023; van Katwijk et al., 2019). Difficulties often arise around unfamiliar terminology, methodological decisions, and the cognitive demands of academic writing. Most importantly, these challenges are not only technical. They frequently reflect deeper uncertainty about how research relates to teaching and whether inquiry has a legitimate place in everyday classroom practice (Strat et al., 2024). In response, many programs incorporate reflective activities to help PSTs articulate their developing understandings and navigate emerging tensions between theory and practice (Ceylan & Çomoğlu, 2022; Flores, 2020). Research has suggested that such reflection can support PSTs in making tentative decisions between research tasks and their emerging teacher identities (Contreras et al., 2025; Taylor, 2017). However, studies also indicate that the influence of coursework-based research experiences is not guaranteed (Eklund, 2018). Without opportunities to apply research thinking in practice, early gains in understanding may remain superficial or diminish over time (Cian et al., 2017).

Research Engagement During Practicum

The school-based practicum is widely recognized as a critical phase for PST learning, but it can also disrupt or constrain research engagement (Akyel, 2015). While coursework may legitimize inquiry and reflection, the practicum confronts PSTs with a different set of priorities, including classroom management, curriculum delivery, and mentor expectations. In such contexts, inquiry-oriented thinking is not necessarily rejected, but it is often viewed as less urgent or less feasible (Fazio et al., 2010; Schroeder, 2020).

Mentor teachers play a particularly influential role in shaping whether PSTs feel permitted or supported to draw on research during practicum (Kang, 2021). When mentors model reflective, inquiry-informed practice, PSTs may find opportunities to sustain research-related habits developed during coursework. Conversely, when mentors have limited experience with research, PSTs may abandon the research-related habits they developed in coursework (Cian et al., 2017). In addition, practicum demands such as time pressure, emotional labor, and the perceived risks related to deviating from school norms can further constrain experimentation and reflection (Ulvik & Riese, 2016).

Studies adopting a sociocultural lens suggest that the social dynamics of the practicum are decisive in determining whether research learning endures or diminishes (Bendtsen et al., 2021; Schatz-Oppenheimer, 2017). When PSTs perceive research as misaligned with school norms or evaluation criteria, they may strategically disengage from research-related practices.

While a substantial body of research has examined PSTs' engagement with research within university-based courses, this work has largely conceptualized research learning as situated within academic settings (Borg, 2010; Akyel, 2015). In parallel, research on practicum has emphasized contextual constraints such as mentor support, school culture, and time limitations (Kang, 2021; Salerno & Kibler, 2015). However, these two strands remain insufficiently connected. In particular, little is known about how research-related knowledge, skills, and dispositions developed in coursework are adopted, sustained, or transformed during the practicum. This disconnection points to a critical gap in understanding the continuity between university-based learning and school-based practice.

Despite the growing interest in research engagement (Borg, 2019; Contreras et al., 2025), studies often employ cross-sectional designs, capturing PSTs' experiences at a single point in time. Much of the existing research focuses on perceptions immediately following a research course or after an inquiry project (Hulse & Hulme, 2012; McMahan & Garza, 2017; Nguyen et al., 2022; van Katwijk et al., 2022). As a result, the processes through which research learning evolves across the transition from coursework to practicum remain underexplored. Although recent calls have emphasized the value of longitudinal approaches in examining the duration of research learning (Contreras et al., 2025; Mayer, 2021), there is also a need for context-sensitive, qualitative investigations that trace how such learning is adapted or recontextualized across different phases of teacher education. Addressing this gap, the present study adopts a two-phase qualitative case study design to examine how PSTs' research literacy is developed during coursework and subsequently engaged with in practicum settings.

Conceptual Framework

The study is informed by the TRL framework proposed by Kostoulas et al. (2025), which offers a structured but flexible account of knowledge, skills, attitudes, and contextual conditions shaping teachers' engagement with research. The framework addresses longstanding concerns that research in L2 teacher education is often presented as an isolated academic requirement, insufficiently connected to the realities of teaching practice (Nguyen et al., 2022; Salerno & Kibler, 2015). Rather than treating research literacy as a transferable set of techniques, the TRL framework conceptualizes engagement with research as a developmental and ecological process shaped by interactions between individuals and contexts (Evans et al., 2017; Kostoulas et al., 2025). For analytical purposes, our study works with four interrelated dimensions: declarative knowledge, procedural skills, research dispositions, and contextual capacity.

Declarative knowledge refers to PSTs' conceptual understanding of research, involving its terminology, methodological principles, and epistemological assumptions (Stürmer et al., 2013). While this dimension enables PSTs to interpret empirical studies and situate inquiry within broader traditions. It is often experienced as abstract or disconnected from teaching (Guilfoyle et al., 2024).

Procedural skills concern PSTs' capacity to design and conduct small-scale research, including formulating research questions, selecting methods, analyzing data, and reporting findings. As Kostoulas et al. (2025) note, these skills develop through guided practice rather than exposure and are typically foregrounded in second or third-year research courses within ELT programs (Akyel, 2015).

Research dispositions capture PSTs' orientations toward research, including whether research is perceived as useful, feasible, or relevant to everyday teaching. Prior studies indicated that dispositions are sensitive to contextual shifts and

may be easily disrupted during practicum, when PSTs encounter the pressures and expectations of the practicum (Akyel, 2015; Gillett-Swan & Grant-Smith, 2017).

Finally, contextual capacity highlights the institutional conditions that enable or constrain research engagement, such as mentor support, school culture, time availability, and alignment between university coursework and school practices. Without sufficient contextual capacity, the cognitive and dispositional dimensions of research literacy often remain theoretical and difficult to enact in classroom settings (Kostoulas et al., 2025)

These four dimensions provide an integrated framework for examining how PSTs' research literacy develops during coursework and how it is subsequently interpreted, reshaped, or constrained during the practicum. In our study, the TRL framework is intended to support longitudinal qualitative analysis rather than to rework the framework itself.

Methods

Research Design

This study is designed as a single, embedded qualitative case study focusing on a cohort of pre-service English language teachers within a state university ELT program in Türkiye. The case is bounded by (a) a specific institutional context, (b) a defined cohort of participants, and (c) two consecutive phases of teacher education: a third-year research methods course and a fourth-year practicum. A case study design was appropriate because the study aims to provide an in-depth, contextually grounded understanding of how research literacy is developed and enacted within a real-life educational setting (Merriam, 2009; Yin, 2018). We were particularly interested in following the *same cohort across time*, rather than capturing perceptions at a single instructional moment. This decision was informed by repeated observations in the literature that cross-sectional designs tend to overestimate the stability of research learning and underplay the influence of school-based contexts (Contreras et al., 2025; Mayer, 2021).

The design was guided by the TRL framework, focusing on four interrelated dimensions: declarative knowledge, procedural knowledge, dispositions, and contextual capacity (Kostoulas et al., 2025), and sought to trace changes in these dimensions across two consequential stages of teacher preparation. A qualitative case study was therefore chosen as it allowed us to examine not only what PSTs learned, but whether and how this learning remained meaningful when they entered school settings.

Context and Participants

The study was conducted in apre-service language teacher education program at a public university in Türkiye. In the third year of the program, PSTs complete an *Academic Writing and Research* course designed to introduce research concepts, support the development of basic methodological skills, and guide students through a small empirical project.

In the Turkish teacher education system, pre-service teachers complete two consecutive practicum courses (typically Practicum I and Practicum II) in their final (fourth) year, which are structured to support a gradual transition from observation to active teaching. These school-based experiences are crucial in bridging the gap between theoretical coursework and classroom practice. In this study, Phase II encompassed both practicum courses, allowing for a more in-depth examination of how participants engaged with and attempted to apply their research literacy in real classroom settings over time.

Phase I of our study included all 26 PSTs enrolled in the third-year research course. As part of the course requirements, these students produced reflective journals and a range of research artefacts documenting their engagement with the research process. Phase II followed a purposively selected subgroup of five PSTs into their practicum placements. Despite being small, this subgroup was selected to provide in-depth and contextually rich insights into how PSTs navigated the demands of school environments and whether earlier research learning was sustained, adapted, or set aside.

Data Sources

We drew on three complementary data sources, each selected to capture different dimensions of research literacy. During Phase I, PSTs completed structured reflections at key stages of their research projects (topic selection, literature review, methodology planning, data analysis, and reporting). These reflections provided insight into the development of declarative knowledge, procedural understanding, and emerging research dispositions.

Research artefacts were the secondary data source of our study. These included research proposals, literature review drafts, and final reports produced during the course. Analyzing these artefacts allowed us to examine how PSTs articulated research concepts, justified methodological choices, and attempted to connect research with pedagogical concerns.

In Phase II, we collected weekly practicum narratives from the five participants. In these narratives, students wrote about their teaching experiences, challenges, and reflections. These narratives were used to explore how research literacy was enacted or constrained in school settings and to identify contextual factors that shaped the sustainability of research engagement.

Data Collection Procedures

Data collection took place over three consecutive academic semesters spanning the third- and fourth-year components of the program. In Phase I, reflective journals were submitted at five intervals aligned with major stages of the research course. Research artefacts were collected at the end of the semester, following standard course submission procedures. The Phase I course was structured around key topics in educational research, including:

- Introduction to research concepts and terminology
- Qualitative and quantitative research approaches
- Identifying research topics and formulating research questions
- Conducting literature reviews
- Writing abstracts and research reports
- Introduction to data collection and analysis methods

Throughout the course, students engaged in small-scale research tasks and maintained reflective journals. More specifically, reflective journals were guided by prompts that encouraged PSTs to engage with key aspects of the research process, such as identifying potential research topics, reflecting on the relevance of selected literature, evaluating the clarity of research questions, and considering possible applications to classroom contexts. Students were also invited to critically reflect on challenges encountered during each stage of the research process and to articulate their evolving understanding of research concepts.

Journal entries were reviewed as part of the course assessment using a rubric that emphasized depth of reflection, engagement with research concepts, and the ability to connect theoretical knowledge with pedagogical concerns. The evaluation was primarily formative, aiming to support students' developing research awareness rather than to assess research competence per se.

In Phase II, a purposively selected subgroup of five PSTs was followed during their practicum. Unlike Phase I, this phase did not require students to conduct a full research project. Instead, participants were asked to maintain reflective journals documenting their classroom experiences, instructional decisions, and observations of school practices in Practicum I and II. They were encouraged to draw, where possible, on concepts from the research methods course (e.g., identifying classroom issues, reflecting on instructional effectiveness, or considering learner responses). However, engagement with research was not formally required as part of the practicum assessment, which primarily focused on teaching performance. These reflections were not structured as research reports but as practice-oriented accounts, allowing the study to examine whether and how previously developed research literacy was adapted, or set aside in authentic classroom contexts. This design allowed the study to capture the extent to which research-related knowledge was spontaneously mobilized in practice, rather than prompted through structured research tasks.

The expectations across the two phases were intentionally differentiated. In Phase I, PSTs were required to engage in research-oriented tasks, including selecting a topic and producing a short academic paper grounded in a literature review. This phase focused on developing their understanding of research processes in a structured, university-based context. In contrast, Phase II did not involve writing a formal research paper. Instead, PSTs were asked to keep reflective journals in which they documented their classroom experiences, observations, and emerging insights during the practicum. These journals served as a means of capturing how (or whether) their prior research-related learning informed their pedagogical thinking and practices.

All participants provided informed written consent, and ethical approval was obtained from the university's research ethics committee before data collection. Before data collection began, participants were informed about the purpose of the study, the voluntary nature of their participation, and their right to withdraw at any time without penalty. They were also assured that their participation or withdrawal would not affect their course assessment.

Data Analysis

Data was analyzed using reflexive thematic analysis, following the six-phase approach outlined by Braun & Clarke (2006, 2021). This approach was selected for its flexibility and its emphasis on exploring patterns of meaning while remaining attentive to participants' meaning-making processes.

This approach was particularly suitable for examining how PSTs' research literacy developed and was recontextualized across phases.

Analysis began with familiarization, during which practicum narratives, reflective journals, and research artefacts were read multiple times. Attention was given not only to what participants said but also to how they articulated their understanding of research in relation to practice. Initial observations were noted, with attention to how PSTs articulated their understanding of research in relation to practice. In the second phase, initial codes were generated inductively across the dataset. Coding focused on meaningful segments related to declarative knowledge, procedural skills, and research dispositions, as well as instances reflecting continuity, change, or tension between coursework and practicum experiences. The third phase involved searching for themes, where codes were examined for patterns and grouped into broader candidate themes that captured shared meanings across participants and data sources. In the fourth phase, reviewing themes, these candidate themes were refined through an iterative process of comparison across Phase I and Phase II data. This step ensured that themes were coherent, internally consistent, and meaningfully distinct from one another. The fifth phase, defining and naming themes, involved further refinement to clearly articulate the scope and focus of each theme, particularly in relation to how research literacy was developed and recontextualized across contexts. Finally, in the sixth phase, producing the report, themes were organized into a coherent analytical narrative, supported by representative data extracts from across participants and phases.

To enhance trustworthiness, a colleague familiar with the study's aims and qualitative approach independently coded a subset of the data (approximately 25–30%). Any differences in coding were discussed and resolved through dialogue, leading to further refinement of the coding framework. In addition, member checking was carried out by sharing interpretive summaries with participants during Phase II to ensure that the emerging interpretations resonated with their experiences.

Throughout the process, the researchers engaged in ongoing reflexivity, reflecting on their dual roles as instructors and researchers and how this positioning might shape both data collection and interpretation. While this familiarity provided valuable contextual insight, it may also have influenced how participants represented their experiences, particularly in ways that aligned with perceived expectations (Nduna, 2020).

Findings

Phase I – Coursework Year: Developing Initial Research Literacy

Strengthening Declarative Research Knowledge

During the research course, most PSTs reported noticeable gains, mainly in *conceptual* aspects of research literacy. Students described improved understanding of how research topics are defined, how literature is reviewed, and how research questions are formulated. Many explicitly referred to becoming more aware of "*how academic knowledge is produced*" (PST-05, coursework reflection), emphasizing familiarity with the structure of empirical studies, the function of literature reviews, and the basic logic of research design.

Several participants (e.g., PST-03, PST-07, PST-15) highlighted that engaging with published studies played a central role in this shift. As one PST reflected, *"Before this course, I was just reading articles to find activities. Now I understand why they structure the study like that, how the problem is defined, and what counts as evidence"* (PST-07, coursework reflection). Similarly, another participant noted that *"reading articles with a different perspective made me realize how research is actually built step by step"* (PST-08, coursework reflection).

Moreover, a smaller group of participants (n=6) problematized the depth of this learning, emphasizing that their understanding remained largely conceptual rather than

procedural. As one student explained, *"I know the names of the parts and what they mean but knowing them does not mean I can really do research alone yet"* (PST-12, coursework reflection). This tension was shared by others who expressed uncertainty about applying this knowledge independently despite being able to describe research processes confidently.

These accounts indicate that the course effectively supported the declarative layer of research literacy, an early stage in Kostoulas et al.'s (2025) model. Indeed, many participants used confident, formulaic expressions such as *"I can conduct a literature review"* (PST-11), *"I can develop a research question"* (PST-02), and *"I learned how to narrow down a topic"* (PST-23). At the same time, these statements revealed a tension between being able to describe research processes and being able to enact them independently.

Furthermore, several participants (n=8) explicitly noted that declarative knowledge alone does not constitute research competence. They emphasized that more complex processes, such as identifying an original topic or formulating a researchable question, "*depend on prior academic reading*" (PST-19) rather than short-term instruction. In this sense, declarative knowledge was consistently seen as necessary but insufficient for deeper forms of research engagement.

Emerging But Uneven Procedural Knowledge

In contrast to their confidence in conceptual understanding, participants expressed greater uncertainty about procedural aspects of research. Tasks such as tool development, data collection, and data analysis were commonly described as "*possible but challenging*" (PST-10), especially when access to participants or technical expertise (e.g., SPSS) was required. While students could outline procedural steps, they reported limited opportunities to practice them in authentic settings.

While students could describe research procedures, many expressed uncertainties about enacting them independently. As one participant noted, *"On paper I know the steps, but when it came to collecting data, everything depended on access. If you cannot reach participants, the method stays theoretical"* (PST-04, coursework reflection). Another student highlighted difficulties with interpretation rather than technique, *"Using SPSS was not the hardest part. The difficult part was deciding what the results really mean and how to write that academically"* (PST-09, coursework reflection).

As one student noted, *"Accessing data depends on the topic… if access is easy, I can do it,"* (PST-05, coursework reflection), indicating procedural confidence was conditional. Another explained that although she could analyze data in principle, she struggled with "*formulating conclusions*" because the course did not sufficiently emphasize interpretation. Overall, their reflections indicated procedural knowledge remained fragmented, reflecting early-stage procedural literacy rather than integrated research practice.

Dispositions Toward Research: Positive But Anxious

Students generally expressed positive attitudes toward research, associating it with professional growth, curriculum development, and long-term problem solving in L2 education. Many described the course as "*eye-opening*" (PST-06), helping them appreciate "*the seriousness of the teaching profession*" (PST-17) and the research foundation of language teaching methods.

At the same time, these positive dispositions were accompanied by anxiety. Research was perceived as intellectually valuable but demanding, requiring extensive reading, time, and academic maturity. Several participants anticipated a mismatch between research work and the realities of school life, a concern foreshadowing later practicum experiences. Thus, while the coursework fostered favorable dispositions toward research, these were fragile and context-dependent.

Although participants frequently described research as valuable, their reflections revealed emotional ambivalence. One PST explained, *"I started to respect research more, but at the same time it made me anxious. It feels like something that requires a different level of maturity"* (PST-15, coursework reflection). Several students anticipated future tension between research and teaching: *"I can see how research improves teaching, but I am not sure if school conditions will allow this kind of thinking"* (PST-02, coursework reflection).

Phase II – Practicum Year: Research Literacy in Action

Phase II provided an opportunity to examine whether students' coursework-based research literacy informed their teaching practice during their school placements. Their reflections reveal a sharp contrast between retaining research concepts and using them in pedagogical decision-making.

Limited Transfer of Declarative Knowledge

Across the practicum period, all five participants reported that some conceptual knowledge, particularly ideas encountered during the literature review, continued to shape their instructional thinking in limited and indirect ways. The most consistent example involved the use of communicative activities such as pair and group work.

Most participants linked their use of such activities to prior exposure to research-informed discussions during the coursework phase. For instance, one participant explained, *"When I planned pair work, I remembered what I read about interaction. But after that, I did not really think in research terms anymore"* (PST-01, practicum narrative, Week 4). Similarly, PST-05 noted that while research readings initially influenced lesson planning, these connections quickly faded during classroom implementation, where immediate teaching demands took priority.

However, despite these partial connections, explicit engagement with research concepts remained largely absent across all participants. Participants consistently reported that they did not draw on formal research terminology or frameworks when reflecting on their teaching or making in-the-moment decisions. As one PST stated, *"In the classroom, I never thought about things like validity or research questions. I was just trying to finish the lesson"* (PST-05, practicum narrative, Week 7). This sentiment was shared across the dataset, with participants emphasizing the dominance of practical concerns such as classroom management, timing, and lesson completion.

Moreover, none of the participants systematically referred to their research concepts, including research questions, reliability, validity, or research design, when analyzing classroom events or evaluating their instructional choices. Declarative knowledge persisted, but its use was highly limited to familiar pedagogical concepts identified during coursework.

Constraints in Theorizing for Practice

From a TRL perspective, the practicum constrained theorizing for practice more strongly than procedural skill development. Classroom challenges were seen mainly as managerial or curricular issues, rather than as problems open to research. Participants repeatedly stated that the research course had not

prepared them to identify classroom problems or use research processes to interpret teaching situations.

Participants repeatedly emphasized that classroom problems were not framed as inquiry opportunities. As one PST reflected, *"We were not trained to see classroom issues as research problems. So, when something went wrong, I just followed what my mentor suggested"* (PST-03, practicum narrative, Week 6). Another participant linked this to the product-oriented nature of the earlier course: *"In the research course, the goal was to finish the paper. In the practicum, there is no space to ask 'why'"* (PST-04, practicum narrative, Week 8).

Several students explained that the research course focused on completing an academic product rather than on using research to support pedagogical reasoning. As one student put it, *"We didn't work on finding solutions to classroom problems, so research had no impact."* This indicates that procedural research literacy remained context-bound and was not activated "*in the moment*" during real-time teaching.

Divergent Dispositions: Valuing Research, But Not as Teacher-Research

Despite the limited transfer of research literacy into practice, all participants (n=5) continued to express positive dispositions toward research at a conceptual level. They consistently associated research with "*intellectual growth*" (PST-03), "*educational improvement*" (PST-01), "*professional identity (visionary teacher*)" (PST-03), and "*academic career aspirations*" (PST-05). Some of them also linked research engagement to long-term goals such as pursuing post-graduate study or an academic career.

However, these positive orientations coexisted with a clear perception that research was not a realistic or expected component of everyday teaching practice. Most participants highlighted research as soothing external to school-based work, positioning it as *"something for graduate studies*" (PST-05) rather than for addressing classroom challenges. As one participant explained, "*Research is important, but I see it more for graduate study. As a teacher, you are expected to manage the class, not investigate it*" (PST-02, practicum narrative, Week 10).

This perception contributed to a perceived divide between academic and practitioner identities. Three participants explicitly described a shift in how they positioned themselves across contexts. As one PST reflected, *"At university, I felt like a researcher. At school, I felt like an assistant teacher who should not question too much"* (PST-01, practicum narrative, Week 11). Others similarly emphasized that the practicum environment prioritized lesson delivery and classroom management over inquiry or critical reflection.

Participants repeatedly attributed this disconnect not to a lack of interest, but to structural and contextual constraints. One participant explicitly described the absence of space for inquiry, stating that research *"had no impact"* because the practicum context did not allow for problem-oriented investigation (PST-02, practicum narrative, Week 2). All participants referred to factors such as time pressure, heavy workload, limited autonomy in practicum schools, and the absence of institutional support for inquiry-oriented practices. In addition, four participants highlighted program-level issues, including the short duration of the research course, limited opportunities to engage with real classroom data, and the lack of explicit integration between research coursework and practicum experiences.

In response, participants proposed more integrated and sustained models of research engagement. Three participants recommended a two-semester structure, where theoretical foundations are introduced in the first term and followed by classroom-based inquiry aligned with practicum in the second. These suggestions point to a shared understanding that developing research literacy requires ongoing, practice-based engagement rather than being confined to a single course. As PST-04 (practicum narrative) reflected, "*I realized that just learning the theory is not enough. We need to try it in real teaching situations to understand how it works*."

Discussion

This study examined how PSTs develop and sustain research literacy as they move from a university-based research course into the school-based practicum. Guided by the TRL framework (Kostoulas et al., 2025), our findings show that research literacy is developmental, uneven and strongly context-dependent, rather than a stable, fixed competence that transfers automatically across settings. While coursework supported noticeable growth in PSTs' declarative knowledge and procedural skills, the practicum revealed the fragility of these gains and highlighted the decisive impact of school-based conditions on research engagement. (Stürmer et al., 2013).

From the TRL perspective, the findings engagement with research is shaped not only by what PSTs know or can do, but also by whether inquiry is recognized as legitimate within particular institutional contexts (Evans et al., 2017). In this sense, the practicum functioned as a critical testing site where earlier research learning was selectively retained, reshaped, or declined.

Research Learning During Coursework

Consistent with prior studies (Guilbert et al., 2016; Escalié et al., 2023), our data showed that the research course enabled PSTs to develop foundational declarative knowledge. Students demonstrated increased ability to distinguish research approaches, understand basic design principles, and express a researchable problem. Similar gains have been widely reported in L2 teacher education, where courses often represent PSTs' first encounter with empirical inquiry (Aspfors & Eklund, 2017; van Katwijk et al., 2019).

However, as documented in earlier research, cognitive and procedural gains did not translate automatically into stable research dispositions students' dispositions toward research (Akyel, 2015; Evans et al., 2017). Many PSTs expressed uncertainty, anxiety, or a sense that research remained an abstract academic exercise rather than a practical professional resource. This is consistent with longstanding concerns about the "research-practice gap" in teacher education (Borg, 2010, 2019). Notably, students often attributed their difficulties to translating abstract methodological concepts into meaningful decisions, particularly in the absence of concrete exemplars or modelling (Guilbert et al., 2016; Strat et al., 2024).

These findings suggest that while coursework successfully established cognitive foundations for research literacy, dispositional development remained tentative. Within the TRL framework, this indicates that declarative and procedural dimensions were emerging, but the conditions necessary for stabilizing a research-oriented stance were only partially in place.

Research Literacy During the Practicum

The practicum made the limits of research learning more visible. Consistent with earlier studies (Trent, 2013; Flores, 2020), most PSTs reported that research played little role in their daily teaching. Although some PSTs could refer to isolated instances where research-informed activity choices were used, research was rarely used to identify classroom problems or guide pedagogical decision-making.

Importantly, this lack of application was not linked to misunderstanding or rejection of research. Instead, PSTs described a range of contextual constraints, including time pressure, rigid curricular structures, mentor authority, and evaluation-related concerns. These factors have been widely documented as limiting research-oriented engagement during practicum (Bendtsen et al., 2021; Ulvik &Riese, 2016). As one student noted, research "*had no impact*" (PST-02) because the practicum offered no space for problem-oriented inquiry.

Mentor teachers played a particularly influential role. Consistent with earlier findings, mentors functioned as gatekeepers of practice, shaping what forms of reasoning were seen as appropriate or desirable (Cian et al., 2017; Kang, 2021). When mentors did not model or value research-informed thinking, PSTs quickly adapted to a more compliance-oriented stance. This supports TRL's emphasis on contextual capacity as a necessary condition for enacting research literacy (Kostoulas et al., 2025).

Interestingly, when research learning was retained, it was more often declarative than procedural. Some PSTs drew on ideas encountered during the literature review, for example, to justify communicative activities, but few attempted to mobilize research methods or research cycles. This pattern aligns with previous claims that conceptual knowledge is more durable than research skills during transitions into school practice (Guilbert et al., 2016; Salerno & Kibler, 2015).

Teacher Identity and Research Engagement

The findings also revealed how PSTs position themselves in relation to research. Consistent with Phase II, all participants expressed positive orientations toward the value of research, even though this did not translate into classroom practice. Rather than rejecting research, participants viewed research as important "in principle," but difficult to enact as novice teachers within the constraints of practicum settings (Borg, 2019; Smith & Flores, 2019).

At the same time, several PSTs described feeling more "professional" as a result of engaging in research coursework, echoing Flores's (2020) argument that research can contribute to early professional identity formation. However, without opportunities to enact research during practicum, these identity shifts remained largely conceptual. PSTs adopted an inquiry-oriented identity in university settings, but a more practice-compliant identity in schools. This fluctuation highlights the context-sensitive nature of research engagement and supports the view that research literacy is socially mediated rather than individually possessed (Evans et al., 2017).

The Developmental Nature of Research Literacy

These findings suggest that coursework alone is not enough to develop research engagement. It is a developmental, context-dependent, and socially mediated process (Evans et al., 2017; Vieira et al., 2021). PSTs in our study displayed early-stage research literacy, with developing knowledge and tentative skills, but had limited opportunities to apply these understandings in authentic teaching contexts. The TRL framework helps identify where this development weakened. Declarative knowledge was the most stable, while procedural skills weakened during the practicum. Dispositions toward research were fragile, and school contexts provided little support for research-oriented enactment. These findings highlight that research literacy depends on the interaction of knowledge, dispositions, and context.

This study shows that theorizing for practice is difficult to sustain in pre-service teacher education. While coursework can develop research knowledge and skills, its continuation during practicum depends on institutional conditions that support autonomy and inquiry. This highlights the need for teacher education programs to more explicitly support theorizing for practice across university and school contexts.

Conclusion

This study examined how PSTs develop, interpret, and sustain research literacy as they move from a university-based research course into the school-based practicum. Drawing on the TRL framework (Kostoulas et al., 2025), the findings show that PSTs' engagement with research is developmental, uneven across dimensions, and highly sensitive to context. During coursework, students demonstrated noticeable growth in declarative knowledge and emerging procedural skills. They learned how to formulate research questions, engage with academic literature, design basic research tools, and make introductory methodological decisions. These outcomes reinforce earlier work showing that structured and scaffolded research courses play an important role in building the cognitive and technical foundations of research engagement (Aspfors & Eklund, 2017; Guilbert et al., 2016; Stürmer et al., 2013).

However, the practicum showed that these gains were not easily sustained. Most PSTs reported that research played a minimal role in identifying classroom problems or informing pedagogical decisions. Their reflections point to a practicum environment shaped by mentor expectations, curricular constraints, assessment pressures, and limited time, conditions that rarely encouraged inquiry-oriented thinking. This pattern aligns with long-standing concerns that school placements often constrain, rather than extend, research-informed learning (Akyel, 2015; Trent, 2013; Flores, 2020). Although a small number of students retained conceptual links between research and communicative language teaching, their engagement with research remained selective and strongly dependent on contextual affordances. For many, research was acknowledged as valuable in principle but perceived as difficult to enact in the everyday realities of classroom practice, echoing broader discussions of the "research–practice gap" in teacher education (Borg, 2019; Smith & Flores, 2019).

Overall, the study demonstrates that research literacy develops most strongly during structured coursework but weakens without deliberate integration into practicum settings. In this sense, TRL is not simply an individual competence but a situated, socially mediated construct, shaped by whether schools, mentors, and program structures recognize research as a legitimate part of teaching (Evans et al., 2017). This highlights the need to better align university-based research learning with school-based teacher socialization, so that research literacy becomes a sustained professional resource rather than a requirement confined to the academic coursework.

Implications

The findings have important implications for teacher education programs aiming to develop sustainable research literacy. The strong sense of disconnection reported by PSTs points to limited structural coherence across different parts of the program. Teacher education programs may therefore need to reconsider how research tasks are sequenced and integrated, ensuring that practicum experiences explicitly build on earlier coursework. For instance, asking PSTs to identify a classroom-based problem and engage with relevant literature during practicum could help position inquiry as part of everyday teaching rather than a separate academic exercise (Trent, 2013; Flores, 2020).

In this study, the practicum did not involve any research-focused tasks, leaving PSTs with limited opportunities to draw on their research skills. Incorporating assignments such as small-scale classroom interventions or reflective logs could help PSTs experience research as an integral part of teaching, rather than as a separate academic requirement (Bendtsen et al., 2021; Ulvik & Riese, 2016).

Mentor influence was a decisive factor in whether PSTs felt able to use research thinking. Programs may need to offer mentor development sessions that clarify the role of research literacy and demonstrate how mentors can scaffold analytic reasoning even without conducting research themselves. When mentors value inquiry, PSTs are more likely to adopt a research stance (Cian et al., 2017; Kang, 2021).

Students' reflections show that methodological instruction alone is insufficient. Exposure to annotated research examples, model tools, and step-by-step demonstrations can help connect research terminology and concrete instructional decisions. Such situated modelling makes visible how research informs practice, rather than simply explaining research in theoretical terms (Guilbert et al., 2016; Strat et al., 2014).

Given the role of research in shaping early teacher identities (Flores, 2020), coursework should include structured reflective activities that encourage PSTs to express how research shapes their emerging beliefs about teaching. This may help students see research not as an academic challenge, but as a professional orientation.

Many PSTs described the 14-week course as insufficient for deep learning. Extending the course across two semesters, beginning with foundational concepts and followed by a stronger focus on application, may support movement beyond procedural competence toward more durable research-oriented dispositions (Aspfors & Eklund, 2017; Evans et al., 2017).

Several limitations should be acknowledged. First, the study involved a small cohort from a single ELT program, limiting the transferability of findings. Second, the data relied primarily on PSTs' written reflections, which capture perceived experiences but may not fully reveal their actual decision-making or classroom behavior. Third, our study did not systematically examine mentor teachers' perspectives or school culture, though both emerged as influential contextual factors. Future studies should incorporate mentors' and school leaders' voices to develop a more comprehensive account of contextual capacity. Longitudinal research following PSTs into their first years of full-time teaching would also be valuable, responding to ongoing calls for extended timelines in research engagement studies (Contreras et al., 2025; Mayer, 2021).

Despite these limitations, the study contributes to ongoing debates about the developmental and context-sensitive nature of research literacy in teacher education. It highlights the need to rethink research not simply as a cognitive achievement, but as a situated practice shaped by the environments in which PSTs learn to teach.

Author Contributions

The authors contributed equally to the preparation of this manuscript. Both authors have read and approved the final version of the manuscript.

Ethical Declaration

This study was conducted with the approval of the Middle East Technical University Social Sciences Human Research Ethics Committee, as granted at the meeting held on September 29, 2020 (Protocol No. 264-ODTU-2020).

Conflict of Interest

The authors declare that they have no conflict of interest with any institution or person within the scope of the study.

Declaration of Generative AI Use

The authors declare that they did not use any artificial intelligence tools in this study.

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