

**Early Career Teacher Agency in K-12 Education:
A Scoping Review of Empirical Studies**

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ABSTRACT

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The perspective of early career teachers (ECTs) in need of support has often been criticized for leaving their potential and strengths out of view. Researchers have explored the concept of teacher agency to understand how ECTs take proactive roles in their induction and development, beyond the view that they are immature. This scoping review aimed to provide an overview of empirical studies published between 2018 and 2022, focusing on ECT agency in K-12 education. In particular, this research investigated how the previous studies approached ECT agency methodologically, conceptually, and practically.

To ensure reliability, a research protocol was developed in advance. Following the five steps of the scoping review process, peer-reviewed articles were gathered from three electronic databases. Study selection criteria were developed by incorporating the participants, concept, and context that this scoping review aimed to encompass. Thirty-seven articles were finally included as meeting the criteria. Data analysis involved simple statistics and content analysis, with the results presented using narrative terms, tables, and figures.

The findings confirmed that teacher agency is a valuable concept for understanding the proactive perspective of ECTs. In addition, the results provide the present status of ECT agency studies in K-12 education in terms of their trends, conceptualization, and key influences on ECT agency. Moreover, influences on ECT agency were identified at both individual and contextual levels, highlighting the importance of considering temporal and contextual influences for a comprehensive understanding of ECT agency.

Keywords: early career teacher, K-12 education, scoping review, teacher agency, teacher development

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1 INTRODUCTION

1.1 General Issues of the Topic

There has been growing interest in the internationally reported attrition rate of teachers who leave their school within the first five years after starting teaching (see Hong, 2012; Symeonidis et al., 2023). Unfortunately, previous studies illustrated the experiences of Early Career Teachers (ECTs) rather negatively, using terms like “reality shock” (Veenman, 1984). ECTs were said to “spend a disproportionate amount of time and effort simply to keep their heads above water” (Fantilli & McDougall, 2009, p. 814). Brill and McCartney (2008) asserted that the high attrition rate of ECT compromises the quality of teaching and the achievement of students. In addition, employing and training new teachers costs a great deal, as does their adaptation within the school community. As a result, it seems important to examine the challenges that ECTs face in order to support their retention (Çakmak et al., 2019).

However, in contrast, several researchers criticized that focusing only on challenges and ECTs’ need for support is a type of deficit view that leaves their potential and strength out of view (e.g., Correa et al., 2015; Kelchtermans, 2019). The deficit perspective posits that ECTs are relatively immature, which creates uneven power structures between veteran and novice teachers and can restrict ECTs’ active engagement in their working and teaching (Rubin, 2018). Adoniou (2015), for instance, illustrated how the ‘novelty’ of ECTs can deprive them of their right to speak up in their school and even force them to conform to existing norms. While teachers can interpret context and situations differently depending on their background experiences (Leijen et al., 2020), it is important to remember that less teaching experience does not necessarily lead to a lower quality of teaching (Graham et al., 2020).

Therefore, because of this general contrast in approach, shifting from the view of immaturity opens the possibility of ECTs contributing to the educational

community. ECTs can contribute positively to a school by offering a fresh perspective on long-standing customs, facilitating reflection among other teachers, and assuming leadership roles (Kelchtermans, 2019). In addition, ECTs can provide “current knowledge” and “alternative practices” that they learned during pre-service training as well as from their lives (Ulvik & Langørgen, 2012, p. 52). For example, during and after COVID-19, the integration process of digital tools into education underlined the value of ECTs (Jogezai & Baloch, 2023).

However, shifting away from the deficit view of ECTs does not negate the benefits of supporting them. Kvam et al. (2023) determined that ECTs perceive themselves as a resource for their school, but they also need support. The authors also emphasized that understanding these two aspects as a dynamic can enhance education and foster innovation. Thus, it follows that supporting ECT is crucial, but at the same time, transcending a passive perspective on ECT can secure the space for ECTs to promote their active action and engagement in their work and teaching. Ultimately, Kelchtermans (2019) suggested ‘teacher’ agency as an alternative frame to understand ECTs as an active agent.

Education is more than simply acquiring knowledge and skills, so teachers are not passive deliverers but meaning-makers in education. According to Biesta (2015), “the point of education is that students learning *something*, that they learn it for a *reason*, and that they learn it *from someone*” (p. 76), and teaching is about making more “educationally desirable” (p. 80) judgments around these aspects. However, in actual educational situations, the decisions that teachers make are more than just what they believe about education. According to Strom and Martin (2022), teaching is an assemblage of many elements, including students, the school system, culture, and policy, as well as the teachers themselves. Thus, teachers not only implement education but also interpret and make decisions based on these elements.

Previous research has extensively addressed this subjectification of teachers' role in education using the term **teacher agency**. Priestley et al. (2015) argued that teacher agency is an “active contribution to shaping their work and conditions” (p. 1). In recent years, prevailing educational reform and accountability

mandates have brought attention to the concept of how teachers implement meaningful education in these tensions (Cong-Lem, 2021). For example, Oolbekkink-Marchand et al. (2017) revealed that the external context that teachers are working in can constrain teacher agency, but teachers still can intentionally make space for their professional action. However, personal and contextual factors can shape the space for agency, and it can also evolve over time (Oolbekkink-Marchand et al., 2017). Hence, teacher agency should be necessarily understood in light of the dynamics and influences underpinning it (Biesta et al., 2015).

Especially for ECTs, professional agency is essential to understand the “socialisation” in their school as a negotiation between their professional selves and working contexts (Kelchtermans, 2019, p. 89). Sela and Harel (2019) contended that the success of ECTs’ induction can depend on their “actions and initiatives” (p. 198), suggesting that the primary focus of teacher induction should be ECTs themselves rather than external support. ECT agency and the temporal-relational context around them provide a lens to understand how ECTs perceive and “re-compose” the resources to promote their induction (Kettle et al., 2022, p. 5). As a result, teacher agency is a useful concept in terms of ECTs’ expertise, development, and induction (Huang & Wip, 2021).

Even though previous studies researched various aspects of empirical evidence to understand ECT agency, there is a lack of synthesis of existing literature on the topic. Extant review studies about teacher agency researched either entire types of teachers (e.g., Cong-Lem, 2021) or specific groups of teachers (e.g., Li & Ruppert, 2021; Miller-Rushing & Hufnagel, 2023), but no review study has addressed teacher agency in a specific career stage group, especially ECTs.

Accordingly, the aim of this research is to provide a comprehensive overview of empirical studies on ECT agency using a scoping review. Specifically, this study focuses on K–12 education, which refers to formal education before higher education. To achieve this, scholarly articles published from 2018 to 2022 are examined. The results discuss previous studies in terms of research trends, the conceptual understanding of ECT agency, and key influences on it.

1.2 Personal Motivation of the Research

I have worked as a teacher for almost five years, so my early career stage is almost over. I have really enjoyed the time I spend with my students and taught them. Most students were sincere, and they respected me if I did my best as a teacher. Sometimes, I was surprised at how much I could learn from my students. Even though teaching was challenging and exhausting, I realized that it is meaningful as well. However, I am currently considering whether to continue this job or not. Maybe my interest in teacher agency started with this question: If I really like teaching, then why am I reluctant to continue it?

As many studies have discussed, I also faced a lot of struggles as an early career teacher. Teaching and class management did not go as planned, and administrative tasks were entirely new to me. For the first few years, I always worked and prepared classes until late at night. Therefore, adapting to a new working environment was exhausting, but at the same time, I constantly sought out opportunities to learn and fill in my immaturity. For example, I attended teacher training sessions and pursued a degree program in curriculum and instruction. I enjoyed practicing what I learned in my classroom, so I want to emphasize that what caused me to stumble is not just my immaturity as an ECT.

When I started my job, I realized that my job as a teacher involves more than just teaching my students well. I was required to meet many external demands on my work, and sometimes I even felt that my teaching was not respected as important to other educational stakeholders. Actually, in my last school, the demands stemming from my school's expectations encroached upon the time and energy I wanted to devote to what I truly desired to do in my classroom. I tried to manage the workload, but in most cases, I could not. I was skeptical about them, wondering, "Am I doing what teachers have to do?" As a result, I decided to leave the school and move to a school where I can devote myself to my teaching.

On top of that, I want to introduce what happened to Korean teachers recently. When I talked with my teacher colleagues in a teaching staff room, I could notice two conflicting discourses among them. On one hand, teachers shared

their opinions about students and discussed class plans and classroom management ideas, all rooted in their teaching philosophy and enthusiasm. On the other hand, colleagues also said, "We do not need to put effort into our work and teaching." Interestingly, these conflicting opinions came from the same teachers, and this phenomenon happened not only at my school. In an online teacher community, I could easily find teachers lamenting that, despite their best efforts, their teaching practices were misunderstood. Teachers were sometimes blamed, and to make matters worse, they were sued for child abuse.

However, teachers in my country pointed out that there is nothing to protect them from this predicament. Therefore, in this situation, teachers were forced to tread carefully to maintain their status instead of concentrating on implementing good education. Last year, as all these issues began to surface, Korean teachers protested for three months, demanding the protection of their teaching rights (see BBC News, 2023). Although the protest succeeded in bringing about changes, we still have a long way to go to secure teachers' rights to protect their own teaching.

What is more important is to go with the flow as everywhere has its own constraints and opportunities. It is never-ending to be on the quest of being a teacher. So long as you know your place, you can be a good teacher (Huang & Yip, 2021, p. 11).

I agree that there is no utopia for teachers where they can work without any difficulties. There are always both demanding and meaningful moments for teachers. However, I believe teacher agency can drive teachers to pursue these meaningful moments amidst the challenges they face. Teachers practice their beliefs about good education, and they even enact transformative change through their professional agency. Therefore, teacher agency is a key that makes teachers do more than "just a job" (Huang, 2021, p. 1, as cited in Priestley et al., 2015). Therefore, I wonder, "If I understand teacher agency, can I answer the question about continuing my job?" This research will allow me to reflect on my teaching journey.

2 BACKGROUND OF THE RESEARCH

2.1 What Is Agency?

Nowadays, the concept of agency is widely discussed in multidisciplinary areas because it aligns with the contemporary emphasis on "human creativity and autonomy" (Namgung et al., 2020, p. 2). Agency indicates that "humans are fundamentally active beings" (Hitlin & Elder, 2007, p. 185), and agentic people can make intentional decisions on their actions to achieve what they desire (Bandura, 2001). However, since society influences individual actions, agency cannot be a panacea that enables people to fully realize their desires. Interestingly, at the same time, societal situations enable agency to flourish when individuals encounter them. For example, Bandura (2001) argued that agency becomes evident within social contexts as follows:

To make their way successfully through a complex world full of challenges and hazards, people have to make good judgments about their capabilities, anticipate the probable effects of different events and courses of action, size up sociostructural opportunities and constraints, and regulate their behavior accordingly (p. 3).

Furthermore, Hitlin and Elder (2007) elaborated on the multifaceted aspects of agency (see Table 1) rather than roughly defining it as "active striving, taking initiatives, or having an influence on one's own life situation" (Eteläpelto et al., 2013, p. 46). To be specific, they conceptualized four types of individual agency: existential, pragmatic, identity, and life course.

Existential agency underlies the other three types of agencies, which is characterized by "self-initiative" (Hitlin & Elder, 2007, p. 177). Despite social constraints, humans inherently retain the freedom to choose their actions. Particularly, the role of self-efficacy is crucial in fostering "the sense of personal empowerment," recognizing the capacity of agents to exercise their free will (ibid., p. 177).

Table 1*Types of Agency (adapted from Hitlin & Elder, 2007, p. 176)*

Agency "type"	Analytical scope	Characteristics
Existential	All circumstances	Pre-reflective capacity to defy social dictates, fundamental element of "free will"
Pragmatic	Novel situations	Ability to innovate when routines break down
Identity	Routine situations	Capacity to act within socially prescribed role expectations
Life course	Life pathways	Umbrella term for retrospective analysis of decisions made at turning points and transitions

On the other hand, pragmatic agency occurs "when habitual responses to patterned social actions break down" (ibid., p. 178). Although behaviors and decisions in emergent situations tend to be more practical and spontaneous, they are not entirely unpredictable (ibid.). The authors pointed out that inherent patterns that people have continuously developed through their "personality, biography, and values" form the foundation of pragmatic agency (ibid., p. 178).

Identity agency is the "capacity to act within socially prescribed role expectations" (ibid., p. 176). Although humans internalize the patterns that are socially required to execute a specific role, "identity agency relies on personal autonomy" rather than unilaterally accepting social norms (ibid., p. 181). Specifically, an individual's self often guides present actions to align with future objectives, and it continuously interacts with external feedback to adjust these actions.

Lastly, life course agency is "to shape one's life trajectory" (ibid., p. 182). At the transitional point of human life, individuals often exercise this agency, which encompasses two aspects: actions that align with future goals and their perceived ability to achieve those goals. Additionally, the accumulation of one's identity throughout life shapes "possible selves," a future vision of oneself, and influences these two aspects of agency (ibid., p. 183).

Therefore, agency is the concept that explains how human beings proactively navigate the situations they encounter in their lives in general. While

agency is influenced by social context, the human self, continually shaped by their life trajectory, is also a critical element in understanding agency.

2.2 Agency in Professional Life

A profession is crucial for understanding human life because it is a way that humans often give meaning to their own lives. According to Christiansen (1999), “When we build out identities through occupations, we provide ourselves with the contexts necessary for creating meaningful lives, and life meaning helps us to be well” (p. 547). Especially, agency regarding professions indicates “active participation in professional practice and professional lives,” but it can also contribute to individual wellbeing in this regard (Paloniemi & Goller, 2017, p. 466).

Scholars have broadly addressed professional agency as a capacity that emphasizes the proactive role of individuals contributing to context, as well as inter-relational aspects that highlight the contextual situations that enable the agency (ibid.). However, Eteläpelto et al. (2013) argued that professional agency is not only related to socio-cultural context, but also humans as subjects who have unique life courses, and they form professional identity through the agency. This perspective on professional agency highlights “the processes by which subjects construct and actively negotiate their identity position at work and how they practice agency and subjectivity at work” (Eteläpelto et al., 2013, p. 61).

Furthermore, professional agency has been defined in a variety of forms. For instance, individuals can reject the established norms in their professional groups and strive for change (transformative agency); concur with proposed visions (responsive agency); align with others' perspectives (relational agency); and resist suggestions by questioning them (resisting agency) (Collin et al., 2014). Moreover, previous studies have investigated both individual and collective aspects of professional agency, such as personal decision-making and action versus “teamwork, collaboration, and collective learning” (ibid., p. 465).

In conclusion, professional agency sheds light on the human as a professional. In addition, this concept has been approached in a multifaceted way in its focus and forms.

2.3 What Is Teacher Agency, and Why Is It Important?

"Teacher agency is defined as willingness and capacity to act according to professional values, beliefs, goals and knowledge in the different contexts and situations that teachers face in their work both in classrooms and outside of them" (Toom et al., p. 615). Teachers with professional agency "influence, make choices, and take stances on their work and professional identities" in forms of changing, maintaining, or even resisting "their work practices, cultures, and discourses" (Eteläpelto et al., 2013, p. 61). On the other hand, Hadar and Benish-Weisman (2019) demonstrated that teacher agency also means the agentic action of teachers as well as the capacity to act, such as through ambitious activities, collaboration with others, creative action, engagement in the educational community, and even informal activities to benefit organizations. However, teachers can decide not to act based on their perception, and this "non-action" can be a form of agency as well (Hurst & Brantlinger, 2022, p. 2). In an actual educational context, these two aspects of agency, action and capacity, are not disparate, but they intertwine and interact with each other (see Hadar & Benish-Weisman, 2019).

Furthermore, teacher agency encompasses interpersonal interactions and collective actions. According to Edwards (2005), relational agency is the ability to act collaboratively with others by interpreting their needs and negotiating with them. This agency occurs when teachers can both "offer support and ask for support from others" (Edwards, 2005, p. 168). This support-seeking activity can extend to the teacher community on an organizational level. In this case, this organizational support not only improves the classroom practice of individual teachers but also empowers groups of teachers to act by coming to recognize their collective power (Quinn and Carl, 2015). Moreover, recognizing collective power can strengthen individual teacher agency (Fu & Clarke, 2019b). This suggests a reciprocal cycle between individual and collective agency for agency development.

Especially in the flow of educational reform and policy, the orientation of agency has been emphasized by those who want to recognize the role of teachers with respect to educational change (Tao & Gao, 2017). However, Robinson (2012)

argued that teachers enact their agency by negotiating, resisting, and adapting educational demand to their values and beliefs. Therefore, teachers can practice more than just complying with external requirements, and their professional expertise balances the tension between policy and their space to practice (Ben-Peretz, 2012).

The contribution of teacher agency has also been discussed beyond the school context. For example, Pantić (2015) articulated that a teacher can contribute to social justice as an agent of change. The author defined teacher agency as follows: “teachers act strategically to transform the risks of exclusion and underachievement into inclusion and improved outcomes for all students in contexts of cultural and social diversity” (Pantić, 2015, p. 759). Moreover, teaching necessarily entails moral decisions regarding the long-term impact on students, such as their “development and well-being” (Fu & Clarke, 2019a, p. 53). In all these ways, teacher agency ripples temporally and spatially, well beyond the moment it is exercised.

In summary, teacher agency has been defined differently in terms of capacity, action, and both individual and collective perspectives. In addition, teacher agency consistently highlights the teachers’ initiative in pedagogical practice, despite external requirements and their responsibilities. Thus, this concept more fully recognizes the role of teachers in education.

2.4 Teacher Identity and Agency: Reciprocal Concepts

Identity pertains to questions such as “who am I at this moment” and “who do I want to become” (Beijaard et al., p. 122). From the perspective of teachers, identity refers to how teachers perceive themselves in relation to their profession. Teachers often shape their professional identity by interpreting their roles within their working community and prioritizing values that are important to their work (Wray & Richmond, 2018). Additionally, a teacher’s professional identity can be understood through the perspectives of others (Wei et al., 2020). Teacher identity is widely recognized as fundamental to understanding the self of teachers, and it is closely discussed in relation to their professional agency.

Interestingly, teacher identity is not fixed, but it is constructed through an ongoing process “which entails the making sense and (re)interpretation of one’s own values and experiences” (Flores & Day, 2006, p. 220). This process includes both what teachers experience in their professional careers and in their personal lives (Wray & Richmond, 2018). Additionally, upon entering in-service teaching, teachers often encounter the need to negotiate their professional identity, which was developed during pre-service education (Lockton & Fargason, 2019).

This identity negotiation entails teacher agency (Eteläpelto et al., 2015), but teachers do not always accept external pressures to reformulate their professional identity. Instead, they can exercise agency in defending their identity by resisting external influences (Ruohotie-Lyhty, 2018). Therefore, the role of agency regarding identity is to mediate between the environment and the identity of teachers, addressing the “ability to find a constructive balance between one’s own aims and the needs of the workplace” (ibid., p. 34).

Furthermore, teacher identity is not only influenced by teacher agency but also impacts it. Beauchamp and Thomas (2009) explained this relationship as follows:

What may result from a teacher’s realization of his or her identity, in performance within teaching contexts, is a sense of agency, of empowerment to move ideas forward, to reach goals or even to transform the context. It is apparent that a heightened awareness of one’s identity may lead to a strong sense of agency (p. 183).

In conclusion, teacher agency plays a crucial role in reshaping the professional identity of teachers, but it also contributes to maintaining the present status of the identity. Furthermore, a strong sense of identity enhances the professional agency of teachers, thus indicating a reciprocal relationship between these two concepts.

2.5 Influences on Teacher Agency

Teachers are “who possess a unique life-history with individual experiences and competences” and contexts around them (Eteläpelto et al., 2013, p. 60). Therefore, from a life-course perspective, teacher agency can be understood as interplaying with the past experiences that teachers have had (Varpanen et al., 2022, p. 2). Actually, the present, where teachers exercise agency, is the result of an accumulation of past moments, including both their personal lives and professional experiences (Priestley et al., 2015). For example, there are teachers who consider their own school teachers to be role models, and Hurst and Brantlinger (2022) noted that critical incidents in their profession can also influence teachers' decisions. In addition, reflection on the experiences that teachers acquire from pre-service training and teaching practice is considered a key element in teacher agency (Chaaban & Sawalhi, 2021). These past experiences shape “personal capacity (skills and knowledge), beliefs (professional and personal), and values,” which constitute teacher agency (Priestley et al., 2015, p. 31).

Previous studies have specifically demonstrated the relationship between teachers' attributes and their professional agency. For instance, Hadar and Benish-Weisman (2018) revealed a relationship between teachers' values and their agentic capacity, with the capacity acting as a mediator between value and agentic behavior. In addition, Biesta et al. (2015) concluded that teachers beliefs play an important role in their professional agency. These studies both highlighted that personal attributes can guide teachers to achieve agency, and they can orient the future direction that teachers want to achieve despite being developed in their past lives. Thus, the temporal dimensions of teacher agency are not actually segmented, but they are analytical divisions.

Furthermore, future expectations can motivate teachers, influencing their actions and emotions (Narayanan & Ordynans, 2022), and Priestley et al. (2015) asserted that both long-term and short-term aspirations for the future can guide teacher agency. This consideration about the future orientation of teacher agency answers the question, "Agency for what?" (Varpanen et al., 2022, p. 2). However,

the achievement of teacher agency is not only in the temporal dimension of teachers but also interplays with social and cultural contexts (Biesta et al., 2015; Rajala & Kumpulainen, 2017).

Regarding the contexts, Priestley et al. (2015) described that teachers evaluate the feasibility of their pedagogical actions in the cultural, structural, and material conditions of their working environment. Specifically, culture refers to unconsciously pervasive beliefs, values, and attitudes that “closely connect the members of a community,” and it can be manifested in structure, relationships, rituals, and practices (Čamber Tambolaš et al., 2023, p. 1). On the other hand, structure is the temporal, spatial, and human environments that organize “the activities of children and educators,” such as “space, time, role, and relationships” (ibid., 2023, p. 2). Furthermore, teachers can utilize resources and physical environments for educational purposes (Priestley et al., 2015).

Teacher agency, therefore, is a result of all the dynamics of teachers' past and present contexts, and it constructs the future context in which teachers can act (Lasky, 2005). In other words, to understand teacher agency, it is necessary to consider not only the teacher's self but also the time and context in which they were, currently are, and aspire to work.

3 RESEARCH TASK AND RESEARCH QUESTIONS

Previous studies have highlighted the importance of shifting the perspective on ECTs to recognize their strengths and potential. Teacher agency is a concept that demonstrates a proactive perspective on ECTs, specifically how they actively engage in their work and teaching. In this regard, empirical studies on the ECT agency have provided valuable insights into understanding its dynamics and the ways to support it. However, there is a lack of review research providing an overview of previous studies in this area. Therefore, the purpose of this scoping review is to examine the current status of studies on ECT agency to guide future research, particularly within the K-12 education context. This research investigates previous studies methodologically, conceptually, and practically in terms of these research questions:

- Q1. What are the key trends of studies focused on the agency of ECT in K-12 education in the studies selected for this scoping review?
- Q2. How is 'ECT agency' conceptualized in the studies examined in this scoping review?
- Q3. What might be key influences on the agency of ECT in K-12 education?

4 RESEARCH IMPLEMENTATION

4.1 What is a Scoping Review?

Literature reviews stem from the need to synthesize all the evidence about a topic or area (Grant & Booth, 2009), but researchers in various disciplines have conducted these reviews for diverse purposes. A scoping review is a specific type of literature review that aims to "identify nature and extent of research evidence" (ibid., p. 95). Munn et al. (2022) define a scoping review in detail by clarifying its objectives and usefulness:

Scoping reviews are a type of evidence synthesis that aims to systematically identify and map the breadth of evidence available on a particular topic, field, concept, or issue, often irrespective of source (i.e., primary research, reviews, non-empirical evidence) within or across particular contexts. Scoping reviews can clarify key concepts/definitions in the literature and identify key characteristics or factors related to a concept, including those related to methodological research (p. 950).

Scoping reviews can be likened to piecing together a puzzle in that researchers gather evidence to comprehend the entirety of the scope they define. Thus, scoping reviews are often categorized as "big picture review family," which broadly address issues within a research area, in contrast to systematic reviews, which deal with a relatively narrow scope (Campbell et al., 2023, p. 4). However, the common features shared by these two types of literature reviews often make it difficult for researchers to make clear decisions regarding their review approach (Grant & Booth, 2009; Munn et al., 2018). Precisely, both scoping reviews and systematic reviews take a systematic approach, including the analytical reinterpretation by researchers (Levac et al., 2010). Additionally, they share a similar process for identifying literature and analyzing data to answer the research question (Pham et al., 2014).

However, the distinction between scoping reviews and systematic reviews is evident in that scoping reviews aim to "provide an overview or map of the

evidence," while systematic reviews aim to "produce a critically appraised and synthesized result or answer to a particular question" (Munn et al., 2018, p. 3). In other words, while scoping reviews focus on presenting and describing evidence from previous literature, systematic reviews involve analytical comparisons to derive an answer (Peters et al., 2022).

Moreover, systematic reviews and scoping reviews also differ in their application of critical appraisal to the research. In a scoping review, examining the quality of included studies is not compulsory, whereas it is necessary in a systematic review to ensure the reliability of the derived answers resulting from data synthesis (Arksey & O'Malley, 2005). The following guidelines (see Table 2) suggest multifaceted aspects of review research to consider when selecting between a systematic review and a scoping review.

Table 2

Indications for Systematic Review and Scoping Review (Munn et al., 2018, p. 2)

Systematic review	Scoping review
- Uncover the international evidence	- To identify the types of available evidence in a given field
- Confirm current practice/ address any variation/ identify new practices	- To clarify key concepts/ definitions in the literature
- Identify and inform areas for future research	- To examine how research is conducted on a certain topic or field
- Identify and investigate conflicting results	- To identify key characteristics or factors related to a concept
- Produce statements to guide decision-making	- As a precursor to a systematic review
	- To identify and analyse knowledge gaps

Considering the points mentioned above, I decided to conduct a scoping review instead of a systematic review because this research aims to gain a comprehensive understanding of ECT agency rather than providing specific answers to pre-determined questions. Specifically, the purpose of this scoping review is closely aligned with the guidelines suggested by Munn et al. (2018). I intended to explore the research trends in ECT agency studies, clarify the concept of ECT agency, and identify influential factors in ECT agency, and these considerations ultimately guided my decision to opt for a scoping review.

4.2 Ethical Considerations of the Research

Initially, defining the research ethics of this scoping review was challenging. As I had associated research ethics with studies involving human participants, the research ethics of a scoping review did not align with my prior understanding in that it relies mainly on publicly available literature. As a result, I needed to broaden my perspective on research ethics, and I redefined it as the principles guiding good research conduct. Research ethics in this study indicate that "good research practices are based on fundamental principle of research integrity," which encompasses "reliability," "honesty," "respect," and "accountability" (ALLEA, 2023, p. 5). Throughout this research, I reflected on the following ethical considerations to ensure good research practices:

The first ethical consideration is the epistemology of this research. I presumed that research is a process in which the "subject imposes meaning on an object" (Moon & Blackman, 2014, p. 1169). This epistemology admits there can be diverse interpretations of this world, and the reality of this world is what people impose meaning on rather than exist outside of the subject (ibid., 2014). As a result, this research respects each approach previous studies used to understand ECT agency. In other words, this scoping review does not offer a single correct explanation but rather presents a comprehensive map of evidence from various perspectives on the topic, ensuring an "accurate portrayal of existing research" (J. Koski, personal communication, October 25, 2023). According to Thomas et al. (2020), this philosophical stance of a scoping review should align with the methodology, and they suggested epistemological considerations for each step of research, which I concurred with in this research process (see Table 3).

A second consideration is about the scope and consistency of the research. Establishing the scope of a scoping review entails defining its breadth and depth, which serve as the starting point for designing the methodology. To define the breadth of this review study, I applied the PCC framework (Peters et al., 2022) throughout the entire research process with core keywords such as ECT, teacher agency, and K-12 education (see Section 4.3.1). This framework ensured con-

sistency between the intended scope and the identified actual results. Additionally, the research aim guided the definition of the research depth in relation to data extraction. To provide a comprehensive view of each study, this research extracted data from various parts of each article, such as the research design, participant demographics, and study results.

Table 3

Epistemological Considerations for Each Step of the Review (adapted from Thomas et al., 2019, p. 996)

	Embrace...	Avoid...
<i>Step 1</i>	Questions that focus on description, mapping, with a focus on breadth	Questions that confer 'solutions' or definitive answers about whether an intervention works
Identifying the research question	A question that doesn't prioritize a given study or literature type	Questions that try to find a 'truth' or are only answerable with one type of study
<i>Step 2</i>	Being broad with considering what materials might be relevant, so long as it is appropriate for your research question	Selecting a single type of study to synthesize (unless directly related to the research question)
Identifying relevant studies	Making sure your search strategy is allowing for the inclusion of multiple literature types	Discarding certain types of literature (theses, editorials) without a clearly documented rationale
<i>Step 3</i>	Verifying that the included literature reflects a variety of epistemologies, research methods, and data collection techniques	Insisting on a computational approach to agreement without consideration for the research question and goals
Selecting studies	Team discussion and consensus on which papers to be included Reaching some common understanding of where disagreements may lie, why and how these can be used to strengthen the review	"Forcing" a quality appraisal particularly in the presence of a heterogenous corpus of papers
<i>Step 4</i>	Capturing the breadth present within your included literature as related to your research question	Only selecting 'data' from the results section. Rich sources can also include the introduction and discussion sections
Charting the data	Collecting sufficient data/information to answer your research question	"Over-charting" as assurance of capturing everything without a specific plan for how it will inform your research question
<i>Step 5</i>	Reporting descriptive data in a way that contributes towards answering your question (historical trends, evolution in the literature over time)	Making recommendations (e.g. policy or educational) based on your data
Collating and reporting findings	Providing thick (whether quantitative, qualitative, or mixed) descriptions of identified data and literature	Simplistic underrepresentation or single approaches to analysis and data presentation Avoid 'averaging' all findings

A third consideration is related to the transparency of the research. The scoping review process is iterative, allowing for revisiting prior stages if necessary (Arksey & O'Malley, 2005). However, without a reference point, researchers may risk bias in their revisions. Hence, I developed a protocol before implementing this review study to ensure the reliability and rigor of this research (Peters et al., 2022). Transparency was also prioritized in reporting. Specifically, I utilized the PRISMA-ScR checklist (Tricco et al., 2018) to cover key elements and clarify their description in this research (see Appendix 1). Furthermore, I aimed to provide thorough reporting for readers to easily understand the research procedures undertaken (Arksey & O'Malley, 2005). For example, I explicitly detailed any changes made compared to the prior protocol, along with reasons, and attached a detailed study selection process in Appendix 2.

Lastly, I utilized AI-based tools, adhering to the guidelines of the University of Jyväskylä (n.d.). The AI tools employed in this research include Chat GPT, TLDR This, Deep L, Google Translate, QuillBot, Grammarly, and Wordvice AI. I primarily used these tools to generate ideas, comprehend article content, refine writing context, and correct grammatical errors. I want to point out that while these tools assisted in the research process, the responsibility for verifying the accuracy of this research lies with me as the primary researcher, not the AI tools.

4.3 Developing the Research Protocol

I developed an *a priori* protocol before undertaking my scoping review to ensure the transparency of the research process and to prevent biased reporting (Peters et al., 2020; Peters et al., 2022). I planned this research following the five steps suggested by Arksey and O'Malley (2005): identifying the research questions; identifying relevant studies; study selection; charting the data; collating, summarizing, and reporting the results. Although it is important to follow the protocol rigorously, the research strategy can be continuously modified while conducting research because the review process is iterative and deviations from the protocol are common (Peters et al., 2022). In the following subsections, I elaborate on the protocol of this research, which demonstrates the research procedure that I

planned prior to undertaking the scoping review. I conducted the scoping review based on this research protocol, but it was constantly revised during the research process (see Section 4.4.1).

4.3.1 Identifying research questions

In the first stage of the protocol, I developed research questions to specify "which aspects or facets" the study will examine (Arksey & O'Malley, 2005, p. 23). First of all, when identifying research questions, it is essential to acknowledge that presuming a singular truth is not appropriate in a scoping review (Thomas et al., 2019). Thus, I designed the research questions broadly enough to cover all the studies within the research scope (Arksey & O'Malley, 2005; Levac et al., 2010).

In addition, core aspects of a scoping review can be addressed by considering the *population, concept, and context* (PCC) of the research (Peters et al., 2022). In this study, *early career teachers* (population), *teacher agency* (concept), and *K-12 education* (context) were identified as key aspects to focus on and examine. Therefore, I incorporated these three key aspects of my research into the research questions.

Furthermore, I aligned the research questions with the research objectives to be able to verify the achievement of the objectives through the results of the research (Peters et al., 2022). This scoping review aims to provide a comprehensive overview of empirical studies on ECT agency in K-12 education by examining the trends of the studies, conceptualizations of ECT agency, and influences on it. Accordingly, I developed three research questions based on these three objectives.

4.3.2 Identifying relevant studies

In this stage of the protocol, I determined my information sources, search keywords, and search strategies to identify relevant studies. Initially, I devised a plan for this stage independently, followed by a one-hour meeting with a university information specialist for feedback. During the consultation, she recommended

available databases, suggested search keywords, and refined the search statement for databases (see Appendix 3). I finalized the plan for this stage based on her feedback, as outlined below.

"Electronic databases; reference lists; hand-searching of key journals; existing networks; relevant organizations and conferences" are commonly used resources for identifying relevant studies in a scoping review (Arksey & O'Malley, 2005, p. 23). However, due to limitations in time and resources for this research, I decided to focus on the literature available in electronic databases. Furthermore, I selected several databases to avoid potential biases stemming from the limited coverage of individual databases. Specifically, I chose one discipline-specific (education) database, ERIC, along with two multidisciplinary databases, Web of Science (WoS) and SCOPUS, which encompass "the most comprehensive data sources for various purposes" (Pranckutė, 2021, p. 1).

Then, I specified the search keywords with the synonyms of the key aspects of my study: early career teacher and teacher agency (Peters et al., 2022). However, the contexts of the studies (K-12 education) were not used to define search keyword because it can unnecessarily narrow down the search results. Instead, I primarily examined the research context during the full-text assessment. The final search keywords I planned to use for my research are as follows:

- *Search field 1: early career teacher, novice teacher, beginning teacher, newly graduated teacher, new teacher, newly qualified teacher, recently graduated teacher, young teacher, inexperienced teacher*

- *Search field 2: agency*

For the first search field, *early career teacher, novice teacher, beginning teacher, newly graduated teacher, new teacher, and newly qualified teacher* were identified. I determined these keywords as synonyms for *early career teacher* during the general literature review for my thesis work. Additionally, the information specialist I spoke with suggested keywords such as *recent graduated teacher, young teacher,*

young staff member, inexperienced teacher, inexpert teacher, unexperienced teacher, and unpracticed teacher. Among them, *young staff member* was removed because 'staff' and 'member' was too broad, and it is not clear that those words can identify the studies about teachers. In addition, *recent graduated teacher* was grammatically corrected to *recently graduated teacher*. Then, data searching was tested with those keywords in the three databases that will be used for this study. The search-result showed that *recently graduated teacher, inexpert teacher, unexperienced teacher, and unpracticed teachers* were not influential to the result, which means my other keywords could cover the articles that those keywords generated.

For the second search field, *agency, teacher agency, professional agency, and agentic* were identified. However, I decided not to use *agentic* because studies focusing on teacher agency usually do not use the term *agentic*, but rather *agency*. Moreover, it was determined during my meeting with the information specialist that *agency* can encompass the search results produced by the keywords *teacher agency* and *professional agency*.

In addition, to develop search queries, Boolean operators (AND, OR), quotation marks (""), and asterisks (*) were used. Specifically, quotation marks ("") were used to apply exact terms to my searches. For example, searching "early career teacher" in the database results in the literature exactly using "early career teacher," but without quotation marks, the result can include the literature using 'early,' 'career,' and 'teacher' separately. In addition, asterisks were used to include plural forms of keywords such as 'early career teachers.'

Then, I explored the three databases in advance to specify the search strategy plan. I considered the differences between each database when selecting search fields and filters so that they could result in articles with similar features. Table 4 shows the final database search strategies I planned in the protocol.

Table 4*Database Searching Strategies*

	Searching Query	Filters
ERIC	noft("early career teacher*" OR "novice teacher*" OR "beginning teacher*" OR "newly graduated teacher*" OR "new teacher*" OR "newly qualified teacher*" OR "recently graduated teacher*" OR "young teacher*" OR "inexperienced teacher*") AND noft(agency)	<ul style="list-style-type: none"> - Searching field: anywhere except full-text - Peer-reviewed - Source type: scholarly journals - Publication date : 2018 Jan 1st – 2022 Dec 31st - Document type: article - Language: English
SCOPUS	(TITLE-ABS-KEY ("early career teacher*" OR "novice teacher*" OR "beginning teacher*" OR "newly graduated teacher*" OR "new teacher*" OR "newly qualified teacher*" OR "recently graduated teacher*" OR "young teacher*" OR "inexperienced teacher*") AND TITLE-ABS-KEY (agency))	<ul style="list-style-type: none"> - Searching field : article title, abstract, keywords - Year: 2018-2022 - Document type: article - Publication stage: final - Source type: journal - Language: English
WoS	TS=("early career teacher*" OR "novice teacher*" OR "beginning teacher*" OR "newly graduated teacher*" OR "new teacher*" OR "newly qualified teacher*" OR "recently graduated teacher*" OR "young teacher*" OR "inexperienced teacher*") AND TS=(agency)	<ul style="list-style-type: none"> - Searching field: topic (searches title, abstract and author keywords) - Publication year : 2018, 2019, 2020, 2021, 2022 - Document types : article, not early access - Language: English

To be specific, I planned to confine the searching field of keywords to anywhere except full-text (article title, abstract, key words; topic) to generate the result for closely related to teacher agency. In addition, only peer-reviewed articles were considered in the search strategies to ensure the minimum level of research quality. However, I excluded articles classified as ‘in press’ stage (SCOPUS) and ‘early access’ (WoS) to avoid including articles in the peer-reviewed process or not yet published.

However, the filter refining the search results into ‘peer-reviewed only’ was only available in ERIC, so I needed to figure out how the function works in SCOPUS and WoS. In SCOPUS, I verified through a customer service email that all search results undergo peer review, a prerequisite for journal indexation in the database (E. J. Penas, personal communication, February 7, 2024). On the other

hand, WoS mentioned on its website that the database can include non-peer-reviewed articles (Clarivate, 2022, May 12). Therefore, I planned to manually check the peer-reviewed information for the articles identified in Wos when I implement the article selection process.

Lastly, I limited the publication year of the search strategy from 2018 to 2022. It would be better to include articles published more recently, such as in 2023 and 2024, to study the recent trend of the topic. However, I got advice from the information specialist that several articles published in 2023 and 2024 might not be uploaded to the databases yet. Thus, I decided to exclude those two years in which I could not obtain all the articles available for the year.

4.3.3 Study selection

In this stage of the protocol, I planned how to manage the data collected from databases and how to select relevant studies from them. First, I decided to download the entire list of articles in Ris format and import the file to the reference manager, Zotero. Such data management tool is useful when doing a scoping review, as it can manage a large number of texts, organize the literature, eliminate duplicate records, and be used to screen titles and abstracts (Peters, 2017). Actually, I checked that Zotero has a function to merge duplicated items automatically, and tag was also a useful function to identify included articles at a glance.

In addition, managing literature as data in a separate folder makes it easier to track the number of studies resulting from individual database searches (Peters, 2017). Thus, I decided to make three folders (subcollections) in my Zotero library named after the databases that I will use for article searches.

Then, to select the studies for my scoping review, I developed inclusion and exclusion criteria for the eligibility assessment by incorporating PCC frames (Peters et al., 2022). Table 5 shows the inclusion and exclusion criteria I made for the protocol. Although the criteria were prepared, it is possible that relevant participants and the context of a study can be mixed with what is irrelevant. Then, the articles can be included only if the data sought for this research can be validly distinguished.

Table 5*Inclusion and Exclusion Criteria for the Study Selection*

	Study will be included if...	Study will be excluded if...
Participant (Population)	<ul style="list-style-type: none"> - Early career teachers (or synonym). - If the term is not specifically identified, in-service teachers with no more than five years of working experience can be included. - Retrospective studies about ECT experience can be included. 	<ul style="list-style-type: none"> - Participants are not early career teacher, for example, pre-service teacher. - If the term is not specifically identified, in-service teachers with more than five years of working experience. - Do not include internship and teaching practicum experience. - Data are mixed with other types of participants, so it is hard to distinguish information about ECTs
Agency (Concept)	The term 'agency' means professional agency of teachers.	<ul style="list-style-type: none"> - The term 'agency' means other than teacher agency, for example, business or organization. - Only focus on personal agency not professional agency¹.
Research Context (Context)	Working place of ECT is in K–12 (formal education before university level) such as kindergarten, primary school, secondary school, upper-secondary school or corresponding educational institution.	Working place of ECT is not K–12 school, for example, private institution or university.
Study type	Empirical study	Other types of studies such as theoretical study and review study
Peer Reviewed	Peer-reviewed publication	Non-peer-reviewed publication
Full-text Availability	Full-text is available	Full-text is not available
Language	Article was published in English	Article was published in other languages
Publication year	Article was published between 2018 and 2022	Article was published out of the year period 2018-2022

¹ Feasibility of this criteria will be discussed in the Section 4.4.1.

Finally, I decided to select articles for my scoping review in two steps based on the developed criteria. First, I will proceed to screen the title and abstract of all articles. Then, I will examine the full-text of the papers. When implementing this process, I can exclude irrelevant studies in the first step and examine unclear or relevant studies in the next step.

4.3.4 Data charting

I developed a protocol for this stage that involves closely reviewing the full text of the finally selected articles and extracting data from them, which will serve as "the basis of the analysis" (Arksey & O'Malley, 2005, p. 27). Firstly, I will read each article repeatedly until I fully understand the whole text. Next, I will extract data from each article and record it in a chart. I will chart the data using Microsoft Excel, as it is easy to compare the data in one sheet and offers the function to modify tables to manage the data. The contents of data charting can be constantly refined during the review stage, and the charted table should be updated as well (Peters et al., 2020). I categorized my data extraction plan based on the three research questions. The details of the list for data charting are as follows:

- **Basic descriptive information:** author(s), title, year of publication, aim/purpose, research questions, research method (qualitative/quantitative/ mixed method), country where research was conducted, and number of participants (sample size), participant types (e.g., classroom teacher or subject teacher), school levels (e.g., primary school), and working experience of participants (years), key findings
- **Theoretical approach on teacher agency:** theories and/or theoretical frameworks addressing teacher agency
- **Constraints and enablers of ECT agency:** what hinders and/or facilitates ECT agency?

4.3.5 Collating, summarizing and reporting the results

The protocol I developed was that I would analyze the collected data and present the results at this stage (Peters et al., 2020). As a scoping review aims to provide an overview rather than weigh existing evidence, it is more suitable to describe the findings in narrative terms (Arksey & O'Malley, 2005) rather than aggregate the results and combine the evidence. Thus, complicated analyses such as "meta-analysis or interpretive qualitative analysis" are not required in a scoping review (Peters et al., 2020, p. 421). In this protocol, I made a plan to mainly use descriptive statistics, like categorizing results and counting the number of them. Additionally, I decided to apply content analysis when "systematic coding and categorizing textual information" becomes necessary (Vaismoradi, 2013, p. 400), such as when addressing research question three.

In content analysis, both inductive and deductive approaches can be employed. For example, the former is useful when there is no previous study providing specific frames for analyzing the phenomenon, whereas the latter can be used to test existing theory in a different context (Vaismoradi, 2013). Reflecting on this research, the inductive approach is more reasonable because this research does not aim to examine the feasibility of the previous theory but to include all available evidence related to the topic.

Before starting the inductive analysis, I should thoroughly review charted data until I am familiar with its contents and then confirm that all the data needed to answer the research questions is ready (Pollock et al., 2023). Then, I will do "open coding," tentatively labeling the meaningful part of the data based on the "initial thought, possible categories, or notes" (ibid., p. 527). After that, I need to categorize the result of open coding into "higher order categories or sub-categories" to embody the analysis framework (ibid., p. 527). During this process, I can refine the framework iteratively and analyze the data after finalizing the specific framework (ibid., p. 527). Strategies like highlighting sentences or code with different colors or using qualitative analysis tools such as ATLAS.ti can facilitate the analysis.

Finally, there are various ways to present the research results, including descriptive summaries, conceptual categories, tables, and charts (Peters et al., 2020). In this protocol, it was difficult to decide on a specific plan for the presentation in advance because it could vary depending on the outcome of the research implementation. Presumably, the first research question will answer the tendency of ECT agency studies, so the presentation can show the patterns of distribution and change of the data. In addition, I can present the categories of the data for the second and third research questions according to their similarities and themes. However, the crucial aspect of data presentation is communicating the research findings in a convincing way related to the research aim of this study. In addition, Pollock et al. (2023) recommended using a creative approach in terms of result presentation. Lastly, I decided to follow the PRISMA-ScR checklist (Tricco et al., 2018) when reporting the entire scoping review process to prevent bias. I will constantly re-examine each element of the checklist to supplement any deficient parts of this scoping review.

4.4 Conducting the Research

4.4.1 My reflection on the research process

Gottlieb et al. (2021) pointed out that scoping reviews aim to assemble existing evidence comprehensively rather than drive one answer by narrowing down a central point. Thus, the scoping review process is iterative to allow reviewers to embrace a broad range of themes discussed in the literature (Gottlieb et al., 2021). Likewise, although I initially developed a protocol, it was constantly revised when implementing the iterative process of this scoping review. Especially, my research question constantly evolved following the actual research process to find out the best fit. In this section, I elaborate on what was changed from the protocol during the research process and how the research questions were refined, with the rationales behind them.

First of all, when undertaking the study selection, I realized the need for additional criteria to decide on the inclusion and exclusion of each piece of literature. To be specific, during the full text reading, I found articles mentioning the word “agency” only once or twice, and I was at a crossroads to decide whether to include them or not. Even though the articles still contained relevant ideas about ECT agency, two questions arose in my mind: “Can I say they are studies about teacher agency?” and “How can I define research about teacher agency?” For the first question, I answered “no” because the studies did not focus on teacher agency. If I include all articles mentioning “teacher agency” at least once, the research result of this scoping review cannot present a cohesive overview of ECT agency studies. Therefore, I needed to make additional criteria to exclude articles not focusing on the topic.

Considering this, I answered the second question like this: If the research framework validly conceptualizes teacher agency, I will include the article. The role of framework in research is “to position the work of a researcher in a field and its related concepts, theories, and paradigms” (Partelow, 2023, p. 511). Maxwell (2005) emphasized the importance of the research framework, as its assumptions can steer the collected data in different directions. Researchers typically outline their research frameworks in the literature review, theoretical frameworks, and conceptual framework sections of an article, closely aligning with the research question, data collection, and analysis. Thus, I required researchers to show their opinion about “teacher agency” in their framework in order to be included in my scoping review.

In particular, I included the articles only if they conceptualized “teacher agency” in their framework by explaining its definition, specifying their theoretical approach to agency, or identifying specific relations with other key concepts of the research. At first, I only considered theoretical approaches to agency for the conceptualization, but there were other ways to do that, such as definition and relevant concepts. For this reason, research question two of the protocol, “How is teacher agency theoretically addressed in the research framework?” was refined to “How is ‘ECT agency’ conceptualized in the studies examined in this

scoping review?" when conducting my scoping review. Then, I extracted the data about theoretical approaches, definitions, and relevant concepts of ECT agency to answer the research question.

In addition, I want to mention the feedback on an inclusion criterion that I got from the research seminar. I mentioned in the research protocol that I would exclude the article "only focusing on personal agency." However, during the research seminar, I received feedback that personal agency and professional agency are closely related to each other, so it is hard to sharply distinguish the boundary between them (Q. Ndomo, research seminar, March 7, 2024). While reading articles, I realized that personal and professional lives interact with each other, which influences how individuals exercise their professional agency. For instance, Huang (2021) mentioned that a participant was challenged to manage both her role as a mom and requirements within her school, and Tompkins et al. (2019) elaborated on how the LGBTQ identity of a teacher is practiced in their education. However, I noticed that one article used the term "agency," unrelated to professional agency, but did not mean organization. Lynch and Mannion (2021) employed the concept of more-than-human agency to address agency not confined to humans but extending to the environmental level. Therefore, it was appropriate to modify the criteria to "exclude if agency does not mean the professional agency of teachers."

Moreover, research question three in the research protocol was "What are the constraints and enablers of ECT agency in K-12 education?" The objective of this question was to identify positive and negative influences on the concept. However, when I read the full text to extract data, I noticed the dynamics of each influence. For example, one influential element can be either a constraint or an enabler depending on the context and situation, which a scoping review does not aim to identify. If researchers have the desire to synthesize such evidence from previous studies, a systematic review is a proper approach (Munn et al., 2018). Therefore, I modified research question three without dividing the influences into positive and negative ones, like, "What might be key influences on the

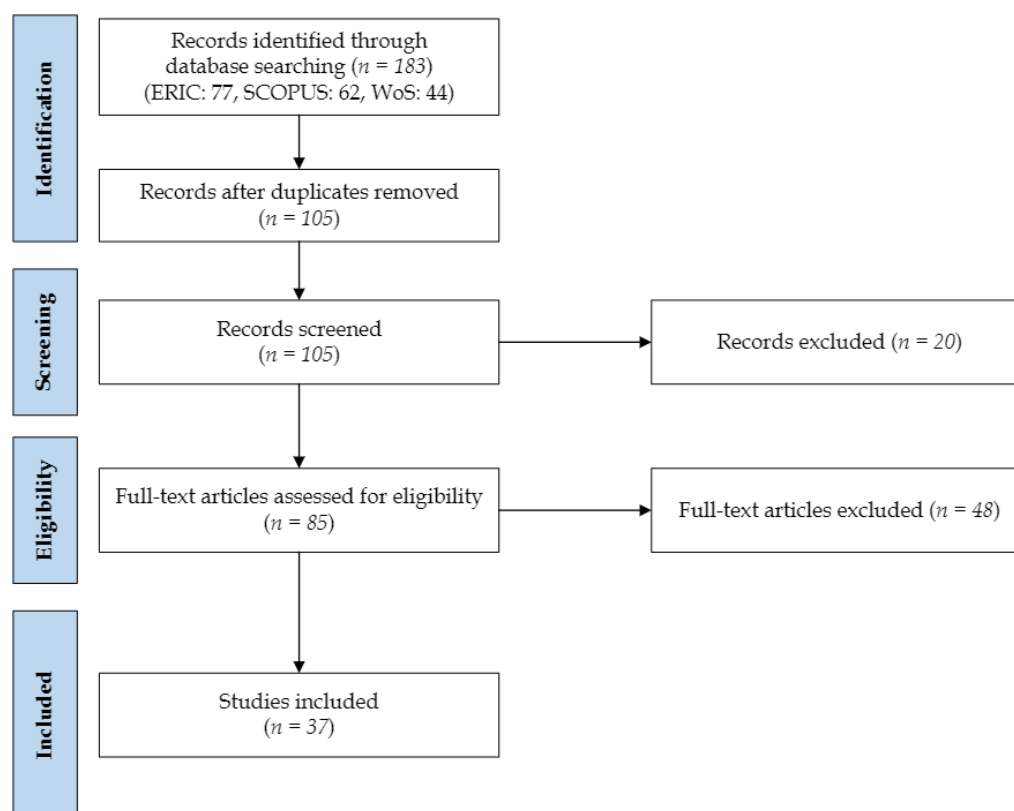
agency of ECT in K-12 education?” The following sub-sections explain the actual research implementation based on modified research questions and criteria.

4.4.2 Study selection for my scoping review

The most recent search was executed on February 22, 2024. The number of articles resulting from my database search was 77 from ERIC, 62 from SCOPUS, and 44 from WoS. First, I removed 78 out of 183 articles in Zotero as they were duplicates, so 105 articles were highlighted by title and abstract screening. During this screening process, I excluded articles only if there was definite evidence to justify a decision, and 20 articles were excluded based on my protocol criteria. Then, I examined the full-text of 85 articles, of which the title and abstract seemed relevant to this study or not clear enough to exclude. As a result, 48 articles were additionally excluded, and finally, 37 articles were included in this scoping review. Figure 1 summarizes the study selection process above mentioned.

Figure 1

Flow Chart of the Study Selection Process (original form from Peters et al., 2015, p. 144)



Through the two steps of the study selection process, I excluded the 68 studies in total for the following reasons:

1. Participant
 - The study was not about ECTs (n=15)
2. Contexts
 - The study was not about K–12 education (n = 8)
 - School level of the study was not exactly mentioned (n = 5)
3. Participants or contexts were mixed; it was hard to distinguish valid data (n = 5)
4. Concept
 - Agency did not mean teacher agency (n = 11)
 - The research framework lacked the conceptualization of teacher agency (n = 9)
5. The study type was not an empirical study (n=4)
6. Full-text was not available (n=5)
7. The article was not written in English (n=2)
8. The study lacked a description of data collection and analysis (n = 1)
9. The study was an additional duplicate (n = 3)

(n= the number of studies)

To elaborate, fifteen studies were not about ECTs like ECT educators and pre-service teachers; the study was not about K–12 education (n=8) such as higher education contexts; and five studies had mixed participants or contexts, so it was hard to get sufficient data to answer the research questions. Moreover, in eleven studies, agency did not mean teacher agency, but most of them meant organization; nine studies showed a lack of conceptualization of teacher agency. Although all studies in the screening process were peer-reviewed, four studies were not empirical studies (n=4); full-text was not available (n=5), articles were written in some other language than English (n=2); one study did not have enough information about its data collection and analysis; additional duplicates were identified manually (n=3). The list of included and excluded articles is attached in Appendix 2, along with the reasons.

4.4.3 Charting the data

I implemented data charting basically following the research protocol that I developed (see Section 4.3.4). First, I read through all articles and then marked meaningful sentences from them in the reference manager. Then, I charted the data on the Excel sheet, but I tried to chart the data as they were because I did not want to distort the original meaning that each author intended. However, I could not finish the data charting all at once, so I repeated reading the articles until I completed the data charting.

Based on the three research questions of my scoping review, I categorized the data into three aspects for the charting: basic descriptive information, conceptualization of ECT agency, and key influences on ECT agency. For the basic descriptive information, I extracted data as I planned in the protocol. However, for the conceptualization, I charted not only theoretical approaches to teacher agency but also the definition of it and relevant concepts as well (see Section 4.4.1). Furthermore, the ECT agency encountered not only constraints and enablers but also neutral influences. This way, I charted all the data to be ready for the data analysis.

4.4.4 Collating, summarizing and reporting the results.

The data analysis was different depending on the type of data. In basic descriptive information, I mainly counted and categorized data for the analysis. During the process, the filter function in Excel was useful because I could easily sort the data in the way I needed. For the other types of data, I used an inductive approach to content analysis as I planned in the research protocol (see Section 4.3.5). However, the analysis process between data about conceptualization and data about influences was slightly different. Precisely, I mainly used highlighter, underline, and bold to analyze the former data to identify their themes and core ideas from the charted data. On the other hand, I used ATLAS.ti for the later data because their amount was quite large, so it was hard to manage manually.

Specifically, I moved the data from Excel to MS Word and uploaded the file to ATLAS.ti. Then, I closely read all the data, and put the initial code after them.

At first, these codes were grouped like personal, interpersonal, internal school contexts, external school context, future, student, others, structure, culture, and resource and material. Then, I reorganized these groups into individual and contextual levels. For the individual level of the code group, I finalized the subgroups of the codes like past, present, future, personal, and professional. In addition, for the contextual level, the codes were categorized into societal context, educational authorities, and school context.

Lastly, I presented the result mainly in narrative terms, but I also used figures and tables to support my description. When I made the tables and figures, I paid attention to visualizing the structures and patterns of the results, so the readers of this paper can easily comprehend my intention. Reporting of all these research processes was verified with the PRISMA-ScR checklist (see Appendix 1).

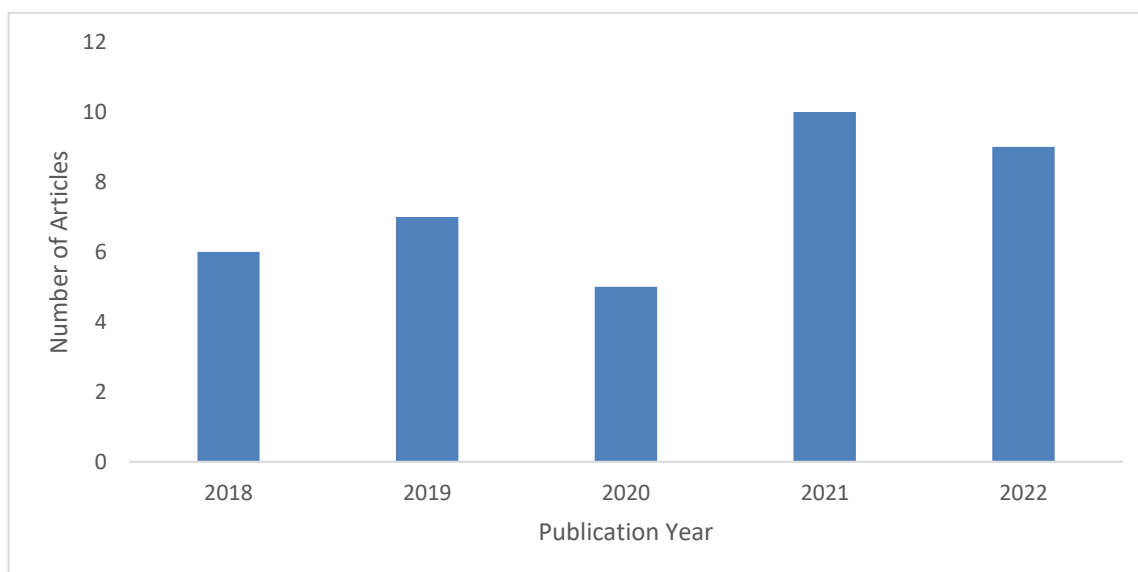
5 RESULTS

5.1 Trends of ECT Agency Studies

The scholarly articles published for five years, from 2018 to 2022, were 37 in total. Six articles were published in 2018, seven articles in 2019, five articles in 2020, ten articles in 2021, and nine articles in 2022. The number of publications increased from 2018 to 2019 but decreased in 2020. However, it increased again in 2021, which is double compared to the publications in 2020, but slightly decreased in 2022 (see Figure 2). Many researchers would note that the pandemic occurred in 2020.

Figure 2

The Number of Publications Between 2018 and 2022

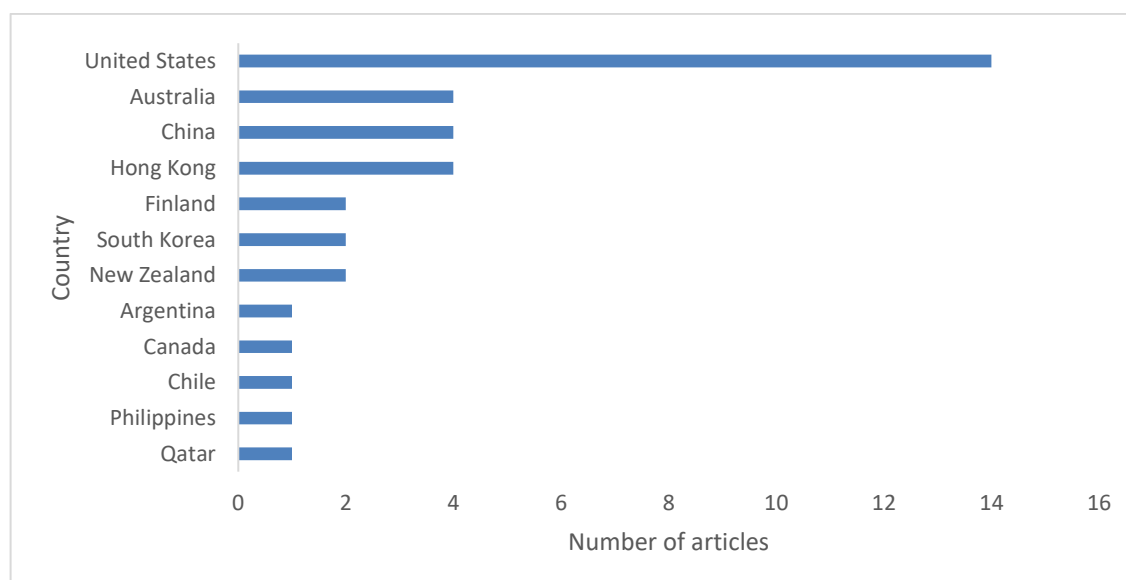


Second, Figure 3 shows the geographical distribution of the studies. The highest number of studies were conducted in the US (n=14). The next most typical country of publication was Australia (n=4), China (n=4), and Hong Kong (n=4). Remarkably, three studies in China (Wei & Chen, 2019; Wei et al., 2020; Wei et al., 2021) and three studies in Hong Kong (Huang, 2021; Huang & Yip, 2021; Huang et al., 2019) were conducted by the research team including the same researcher

each. Additionally, two studies were conducted each in Finland, South Korea, and New Zealand, and one study was conducted each in Argentina, Canada, Chile, the Philippines, and Qatar. Concerning the continent, 41 percent of studies were conducted in North America, which was affected by the number of publications in the US. In addition, Asia accounts for 33 percent, Oceania represents 16 percent, and both Europe and South America comprise 5 percent. Especially, among the European countries, Finland was the only country to conduct ECT agency studies, and there have been no studies in my data that were carried out in Africa.

Figure 3

Geographical Distribution of Study Conducted

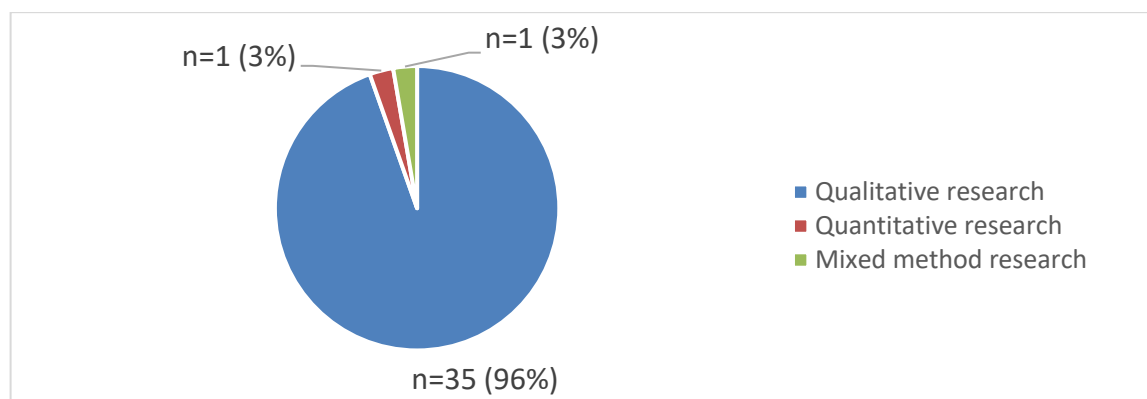


Third, Figure 4 shows the methodological approach for ECT agency studies in my data. 96 percent of reviewed papers (n=35) used a qualitative approach to examine ECT agency in K-12 education, and another three percent of studies adopted a quantitative research approach (n=1), while the other three percent used mixed methods research (n=1). To be specific, E et al. (2022) implemented quantitative research by utilizing 'professional agency in the classroom scale' to track the trajectory of professional agency of ECTs depending on the latent profile groups. On the other hand, Narayanan and Ordynans (2021) employed a

mixed-methods approach using interview and self-efficacy scales to examine how ECTs find teacher agency in the challenging context of COVID-19.

Figure 4

Distribution of Applied Research Methodologies



Moreover, Table 6 summarizes the demographics of participants in my data. Seven studies had only one participant, but only two studies researched more than 20 participants, including one quantitative study. Moreover, examining the first year of working experience (n=12) was the most common among the ECT agency studies in my data, followed by the first two years (n=7), the first five years (n=5), and the first three years (n=5). Other than that, a focus on the 3-5 years (n=2), 6 years (n=1), 7 years (n=1), 2-3 years (n=1), and the first four years (n=1) of ECT experiences were studied, but two studies did not exactly mention this information. Furthermore, seven studies took a longitudinal approach by undertaking the research when participants were in pre-service education or in a teaching practicum, and data collection lasted until the first or second year of in-service teaching.

In addition, ECTs working in diverse contexts in K-12 education were researched. Notably, ten studies examined ECTs working at multiple school levels, and 27 studies focused on the single school level, such as pre-school education (n=1), primary school (n=5), and secondary school (n=21). Regarding the teaching group, 23 studies focused on one teaching group that taught specific subjects

or had a special role, but the rest of the 14 studies did not target them. For example, there were studies about language teachers (n=9) such as ESL teachers, English teachers, and dual language teachers. Moreover, some studies focused on science teachers (n=8), math teachers (n=2), STEM teachers which included science and math teachers (n=2), music teachers (n=1), and special education teachers (n=1).

Table 6

Description of Participants' Demographics

Number of Participants	N (%)	Examined Experience of ECTs	N (%)
<5	23 (62%)	First year	12 (32%)
5-10	5 (13%)	First two years	7 (19%)
11-20	7 (19%)	First three years	5 (14%)
21-100	1 (3%)	First five years	5 (14%)
100<	1 (3%)	Others	6 (16%)
		Not mentioned	2 (5%)
School Level	N (%)	Teaching Group	N (%)
Multiple school level	10 (27%)	General/multiple teaching group	14 (38%)
Single school level		Focus on specific teaching group	
Pre-school education	1 (3%)	Language teacher	9 (24%)
Primary school	5 (13%)	Science teacher	8 (22%)
Secondary school	21 (57%)	Math teacher	2 (5%)
		STEM teacher	2 (5%)
		Music teacher	1 (3%)
		Special education teacher	1 (3%)

5.2 Conceptualization of ECT Agency

In this section, I discuss in two dimensions how the selected studies in my scoping review conceptualized ECT agency. First, I explain how previous agency theories were generally applied to the concept of teacher agency. Then, I specifically elucidate key aspects of ECTs examined through the lens of teacher agency.

5.2.1 Theoretical approaches to teacher agency

Theoretical approaches to teacher agency were identified in 24 out of 37 studies in my data. Among them, eight studies applied multiple theoretical perspectives, whereas sixteen studies applied a single perspective. Table 7 presents the main theoretical perspectives along with their key ideas.

Table 7

Main Theoretical Approaches to Teacher Agency and Their Key Ideas

Theoretical Approaches	Key Ideas
Structure-agency perspective	Teachers negotiate their agency within the structure of their work, and they can even change the structure to enhance their practice.
Socio-cultural perspective	Teacher agency interplays with the social and cultural settings in which they work and teach.
Ecological perspective	Teacher agency is a contingent phenomenon achieved within specific present contextual environments, considering the past and future of teachers
Socio-cognitive perspective	Teacher agency is an internal mechanism characterized by intentionality, forethought, self-reactiveness, and self-reflexiveness of teachers.

Initially, three papers among the sixteen studies used the structure-agency perspective, which examines teachers' practices in relation to the structures shaping their work (Marco-Bujosa et al., 2020; Olitsky, 2021; Powell). These structures can

either promote or hinder teacher agency, and when confronted with them, teachers "conform or question, resist, and challenge" their agency (Marco-Bujosa et al., 2020, p. 8). Especially, Olitsky (2021) emphasized the role of international conversation as a mediator between structure and agency by promoting "internal solidarity," drawing upon the arguments of Archer and Collins (p. 19).

Second, eight out of sixteen publications employed the socio-cultural perspective (Ashton, 2021; Chaaban & Sawalhi, 2021; Losano et al., 2018; Narian & Schlessinger, 2018; Schaefer et al., 2018; Villena-Agreda, 2020; Wei & Chen, 2019; Wong et al., 2020). This approach premised "there is an important role for socio-cultural contexts, including the tools and objects mediating human activities" (Eteläpelto et al., 2013, p. 54). Thus, teacher agency was influenced by "the structural and cultural features of society and school cultures" as well as individual teachers (Lasky, 2005, p. 900). Following the socio-cultural perspective, relational agency (see Schaefer et al., 2018) and subject-centered socio-cultural approach (see Chaaban & Sawalhi, 2021; Wei & Chen, 2019) were applied to previous studies as a sub-theory of the socio-cultural approach. The former theory focused on teachers' "capacity to align one's thoughts and actions with those of others" to address their professional problems (Edwards, 2005, p. 169). In contrast, the latter theory shed light on the role of agency in formulating subjects' identity as well as interacting with the context and situation.

Third, ecological perspectives were identified in three out of the sixteen studies (Connors & Bengtson, 2020; Lim & Yun, 2022; Lu et al., 2021). According to the ecological perspective, teacher agency is defined not by what teachers possess but by what they can achieve within specific contextual environments, making it a contingent phenomenon (Priestley et al., 2015). Moreover, this perspective viewed teacher agency within the temporal dimension of teachers' past, present, and future (Priestley et al., 2015). Particularly, Lu et al. (2021) shed light on the role of teachers' beliefs in relation to teacher agency achievement.

Additionally, one study employed distributive agency where the approach is based on critical posthumanism (see Strom & Martin, 2022). Moreover, Heikkilä et al. (2022) addressed relational sociology to argue that teacher agency is

"inseparable from the unfolding dynamics of situations" (p. 400). In this sense, this approach aligned closely with the ecological approach.

In multi-theoretical approaches, the socio-cognitive perspective was applied with other theoretical approaches (see Glas et al., 2021; Huang & Yip, 2021; Narayanan & Ordynans, 2022; Wray & Richmond, 2018). The theoretical perspective defined agency as an internal mechanism characterized by the intentionality, forethought, self-reactiveness, and self-reflectiveness of individuals (Bandura, 2001). Furthermore, possible selves theory (see Narayanan & Ordynans, 2022) and social capital theory (see Lane & Sweeny, 2019) were additionally identified in conjunction with the aforementioned theoretical approaches.

In conclusion, the theoretical approach to teacher agency in my data varied depending on perspectives regarding agency, whether defined as an internal mechanism or an interplay with external circumstances. The theoretical approach also considered the context surrounding teachers and the relationship between individual teachers and their contexts, often combining these theories in various ways to create new frameworks that better suited researchers' understanding.

5.2.2 Key aspects of ECT agency

Taking control of professional practices

The first key aspect of ECT agency, taking control of professional practice, was identified in the thirteen studies. Included studies described external demands on ECTs' teaching practices such as educational reform requirements (e.g., Lockton & Fargason, 2019; Olitsky, 2021) and performance-driven teaching and learning customs (e.g., Lu et al., 2021; Narian & Schlessinger). These contexts, which pressure teachers to comply, were pointed out to either constrain or support ECTs' vision of teaching (Connors & Bengtson, 2020). However, it was addressed that ECTs can align these expectations with their "vision of a 'teacher self'" by resisting and appropriating them (Wong et al., 2020, p. 154).

In this perspective, ECTs made decisions on their practice, either maintaining the existing practice or requesting specific professional action (Lockton & Fargason, 2019). This decision entailed resistance to deficit views on education and consideration of satisfying students' needs (Marco-Bujosa et al., 2020). In this regard, Lue et al. (2021) argued that teacher agency places individual teachers at the center of their professional practice to fulfill their "motivations, goals, and beliefs" (p. 28).

Thus, this aspect of agency in the previous studies was defined as taking "control of their teaching" (Huang & Yi, 2021, p. 1). Although not always being consistent with the dominant frames of what they should do as teachers, ECTs could make their own judgments through teacher agency in the reviewed studies (Sullivan et al., 2021, p. 400). Huang et al. (2019) insisted that this aspect of teacher agency is related to the development of professional autonomy (Huang et al., 2019).

Developing professional identity

Ten studies conceptualized a second key aspect of ECT agency: developing professional identity. For example, Lasano et al. (2018) demonstrated how ECTs negotiated and shaped their professional identity through teacher agency. This aspect of agency, in terms of teacher identity development, was highlighted by Huang (2021) as well. According to Cobb (2022), this development could be embodied in a way that "either defends, negotiates, or transforms their identity" (p. 3). Ro (2019) emphasized the role of reflection in this process. Moreover, Chaaban and Sawalhi (2021) operationalized the identity to leadership stance, which is constituted by "teachers' beliefs, attitudes, and values about teaching, learning, and leadership," and explained that teacher agency promotes this stance (p. 549).

Furthermore, this aspect of the ECT agency was addressed in relation to professional development. To elaborate, Wei et al. (2021) posited that professional agency is a core element of teacher identity, which indicated teachers' need for active engagement in their professional development. "This development is

characterized by increasing clarity and coherence of teacher identity," and it often entailed teacher agency (Brunetti & Marston, 2018, p. 876).

However, the relationship between identity and agency was not conceptualized only unilaterally. Three studies described how ECT agency and identity interplay with each other (Wei & Chen, 2019; Wei et al., 2020; Wei et al., 2021).

Addressing professional challenges

Four studies conceptualized a third key aspect of ECT agency: addressing professional challenges. These studies defined challenging situations as ECTs, such as struggling classroom situations (Ashton, 2021). In addition, ECTs' working experiences as a whole, particularly in their first few years, were also defined as challenging settings in the previous studies (Gan, 2018; Hong et al., 2018).

However, reviewed studies elaborated that ECTs could deal with their challenges by seeking support, managing on their own, and changing the situations that trouble them. Ashton (2021) insisted that this aspect of ECTs is "developing and exercising their professional agency in responding to professional challenges they face" (pp. 244-245). Especially, it was illustrated that ECTs with a strong sense of agency could actively address the challenges to overcome them, while those with a weak sense of agency might passively respond to the situations (Hong et al., 2018).

Therefore, the four studies shed light on how ECTs themselves played a pivotal role in coping with the difficulties they encountered and adapting to their schools by leveraging their agency (Gan, 2018). In other words, teacher agency enabled ECTs "'to get ahead' of the problem, 'take a beating,' and keep going" by being resilient (Sheridan, 2022, p. 8).

Other aspects of ECT agency

Additional three conceptualizations emerged from the included studies. Specifically, teacher agency was characterized as "teachers' ability to prepare the way for actively and intentionally managing new learning in the classroom" in one

study (E et al., 2022, p. 170). For instance, teachers, perceiving students as a resource for their learning, created cooperative learning environments with students and enhanced their teaching practices through reflection. Consequently, teacher agency fostered teachers' learning and vice versa (E et al., 2022).

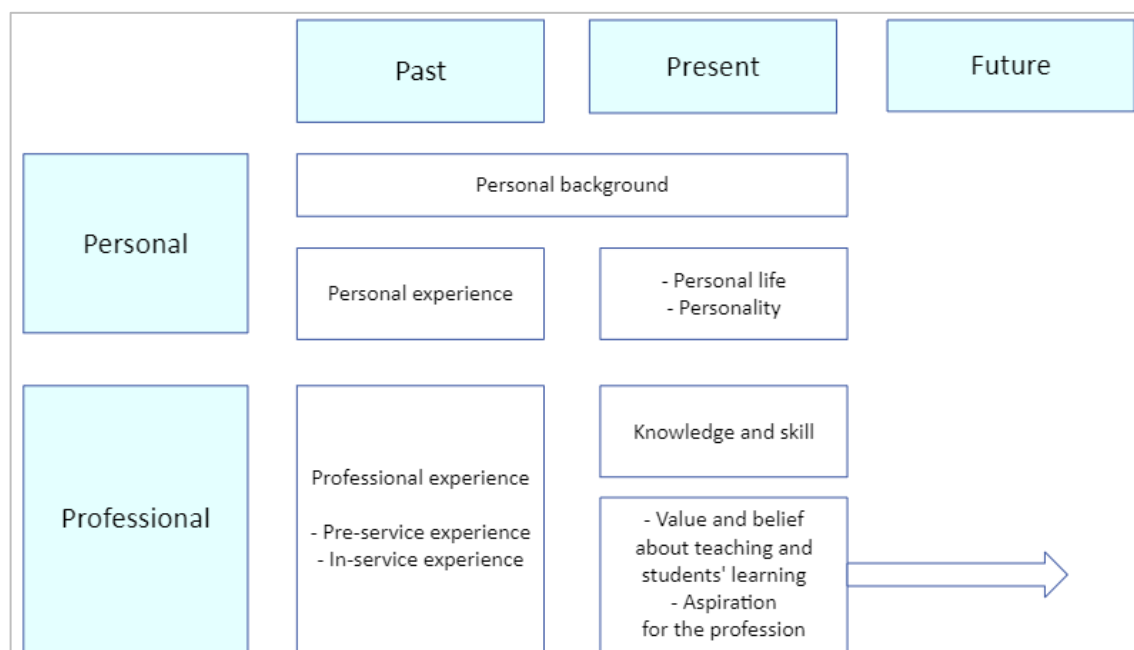
In other studies, teacher agency was defined as teachers' capacity to address students' needs and facilitate their learning in two studies. Specifically, Glas et al. (2021) noted that teacher agency is a “capacity to maintain or change learner motivation through their own actions” (p. 2). Additionally, Kettle et al. (2022) described teacher agency in disadvantaged schools as the social engagement of teachers to meet the needs of students.

Lastly, Lane and Sweeny (2019) delineated how ECTs built networks using their agency. This study highlighted that ECTs did not just establish connections with others in their school; they exercised agency by intentionally choosing to form either weak or strong connections.

5.3 Key Influences on ECT Agency

Key influences on ECT agency were identified across two levels in my data: the individual level and the contextual level. At the individual level, each aspect was categorized into personal, professional, and temporal dimensions (see Figure 5).

At the individual level, both personal and professional experiences were significantly addressed as influences on ECT agency, considering teachers' past, present, and future. In the personal realm of the past, studies by Huang and Yip (2021) and Wei and Chen (2019) presented how ECTs' own experiences as students and their interactions with teachers impacted their agency. Personal backgrounds were also noteworthy, as they could be categorized in both the present and past dimensions. Wong et al. (2020) delved into this aspect, highlighting how personal backgrounds, such as immigrant experiences, could shape ECT agency. For instance, one participant in their research, who had an immigrant background, reflected on personal experiences to support her bilingual students. This illustrated how a teacher's personal background intersected with their present identity, impacting their professional agency.

Figure 5*Individual Level of Influences on ECT Agency*

On the professional side of the past, both pre-service and in-service experiences played crucial roles for the ECT agency. Previous research highlighted those pre-service training experiences, including teaching practice (e.g., Cobb, 2022) and teacher education (e.g., Lockton & Fargason, 2019), shaped the skills and knowledge ECTs draw upon in their decision-making (e.g., Chaaban & Sawalhi, 2021). Additionally, pre-service education had an impact on the teacher identity and philosophy that underpin ECT agency (e.g., Ro, 2019). Moreover, in-service teaching experiences influenced the ECT agency, and specifically, positive initial teaching experiences could encourage confidence in ECTs' practice (e.g., Connors & Bengtson, 2020). In contrast, negative experiences, such as insulting feedback, could dampen ECTs' agentic attitude (e.g., Huang, 2021).

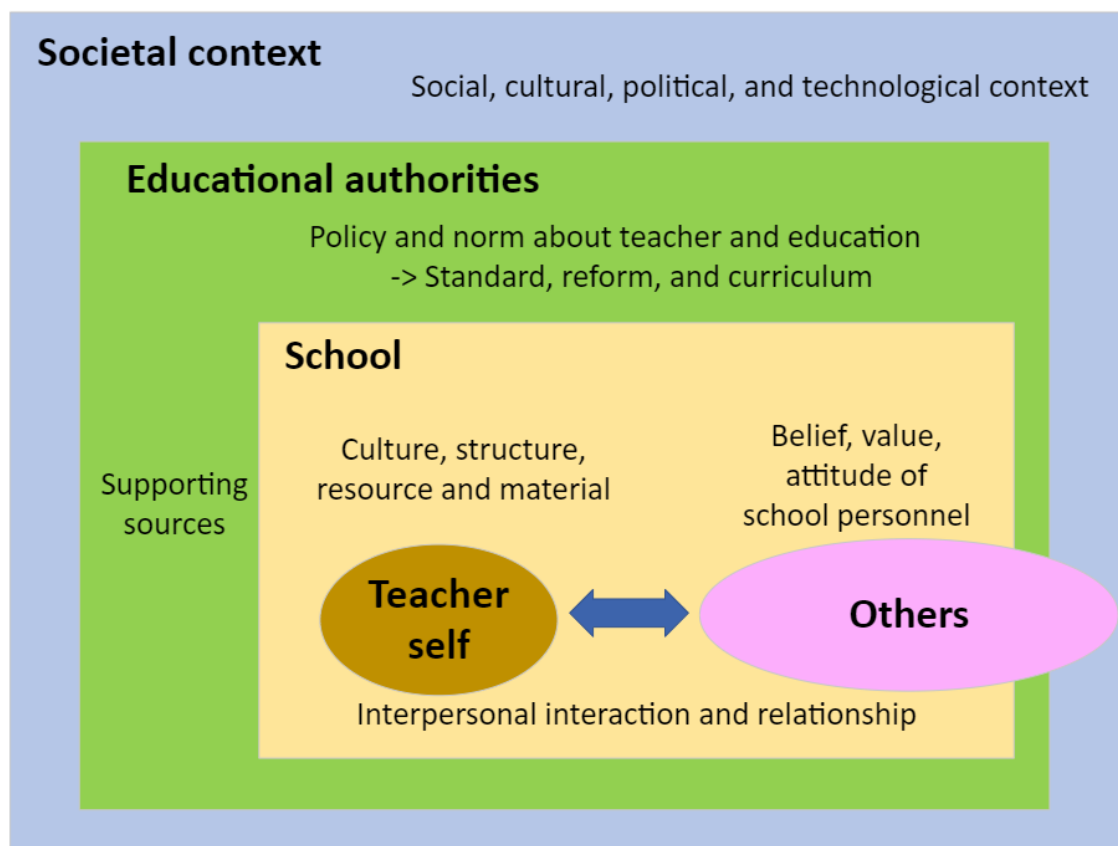
Likewise, in the present dimension, significant influences were identified from both personal and professional perspectives. For example, in their personal lives, teachers frequently cited "tension between work and family life" as an influence leading them to leave the profession (e.g., Huang, 2021, p. 10). Hong et al.

(2018) also pointed out the importance of work and life balance of teachers. Additionally, personality played a role in how ECTs navigated various contexts (e.g., Sheridan, 2022). For instance, Wei and Chen (2019) provided a comparison of how ECTs with different personalities react to curriculum reform.

In terms of professional aspects in the present context, previous studies highlighted key influences like knowledge and skills understanding curriculum (e.g., Ashton, 2021) and addressing students' needs effectively (e.g., Huang and Yip, 2021). In particular, researchers noted that the accumulation of working experience can enhance knowledge of ECTs (e.g., Ashton, 2021; Glas et al., 2021). Additionally, the value and belief of ECTs in their teaching and students' learning were highlighted to understand the motivations underlying ECT agency (e.g., Sullivan et al., 2021; Wray & Richmond, 2018). ECTs' professional beliefs and values implied what they considered important regarding the role of a teacher, as stated in their teaching philosophy. Finally, ECTs' aspirations for their future careers were evident in their desires (e.g., Connors & Bengtson, 2020), goals (e.g., Narayanan & Ordynans, 2022), and envisioned future (e.g., Marco-Bujosa et al., 2020). While teachers' beliefs, values, and aspirations were rooted in the present, they also served as guides toward the ideal future they aim to pursue in their teaching careers.

In addition to the individual level, three levels of contexts where ECTs were working indicated key influences on ECT agency: societal context, educational authorities, and the school. Figure 6 summarizes these influences.

Each level of context implies macro-, meso-, and micro-level of contexts within which ECTs work. At the broadest level, the societal context, encompassing social, cultural, political, and technological factors, affected ECT agency. For instance, societal contexts like the COVID-19 pandemic (e.g., Narayanan & Ordynans, 2022) and indigenous cultures where schools are located (e.g., Kettle et al., 2022) presented both opportunities and challenges for ECT agency. In addition, the social movement within the country (e.g., Huang, 2021) and the availability of technology also influenced how ECTs enacted their teacher agency (e.g., Heikkilä et al., 2022).

Figure 6*Contextual Level of Influences on ECT Agency*

In addition, educational authorities primarily influenced ECT agency through educational policies and norms, including standards, reforms, and curricula (e.g., Cobb, 2022; Sullivan et al., 2021). These were often characterized as standardization and accountability measures for teachers that originated from neoliberalism (Owen, 2019). However, Lockton and Fargason (2019) implied that school situations could affect the implementation of these policies and norms, resulting in different impacts on the ECT agency. Moreover, ECTs received support from sources outside of school. For instance, ECTs regularly met with a local partner university (Dodman, 2022) and received an external mentoring coach (Wray & Richmond, 2018). Not only that, but employment security also affected how ECTs actively enacted their agency (e.g., Strom & Martin, 2022). Even though the em-

ployment contract was between the school and the teacher, from a broader perspective, it pertained to how educational policies ensured the job stability of teachers.

Lastly, influences of school context were identified in three areas: culture, structure, resource, and material; belief, value, and attitude of school personnel; interpersonal interactions and relationships. Many studies pointed out school culture as a crucial influence, encompassing attitudes, beliefs, values, and rituals that school members consider important (e.g., Schaefer et al., 2021). This school culture was described using words such as trust (Glas et al., 2021), collaborative (Huang, 2021), supportive (Wray & Richmond, 2018), flexible (Huang et al., 2019), encouraging (Lu et al., 2021), rigid (Chaaban & Sawalhi, 2021), individualism (Gan, 2018), and pressure to achieve good grades (Hong et al., 2018).

On top of that, school structures influenced ECT agency by organizing the teaching and work of ECTs. For example, the responsibilities imposed on ECTs, both inside and outside the classroom, affected their agency (e.g., Ashton, 2021). Apart from teaching, ECTs were also assigned administrative tasks, and they reported that heavy workload was a constraint on their agency (e.g., Huang & Yip, 2021). Additionally, school space (e.g., Sheridan, 2022), school schedule (e.g., Lockton & Fargason, 2019), and the composition of school members like students and colleagues (e.g., Owen, 2019), were influential. Moreover, teacher activities aimed at supporting or fostering cooperation among teachers could serve as influences. However, ECTs perceived them either as constraints or enablers, depending on the situation and atmosphere of the activity (e.g., Schaefer et al., 2021). Furthermore, school norms (e.g., Lockton & Fargason, 2019), policies (e.g., Marco-Bujosa et al., 2020), and rules (e.g., Lu et al., 2021) also influenced ECT agency, which tended to be perceived as constraints when they strictly restricted what ECTs could do (e.g., Marco-Bujosa et al., 2020).

Regarding resources and materials, previous studies discussed physical materials like teacher guidebooks (e.g., Wei & Chen, 2019), along with human

resources such as school social worker (e.g., Chaaban & Sawalhi, 2021). Additionally, resources to support teachers in their professional development and induction were also identified (e.g., Ashton, 2021).

Other individuals were also crucial influences on ECT agency. While professional networks outside of the school (Marco-Bujosa et al., 2020) and personal social connections also affected ECT agency (Sheridan, 2022), previous studies mainly highlighted the role of school personnel such as administrators, colleagues, seniors, school staff, and students. Interestingly, these individuals not only constituted the school context but also held beliefs and values that were reflected in their attitudes, interactions, and relationships with ECTs (e.g., Olitsky, 2021; Wray & Richmond, 2018). These interpersonal interactions and relationships, such as collaboration, communications, and support, were perceived by ECTs as key influences on their agency (e.g., Brunetti & Marston, 2018; Dodman, 2022). Notably, administrators not only provided support to ECTs directly (e.g., Schaefer et al., 2021), but they also indirectly affected ECT agency through school structure and culture by means of their leadership (e.g., Connors & Bengtson, 2020).

In summary, ECT agency was influenced by their life history, encompassing both personal and professional aspects. Previous studies particularly emphasized the role of pre-service education experiences in shaping their beliefs, values, and capacities for in-service teaching. However, the diverse contexts in which they work could either constrain or enable ECT agency, including interpersonal elements. Nonetheless, ECTs could choose to exercise their agency based on their future orientation toward teaching and career development.

6 DISCUSSION

6.1 Critical Discussion About the Results

In summary, this scoping review aimed to explore the current state of research on ECT agency in K-12 education and provide an overview of the topic. Specifically, the research objective was to achieve this aim by examining general trends in the field, understanding the conceptualization of ECT agency, and identifying key influences on it. A total of 37 scholarly articles were identified based on pre-defined inclusion criteria. This scoping review analyzed the number of publications, geographical distribution, employed research methodologies, and demographics of participants to describe the general trends of the 37 articles. Additionally, the conceptualization of ECT agency was explored by identifying existing agency theories and examining key aspects of the concept. Lastly, key influences on ECT agency were identified at both individual and contextual levels.

Reflecting on the results, firstly, the experience of ECTs extends beyond mere "reality shock." Teacher agency sheds light on the proactive decisions and actions of ECTs as they navigate their professional environments. The reviewed studies identified three main aspects of ECT agency: taking control of professional practice, developing professional identity, and addressing challenges. Despite encountering obstacles while adjusting to their roles, ECTs can use their professional agency in these aspects. Therefore, the findings suggest moving away from viewing ECTs through a lens of immaturity, as advocated by Correa et al. (2015). In addition, teacher agency proves to be a valuable concept for comprehending the proactive involvement of ECTs in their work, as argued by Kelchtermans (2019).

Furthermore, the reviewed studies primarily focused on qualitative research with a small number of participants. This might stem from the context-dependent nature of teacher agency, which implies that understanding teacher agency requires a dynamic consideration of personal and contextual factors within the teacher's work environment. Hence, previous studies about ECT

agency tend to prefer in-depth examination of specific situations rather than generalization through a quantitative approach. This imbalance in methodological approaches to teacher agency research has been noted in prior studies as well (e.g., Cong-Lem, 2021; Deschênes & Parent, 2022). Researchers have also insisted on the value of quantitative research (Hadar & Benish-Weisman, 2019) and mixed-method approaches to deepen insight into agency (Jääskelä et al., 2017).

Considering the key influences, both individual and contextual elements were crucial in shaping ECT agency. Specifically, individual-level influences encompassed temporal, personal, and professional aspects. Although teacher agency is inherently tied to one's profession, the results revealed a close interplay between personal lives and professional agency. Moreover, emphasis on the temporal perspective of influences highlights the importance of understanding that agency is developed throughout an individual's life journey (Emirbayer & Mische, 1998). Additionally, the conceptualization of ECT agency in terms of professional identity underscores the role of agency in shaping professional identity, as asserted by Eteläpelto et al. (2013). Especially during the early career stage, which marks the transitional period from pre-service to in-service teaching, the reviewed studies shed light on how ECTs negotiate their professional identity in terms of teacher agency.

The contextual influences were identified at various levels. Although the research results reported these influences separately, they were closely interrelated. As Priestley et al. (2015) emphasized, the present context either enabled or constrained ECT agency in the reviewed study, and ECTs could assess the situation to determine the feasibility of their practices. Furthermore, interpersonal influences were also identified at the contextual level. However, as I mentioned in the results, they not only constituted the context but also implied the individual self, suggesting their potential as another agent.

Taken together, this scoping review illustrated how previous studies methodologically, conceptually, and practically explored ECT agency in K-12 education, affirming the potential role of ECTs as active agents.

6.2 Limitation of the Research

First, this scoping review was conducted by a single researcher, although some researchers recommended a team approach to conduct scoping reviews (e.g., Levac et al., 2010). In scoping reviews, researchers ensure the reliability and rigor of a study with a team approach by reaching consensus among the members (see Westphaln et al., 2021). However, if one researcher does a scoping review, there is no way to iron out the ambiguity they would encounter during the process, and all the decisions rely on a single researcher. In this research, clear-cut decisions were not always possible in spite of *a priori* protocol, especially when selecting studies and extracting data from them. This was because every study has a unique structure and idea, and my research protocol was not always perfectly applicable. Therefore, a pilot study is recommended in the study selection and data charting phases with potentially relevant papers to prepare for variability when doing scoping reviews (Peters et al., 2022).

Second, this research includes articles written exclusively in English, despite dealing with international studies. As teacher agency is context dependent, it would be possible to understand the dynamics of teacher agency by examining studies implemented in various contexts, like countries. However, I could not include articles published in other languages due to practical limitations. Even though English is a lingua franca in academia, it is undeniable that I missed some viewpoints on the topic because of the language issue. Walpole (2019) pointed out that including papers written in other than English in a review study can offer meaningful insight coming from the diverse context, and it is a way to “value research regardless of the language of the participants and researchers” (p. 127). Therefore, research team members with different language backgrounds can conduct a scoping review, researchers can use an online translation tool, or they can seek an informal translator as an alternative solution (Walpole, 2019). In addition, publishing review articles focused on a specific country or area in English can share regional insight beyond the language barrier (e.g., KC et al., 2023).

Finally, it is possible to provide a more comprehensive view of the topic by including a wider range of articles. As my goal was to present a comprehensive

overview of the studies on ECT agency, I could have achieved a more rigorous perspective if I had included studies without any publication time limit. For example, the studies published before the period I set could suggest foundational ideas for the included studies, and studies after the period could provide fresh views. Although I only utilized online databases, other sources, such as "reference lists, hand-searching of key journals, and existing networks of relevant organizations and conferences," can also provide relevant literature (Arksey & O'Malley, 2005, p. 23). However, these limitations in this research were the best "trade-off between breadth, comprehensiveness, and feasibility" (Levac et al., 2010, p. 5).

6.3 Suggestion for the Future Studies

The studies in my scoping review emphasized the role of pre-service teacher education and the working context of ECTs regarding their professional agency. To be specific, student teachers can acquire the skills and knowledge necessary for in-service teachers, and they can develop perspectives on good teaching and student learning. Even though these capacities and beliefs are formed during the pre-service period, they can be maintained when teachers start their in-service teaching, and they impact the way ECTs exercise agency in their teaching practice.

However, the contexts in which ECTs are working can either enable or constrain them to pursue and practice what they believe is right as teachers. Especially, school is where ECTs spend most of their working hours and engage in most of their teaching practices. In this research, I pointed out that school contexts, such as culture, structure, and interpersonal interaction, are key influences in understanding ECT agency. Therefore, it is crucial to consider the school context in terms of supporting the ECT agency.

In particular, many studies that I reviewed in my research highlighted the role of principals in not only directly supporting ECTs but also influencing the school environment, which would affect the ECT agency as a result. Principals, for example, can improve ECT agency by providing "relational support" to ECTs

and creating a positive atmosphere within the school (Schaefer et al., 2021, p. 316). On the contrary, strict school culture enforced by the principal can reduce ECT agency, as depicted by Chaaban and Sawalhi (2021). Therefore, principals can support ECTs in “sustain [their] commitment to and trust in teaching” (Sheridan et al., 2022, p. 3).

Furthermore, the way educational policy is implemented in a school can be different depending on the school situation. Especially, how the principal addresses the external demand can affect securing the professional space that ECTs can enact their own practices in (see Olitsky, 2021). In this regard, “principals can serve as buffers as they mediate the effects of external mandates on the practices of teachers” (Connors & Bengtson, 2020, p. 330).

As Sheridan et al. (2022) noted the importance of principals’ roles, “School leaders take responsibility for providing a link between the hopes and aspirations of ECTs and the reality of teaching” (p. 10). While the crucial role of the principal in the ECT agency has been acknowledged for some time (see Eteläpelto et al., 2015), there is a lack of studies specifically addressing this aspect. Therefore, I suggest the following question for future studies on ECT agency:

How does the school context influence the ECT agency, and especially, what is the role of the principal in this regard?

7 CONCLUSION

This scoping review emphasized the active role of ECTs in their work and teaching. Teacher agency sheds light on this active perspective of ECTs, encompassing their ability to take control of professional practices, to develop professional identities, and to address professional challenges. Furthermore, existing theories of agency offer frameworks to understand these aspects of ECTs.

Considering that teacher agency is closely related to both context and individual teachers, conducting research with diverse groups of teachers in different contexts, like countries, can provide valuable insights into ECT agency. Additionally, employing various methodological approaches in studies can help bridge the gap in our current understanding of the ECT agency.

On a practical note, pre-service teacher education plays a crucial role in fostering the capacities, values, and beliefs of student teachers, which are essential for their in-service teaching practice. However, it is equally important to understand and support ECTs within the present contexts in which they work.

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APPENDICES

Appendix 1 PRISMA-ScR Checklist

Section	Item	PRISMA-ScR checklist item	Reported on page #
Title			
Title	1	Identify the report as a scoping review.	p. 1
Abstract			
Structured summary	2	Provide a structured summary including, as applicable: background, objectives, eligibility criteria, sources of evidence, charting methods, results and conclusions that relate to the review question(s) and objective(s).	p. 2
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review question(s)/objective(s) lend themselves to a scoping review approach.	p. 7
Objectives	4	Provide an explicit statement of the question(s) and objective(s) being addressed with reference to their key elements (e.g., population or participants, concepts and context), or other relevant key elements used to conceptualize the review question(s) and/or objective(s).	p. 7, p.18
Methods			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., web address), and, if available, provide registration information including registration number.	pp 23 - 32
Eligibility criteria	6	Specify the characteristics of the sources of evidence (e.g., years considered, language, publication status) used as criteria for eligibility, and provide a rationale.	pp. 27 - 29 pp. 32 - 34
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with authors to identify additional sources) in the search, as well as the date the most recent search was executed.	p. 25 p. 35
Search	8	Present the full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	pp. 25 - 28

Section	Item	PRISMA-ScR checklist item	Reported on page #
Selection of sources of evidence	9	State the process for selecting sources of evidence (i.e., screening, eligibility) included in the scoping review	pp. 28 - 30 pp. 35 - 36
Data charting process	10	Describe the methods of charting data from the included sources of evidence (e.g., piloted forms; forms that have been tested by the team before their use, whether data charting was done independently, in duplicate) and any processes for obtaining and confirming data from investigators.	p. 30 p. 37
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	pp. 78-89
Critical appraisal of individual sources of evidence	12	<i>If done</i> , provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	X
Summary measures	13	<i>Not applicable for scoping reviews.</i>	
Synthesis of results	14	Describe the methods of handling and summarizing the data that were charted.	pp. 31 - 32 pp. 37 - 38
Risk of bias across studies	15	<i>Not applicable for scoping reviews.</i>	
Additional analyses	16	<i>Not applicable for scoping reviews.</i>	
Results			
Selection of sources of evidence	17	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	pp. 35-36
Characteristics of sources of evidence	18	For each source of evidence, present characteristics for which data were charted and provide the citations.	pp. 39-53
Critical appraisal within sources of evidence	19	<i>If done</i> , present data on critical appraisal of included sources of evidence (see item 12).	X
Results of individual sources of evidence	20	For each included source of evidence, present the relevant data that were charted that relate to the review question(s) and objective(s).	pp. 39-53
Synthesis of results	21	Summarize and/or present the charting results as they relate to the review question(s) and objective(s).	pp. 39-53

Section	Item	PRISMA-ScR checklist item	Reported on page #
Risk of bias across studies	22	<i>Not applicable for scoping reviews.</i>	
Additional analyses	23	<i>Not applicable for scoping reviews.</i>	
Discussion			
Summary of evidence	24	Summarize the main results (including an overview of concepts, themes, and types of evidence available), explain how they relate to the review question(s) and objectives, and consider the relevance to key groups.	pp. 54-5
Limitations	25	Discuss the limitations of the scoping review process.	pp. 56- 57
Conclusions	26	Provide a general interpretation of the results with respect to the review question(s) and objective(s), as well as potential implications and/or next steps.	p. 59
Funding			
Funding	27	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	X

Mini-glossary of PRISMA-ScR terms

Charting – The process of data extraction in a scoping review is referred to as ‘data charting’, as per the Arksey and O’Malley (2005) and Levac et al. (2010) frameworks and the JBI guidance (2015, 2017).

Critical appraisal – Refers to the process of systematically examining research evidence to assess its validity, results and relevance before using it to inform a decision. This terminology is used for items 12 and 19, instead of ‘risk of bias’ (which is more applicable to systematic reviews of interventions) to be inclusive and acknowledge the various sources of evidence that may be included in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, policy documents).

Information sources - This is where sources of evidence (see definition) are compiled from such as, bibliographic databases, social media platforms, websites, etc.

Sources of evidence – A more inclusive/ heterogeneous term is used to account for the fact that different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, policy documents) may be eligible in a scoping review, as opposed to only studies. This is not to be confused with information sources (see definition).

Appendix 2 Database Searching Result and the Reasons for Exclusion

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
1	Allen, L. Q. (2018). Teacher leadership and the advancement of teacher agency	ERIC, WoS, SCOPUS	-	Exclude	This is not an empirical study
2	Amott, P. (2021). Narrative practices in developing professional identities: Issues of objectivity and agency	ERIC, WoS, SCOPUS	-	Exclude	Research is not about ECTs
3 ⁴	Ashton, K. (2021). Novice teacher agency in the multi-level language classroom	ERIC, SCOPUS	-	Include	
4	Atai, M. R., Nazari, M., & Hamidi, F. (2022). Novice EAP teacher identity construction: A qualitative study from Iran	SCOPUS	-	Exclude	Research is not about K-12 education
5	Bamber, P., Bullivant, A., Clark, A., & Lundie, D. (2019). Beginning teacher agency in the enactment of fundamental British values: A multi-method case study	ERIC, SCOPUS	-	Exclude	Research is not about ECTs
6	Barnhart, T. (2020). Co-innovating a paradigm shift from a pandemic	ERIC	-	Exclude	This is not an empirical study
7	Belford, N., Tudball, L., & Kewalramani, S. (2020). Research-informed “immersive” professional learning with pre-service teachers in schools	WoS	Exclude		Research is not about ECTs
8	Ben-Harush, A., & Orland-Barak, L. (2019). Triadic mentoring in early childhood teacher education: The role of relational agency	WoS	Exclude		Research is not about ECTs
9	Betteney, M., Barnard, J., & Lambirth, A. (2018). Mentor, colleague, co-learner and judge: Using Bourdieu to evaluate the motivations of mentors of newly qualified teachers	ERIC, WoS, SCOPUS	-	Exclude	Research is not about ECTs

³ ‘-’ means this article moved on to the next stage for full text examination.

⁴ I highlighted finally included articles like this.

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
10	Bousted, M. (2020). Ofsted: A problem in search of a solution	ERIC	-	Exclude	Full-text is not available
11	Brunetti, G. J., & Marston, S. H. (2018). A trajectory of teacher development in early and mid-career	ERIC	-	Include	
12	Cato, H., & Walker, K. (2022). The influences of teacher knowledge on qualitative writing assessment	ERIC	-	Exclude	Agency does not mean teacher agency
13	Chaaban, Y., & Sawalhi, R. (2021). A professional agency perspective on novice teachers' development of a teacher leadership stance	ERIC	-	Include	
14	Chasteen, S. V., & Chattergoon, R. (2020). Insights from the physics and astronomy new faculty workshop: How do new physics faculty teach?	ERIC	-	Exclude	Research is not about K-12 education
15	Cobb, D. J. (2022). Metaphorically drawing the transition into teaching: What early career teachers reveal about identity, resilience and agency	SCOPUS	-	Include	
16	Connolly, M., Hadfield, M., Barnes, Y., & Snook, J. (2018). The accommodation of contested identities: The impact of participation in a practice-based masters programme on beginning teachers' professional identity and sense of agency	WoS, SCOPUS	-	Exclude	School level is not exactly mentioned
17	Connors, S. P., & Bengtson, E. (2020). Understanding teacher agency and organizational response to reform mandates	ERIC, SCOPUS	-	Include	
18	Cooper, R., Farah, A., & Mrstik, S. (2020a). Preparing teacher candidates to teach online: A case study of one college's design and implementation plan	ERIC, SCOPUS	Exclude		This is a duplicate
19	Cooper, R., Farah, A., & Mrstik, S. (2020b). Preparing teacher candidates to teach online: A case study of one college's design and implementation plan	ERIC, SCOPUS	Exclude		Research is not about ECTs
20	DePalma, R., Zapico-Barbeito, M.-H., & Sobrino-Freire, I. (2018). Future teachers as agents of language revitalisation: The case of Galician early childhood education	ERIC, WoS, SCOPUS	Exclude		Research is not about ECTs

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
21	Dodman, S. L. (2022). Learning, leadership, and agency: A case study of teacher-initiated professional development	ERIC, SCOPUS	-	Include	
22	Donaldson, M. L., & Woulfin, S. (2018). From tinkering to going "rogue": How principals use agency when enacting new teacher evaluation systems	ERIC, WoS, SCOPUS	Exclude		Research is not about ECTs
23	E, L., Toom, A., Sullanmaa, J., Pietarinen, J., Soini, T., & Pyhältö, K. (2022). How does teachers' professional agency in the classroom change in the professional transition from early career teachers to more experienced ones?	ERIC, SCOPUS	-	Include	
24	Fedorov, O., Zhuravleva, O., & Polyakova, T. (2018). Educational strategemes in the design of supplementary professional teacher education programs: Setting the priorities	WoS	-	Exclude	Language is not English
25	Gan, Z. (2018). Success and failure in first-year teaching: Mainland Chinese ESL teachers in Hong Kong schools	ERIC, WoS, SCOPUS	-	Include	
26	Gawlicz, K. (2022). "I felt as if I was becoming myself anew": Transformative learning through action research projects carried out by beginner teachers	ERIC	-	Exclude	Conceptualization of teacher agency is lack in the research framework
27	Ghafarpour, H., & Moinzadeh, A. (2020). A dynamic systems analysis of classrooms: Teacher experience and student motivation	ERIC	-	Exclude	Research is not about K-12 education
28	Glas, K., Martínez-Miranda, M., & Dittmar, P. (2021). Novice teachers' developing beliefs on learner motivation: An agentic perspective	SCOPUS	-	Include	
29	Haim, O., Orland-Barak, L., & Goldberg, T. (2022). The role of linguistic and cultural repertoire in novice bilingual and multilingual EFL teachers' induction period.	ERIC, SCOPUS	-	Exclude	Conceptualization of teacher agency is lack in the research framework

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
30	Harman, R., Bui, K., Cardozo-Gaibisso, L., Dominguez, M. V., Buxton, C. A., & Fu, S. (2022). Systemic functional multimodal discourse analysis: Multimodal composing and civic Agency of multilingual youth	ERIC	Exclude		Research is not about ECTs
31	Heikkilä, M., Iiskala, T., Mikkilä-Erdmann, M., & Warinowski, A. (2022). Exploring the relational nature of teachers' agency negotiation through master- and counter-narratives	ERIC, SCOPUS	-	Include	
32	Hemmi, K., Krzywacki, H., & Liljekvist, Y. (2019). Challenging traditional classroom practices: Swedish teachers' interplay with Finnish curriculum materials	ERIC, WoS, SCOPUS	-	Exclude	Mixed participants, hard to distinguish enough information focusing on ECTs
33	Holdheide, L., & Lachlan-Haché, L. (2019). Learner-ready to expert practitioner: Academy supports teachers' transitions while addressing equity	ERIC	-	Exclude	Agency does not mean teacher agency
34	Hong, J., Day, C., & Greene, B. (2018). The construction of early career teachers' identities: Coping or managing?	WoS	-	Include	
35	Hu, S., Torphy, K. T., Evert, K., & Lane, J. L. (2020a). From cloud to classroom: Mathematics teachers' planning and enactment of resources accessed within virtual spaces	ERIC, WoS, SCOPUS	Exclude		This is a duplicate
36	Hu, S., Torphy, K. T., Evert, K., & Lane, J. L. (2020b). From cloud to classroom: Mathematics teachers' planning and enactment of resources accessed within virtual spaces	ERIC, WoS, SCOPUS	-	Exclude	Conceptualization of teacher agency is lack in the research framework
37	Huang, J. (2021). Sustainability of professional development: A longitudinal case study of an early career ESL teacher's agency and identity	WoS	-	Include	
38	Huang, J., Lock, K., & Teng, F. (2019). Autonomy in English language teaching: A case study of novice secondary school teachers in Hong Kong	WoS, SCOPUS	-	Include	

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
39	Huang, J., & Yip, J. (2021). Understanding ESL teachers' agency in their early years of professional development: A three-layered triadic reciprocity framework.	WoS, SCOPUS	-	Include	
40	Hunter, S. B., & Springer, M. G. (2022). Critical feedback characteristics, teacher human capital, and early-career teacher performance: A mixed-methods analysis	ERIC, SCOPUS	-	Exclude	Agency does not mean teacher agency
41	Ismail, M. Z., & Othman, M. K. H. (2020). Curriculum content evaluation study of bachelor of education program specialization in Islamic education with Islamic education philosophy	SCOPUS	Exclude		Research is not about ECTs
42	Kang, D., & Martin, S. (2018). Improving learning opportunities for special education needs (SEN) students by engaging pre-service science teachers in an informal experiential learning course	WoS	-	Exclude	Research is not about ECTs
43	Kastner, J. D. (2020). Healing bruises: Identity tensions in a beginning teacher's use of formal and informal music learning	ERIC, WoS, SCOPUS	-	Exclude	Conceptualization of teacher agency is lack in the research framework
44	Kettle, M., Burnett, B., Lampert, J., Comber, B., & Barnes, N. (2022a). Conceptualising early career teachers' agency and accounts of social action in disadvantaged schools	ERIC, WoS, SCOPUS	Exclude		This is a duplicate
45	Kettle, M., Burnett, B., Lampert, J., Comber, B., & Barnes, N. (2022b). Conceptualising early career teachers' agency and accounts of social action in disadvantaged schools	ERIC, WoS, SCOPUS	-	Include	
46	Knussen, L., & Agnew, A. (2022). Supporting early career teachers' digital agency: A role for mentorship?	ERIC, WoS, SCOPUS	-	Exclude	School level is not exactly mentioned

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
47	Krivosh, L. (2022). Ways of integrating education-college graduates from the Ethiopian community in the education system in Israel	ERIC	-	Exclude	Agency does not mean teacher agency
48	Lane, J. L., & Sweeny, S. P. (2019). Understanding agency and organization in early career teachers' professional tie formation	ERIC, WoS, SCOPUS	-	Include	
49	Larsson, J., Airey, J., Danielsson, A., & Lundqvist, E. (2020). A fragmented training environment: Discourse models in the talk of physics teacher educators	WoS	-	Exclude	Research is not about ECTs
50	Lewis, J. M., Reid, D. B., Bell, C. A., Jones, N., & Qi, Y. (2022). The mantle of agency: Principals' use of teacher evaluation policy	ERIC, SCOPUS	Exclude		Research is not about ECTs
51	Liaw, M.-L., & Wu, S. (2021). Exploring L2 teacher identities in an intercultural telecollaborative mixed-reality teaching environment	ERIC, WoS, SCOPUS	-	Exclude	Full-text is not available
52	Lim, S., & Yun, S. (2022). Narratives of three novice in-service science primary school teachers: Their journey of achieving teacher agency and teacher belief	ERIC, WoS, SCOPUS	-	Include	
53	Liu, Y., & Liu, Q. (2021). Factors influencing teachers' level of digital citizenship in underdeveloped regions of China	ERIC, WoS, SCOPUS	-	Exclude	Mixed participants, hard to distinguish enough information focusing on ECTs
54	Lockton, M., & Fargason, S. (2019). Disrupting the status quo: How teachers grapple with reforms that compete with long-standing educational views	ERIC, WoS, SCOPUS	-	Include	
55	Losano, L., Fiorentini, D., & Villarreal, M. (2018). The development of a mathematics teacher's professional identity during her first year teaching	ERIC, WoS, SCOPUS	-	Include	
56	Lu, X., Leung, F. K. S., & Li, N. (2021). Teacher agency for integrating history into teaching mathematics in a performance-driven context: A case study of a beginning teacher in China	ERIC, SCOPUS	-	Include	

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
57	Lynch, J., & Mannion, G. (2021). Place-responsive pedagogies in the Anthropocene: Attuning with the more-than-human	ERIC	-	Exclude	Agency does not mean teacher agency
58	Marco-Bujosa, L. M., McNeill, K. L., & Friedman, A. A. (2020). Becoming an urban science teacher: How beginning teachers negotiate contradictory school contexts	ERIC, WoS, SCOPUS	-	Include	
59	Martinez, J., & McAbee, S. (2020). School administrator support of teachers: A systematic review (2000-2019)	ERIC	Exclude		This is not an empirical study
60	McCaw, C. T. (2021). Liminality and the beginning teacher: Strangers, frauds and dancing in the disequilibrium	ERIC, SCOPUS	-	Exclude	School level is not exactly mentioned
61	Mitani, H., Fuller, E. J., & Hollingworth, L. (2022). Attrition and turnover among beginning teachers in Texas by preparation program	ERIC, WoS	-	Exclude	Agency does not mean teacher agency
62	Naraian, S. (2022). Diffractively narrating teacher agency within the entanglements of inclusion	ERIC, SCOPUS	-	Exclude	School level is not exactly mentioned
63	Naraian, S., & Schlessinger, S. (2018). Becoming an inclusive educator: Agentive maneuverings in collaboratively taught classrooms	WoS	-	Include	
64	Narayanan, M., & Ordynans, J. (2022). Self-efficacy is a story: teachers' possible selves in a pandemic world	ERIC, SCOPUS	-	Include	
65	Neupane, B. P., Gnawali, L., & Kafle, H. R. (2022). Narratives and Identities: A Critical Review of Empirical Studies from 2004 to 2022.	ERIC, SCOPUS	Exclude		This is not an empirical study
66	O'Grady, A. (2019). Understanding the world through the affordances of drama: Early career teacher perspectives	WoS		Exclude	Full-text is not available
67	Olitsky, S. (2021). Identity, agency, and the internal conversations of science and math teachers implementing instructional reforms in high-need urban schools	ERIC, SCOPUS	-	Include	

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
68	Owen, C. (2019). Early career English teachers' everyday work: speaking back to standards-based reforms	ERIC	-	Include	
69	Öztürk, M., & Pizmony-Levy, O. (2022). Early career teacher educators' dispositions toward sustainability and accountability for sustainability issues: A case from teachers colleges in turkey	ERIC, SCOPUS	Exclude		Research is not about K-12 education
70	Pilgrim, J. (2022). The science of reading: An analysis of Texas literacy standards for teacher certification	ERIC	-	Exclude	Agency does not mean teacher agency
71	Porakari, J., & Edwards, F. (2018). Empowering Solomon Islands' beginning science teachers through the use of appreciative inquiry	ERIC	-	Exclude	Conceptualization of teacher agency is lack in the research framework
72	Powell, S. R. (2019). Structure and agency in novice music teaching	ERIC	-	Include	
73	Reid, N., Farmer, J., Desrochers, C., & McKenzie-Robblee, S. (2019). Early career teachers' experiences of communicating with families via technology: Educatively dwelling in tension	WoS	-	Exclude	Conceptualization of teacher agency is lack in the research framework
74	Ro, J. (2019). Seeking the meaning of the job: Korean novice secondary teachers' professional identity	ERIC, WoS, SCOPUS	-	Include	
75	Rostami, F., & Yousefi, M. H. (2020). Iranian novice English teachers' agency construction: The complexity dynamic/System Perspective	ERIC, WoS, SCOPUS	Exclude		Research is not about K-12 education
76	Rupenthal, M., & Furuness, S. (2020). A recursive loop in teacher socialization: Extending and improving teacher education curriculum	ERIC	-	Exclude	Lack of description about data collection and analysis
77	Sacco, A. D. (2021). Beginning and staying narrative from two teachers from schools with high vulnerability indexes	SCOPUS	-	Exclude	Language is not English

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
78	Schaefer, L., Hennig, L., & Clandinin, J. (2021). Intentions of early career teachers: Should we stay or should we go now?	ERIC, SCOPUS	-	Include	
79	Schmid, D. (2019). "Dance entry level teacher assessment" (DELTA): Reframing dance teacher preparation through consensus building	ERIC	-	Exclude	Agency does not mean teacher agency
80	Schwartz, C. S., & Ticknor, A. S. (2018). The role of university-based induction in beginning elementary teacher enactment of effective mathematics teaching	ERIC, WoS, SCOPUS	-	Exclude	Conceptualization of teacher agency is lack in the research framework
81	Shah, L., Schneider, J., Fallin, R., Cortes, K. L., Ray, H. E., & Rushton, G. T. (2018). What prospective chemistry teachers know about chemistry: An analysis of "praxis chemistry subject assessment" category performance	ERIC, WoS, SCOPUS	-	Exclude	Agency does not mean teacher agency
82	Shaw, R. D. (2019). Human resource professionals' perceptions of music teacher candidate performance on prescreening interview instruments	ERIC, WoS, SCOPUS	Exclude		Research is not about ECTs
83	Sheridan, L., Andersen, P., Patulny, R., McKenzie, J., Kinghorn, G., & Middleton, R. (2022). Early career teachers' adaptability and resilience in the socio-relational context of Australian schools	SCOPUS	-	Include	
84	Strom, K. J., & Martin, A. D. (2022). Toward a critical posthuman understanding of teacher development and practice: A multi-case study of beginning teachers	SCOPUS	-	Include	
85	Sullivan, A., Johnson, B., Simons, M., & Tippett, N. (2021). When performativity meets agency: How early career teachers struggle to reconcile competing agendas to become "quality" teachers	ERIC, SCOPUS	-	Include	
86	Tompkins, J., Kearns, L.-L., & Mitton-Kükner, J. (2019). Queer educators in schools: The experiences of four beginning teachers	ERIC, SCOPUS	-	Exclude	Conceptualization of teacher agency is lack in the research framework

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
87	Tutunis, B., & Hacifazlioglu, O. (2018). The impact of reflective practices of English language teachers on the development of a sense of agency	ERIC	-	Exclude	Mixed participants, hard to distinguish enough information focusing on ECTs
88	Valeeva, R., Baklashova, T., & Latypova, L. (2018). Management of novice teachers' induction to the profession: modernization of the Russian school methodological system	WoS, SCOPUS	-	Exclude	Agency does not mean teacher agency
89	van Merweland, R., Peters, P., & Jonkers, I. (2022). "Free as a bird"? A qualitative study of the psychological contract of young primary school teachers who are mediated through an intermediary	WoS	-	Exclude	Full-text is not available
90	Varea, V. (2019). On being a non-white academic in physical education and sport pedagogy	ERIC	Exclude		Research is not about K–12 education
91	Versland, T. M., Schmitt-Wilson, S., & Downey, J. (2022). Choosing a rural teaching position: Recognizing the importance of relationships and field experiences	ERIC, SCOPUS	-	Exclude	Agency does not mean teacher agency
92	Villena-Agreda, M. I. (2020). Negotiating and defining self as science teachers: A narrative-case study among non-science education major teachers	SCOPUS	-	Include	
93	Weaver, J. C., Bertelsen, C. D., Grim, M., Sarbaugh, A., Murnen, T., & Hartzog, M. (2021). Providing hope after trauma: Educating in a juvenile residential center	ERIC	Exclude		Research is not about K–12 education
94	Wei, B., Avraamidou, L., & Chen, N. (2021). How a beginning science teacher deals with practical work: An explorative study through the lens of identity	ERIC	-	Include	
95	Wei, B., & Chen, N. (2019). Agency at work: Two beginning science teachers' stories in a context of curriculum reform in China	ERIC	-	Include	

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
96	Wei, B., Chen, N., & Chen, B. (2020). Teaching with laboratory work: The presentation of beginning science teachers' identity in school settings	ERIC	-	Include	
97	Willis, A., Thiele, C., Dwyer, R., Grainger, P., & Simon, S. (2021). The pressing need to raise the status of the teaching profession: The launch story of the teachers of Australia social media campaign	ERIC	-	Exclude	Mixed participants, hard to distinguish enough information focusing on ECTs
98	Willis, L.-D., Shaukat, S., & Low-Choy, S. (2022). Preservice teacher perceptions of preparedness for teaching: Insights from survey research exploring the links between teacher professional standards and agency	ERIC, SCOPUS	Exclude		Research is not about ECTs
99	Winstead, L., Shehab, H., & Brye, M. (2022). Enhancing teacher awareness and professionalism through prolonged critical reflection: Influences of socializing forces on educational beliefs and practice	ERIC	-	Exclude	Conceptualization of teacher agency is lack in the research framework
100	Wong, J. W., Athanases, S. Z., & Banes, L. C. (2020). Developing as an agentic bilingual teacher: Self-reflexive and student-learning inquiry as teacher education resources.	ERIC, WoS, SCOPUS	-	Include	
101	Wray, K. A., & Richmond, G. (2018). Factors shaping the agency of beginning science teachers working in high-poverty schools	ERIC, WoS, SCOPUS	-	Include	
102	Wright, V., Loughlin, T., & Hall, V. (2018). Exploring transitions in notions of identity as perceived by beginning post-compulsory teachers	WoS, SCOPUS	-	Exclude	Mixed participants, hard to distinguish enough information focusing on K-12 teachers
103	Xu, H. (2021). To be resourced or to become a resource: Understanding novice university teachers' resource-mediated identity construction	ERIC, WoS, SCOPUS	Exclude		Research is not about K-12 education

	Author(s). (Year of publication). Title	Identified Database(s)	Screening ³	Eligibility Assessment	Reason for Excluding Article
104	Xun, Y., Zhu, G., & Rice, M. (2021). How do beginning teachers achieve their professional agency and resilience during the COVID-19 pandemic? A social-ecological approach	ERIC, SCOPUS	-	Exclude	School level is not exactly mentioned
105	Zlateva, S. (2020). The management of the kindergarten young teachers of children as a manager resource	WoS	-	Exclude	Full-text is not available
Reason for exclusion		The number of excluded articles	Reason for exclusion		The number of excluded articles
Research is not about ECTs		15	Full-text is not available		5
Mixed participants and hard to get enough information about ECTs in K–12		5	Additional duplicates		3
Agency does not mean teacher agency		11	Language is not English		2
Research is not about K–12 education		8	Conceptualization of teacher agency is lack in the research framework		9
School level is not exactly mentioned		5	Lack of description about data collection and analysis		1
Research is not an empirical stud		4	Excluded articles in total		68

Appendix 3 Consultation Report for Information Seeking

CONSULTATION FOR INFORMATION SEEKING

General information

Who? Tytti Leppänen (counsellor) & Eunji Jeong

Date: January 10th 2024

Subject: Scoping review / topic: early career teacher (ECT) agency in K-12

Research aims to:

- examine the trend of published articles about ECT
- identify what is known about how ECTs exercise and achieve teacher agency

Chosen databases: ERIC and Web of Science +Scopus

(Main differences between these databases:

- ERIC is focusing on educational-related publications (and has its own Thesaurus; in overall enables very exact searcher)
- Web of Science & Scopus are multidisciplinary; they make each other complete (googling '*scopus web of science differences*' offers information about which one is better etc.)
 - WoS provides publications of science, social science, art and humanities, and it covers over 12 000 journals-
 - Scopus → life science, health sciences, physical science, social science → over 11 000 publishers

THEMES FOR CONSULTATION

- modifying / improving search statements,
 - [phrase marks \("early childhood"\) and truncation \(teacher*\)](#)
> Searching with phrases / Truncation
 - [alternative search terms](#) (> Synonyms and related terms)
 - [different search strategies](#)

- In ERIC, I suggest limitation to “Anywhere expect full texts” instead of “Abstract”.
- Additional alternative terms to try:
 - *recent graduated teacher*
 - *young teacher / young staff member*
 - *inexperienced / inexpert / unexperienced / unpracticed teachers*
- Limitation to K-12:
 - in ERIC:
 - Choose educational levels
 - or add to search statement:
 ...AND (*kindergarten OR “early childhood education” OR preschool* OR “elementary school*” OR “primary school*” OR K-12*)
 → last one works in Web of Science and Scopus, too.
- Search statement for Scopus:

(TITLE-ABS-KEY ("Early career teacher*" OR "novice teacher*" OR "beginning teacher*" OR "newly graduated teacher*" OR "new teacher*" OR "newly qualified teacher*" OR "recent graduated teacher*" OR "young teacher*" OR "inexperienced teacher*") AND TITLE-ABS-KEY (agency)) AND PUBYEAR > 2018 AND PUBYEAR < 2024

	ERIC (ProQuest)	Web of Science
Searching Query	abstract(Early career teacher OR novice teacher OR beginning teacher OR newly graduated teacher OR new teacher OR newly qualified teacher) AND abstract(Agency OR teacher agency OR professional agency)	(AB=(Early career teacher OR novice teacher OR beginning teacher OR newly graduated teacher OR new teacher OR newly qualified teacher) AND AB=(Agency OR teacher agency OR professional agency))
Limits	- Searching field: abstract - Peer reviewed - Publication date: 1st January 2019 – 31st December 2023 - Source type: Scholarly journals - Document type: article - Language: English	- Searching field: abstract - Publication years: 2019-2023 - Document types: article - Language: English ○ Document types: not early access and proceeding paper? ○ How to check Peer-reviewed article?