

## **An Analysis of Pre-service Elementary Teachers' Understanding of Metacognition and Pedagogies of Metacognition**

### **Sınıf Öğretmeni Adaylarının Üstbiliş ve Üstbiliş Eğitimi Anlayışlarının İncelenmesi**

*(Received June 14, 2015 – Approved February 8, 2016)*

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#### **Abstract**

While students are educated for literacy, the interactive nature of perceptual, cognitive, and metacognitive skills is taken into consideration especially for building comprehension. Numerous studies on metacognition reported improved metacognitive awareness, reading performance, and learning independence following metacognition training interventions. Paradoxically, teachers' knowledge and skills to teach for metacognition is criticized for not being sufficient enough. Taking the initiative to understand pre-service elementary teachers' knowledge of and skills for teaching metacognition, this illustrative case study utilized semi-structured interview protocols and observation technique as data sources. Qualitative data analysis revealed that pre-service elementary teachers are not familiar with metacognition and their perceived pedagogical understanding of metacognition does not support their teaching skills. In relation, participants exclaimed a need for practice-oriented methodology classes. This study, therefore, encourages comprehensive research examining teacher-educators' perceptions, method classes content, and effectiveness of practice-oriented method classes in empowering pre-service teachers considering metacognition.

**Keywords:**Metacognition, teacher education, teaching for metacognition, literacy education, case study

#### **Öz**

Okuma yazma eğitiminde özellikle anlamın oluşturulmasında algısal, bilişsel ve üstbilişsel becerilerin interaktif süreci dikkate alınır. Bu yüzden, çok sayıda bilimsel çalışma üstbilişsel strateji eğitimi etkilerini incelemiş ve üstbiliş eğitimi alan öğrencilerin üstbilişsel farkındalığının, okuma performansının ve öğrenme bağımsızlığının arttığını vurgulamıştır. Fakat diğer yandan, öğretmenler üstbiliş öğretecek bilgi ve beceriye yeterince sahip olmadıkları için eleştirilmektedirler. Sınıf öğretmeni adaylarının üstbiliş eğitimi için gerekli olan bilgi ve becerilerini incelemeyi amaçlayan bu vaka çalışmasında yarı yapılandırılmış mülakat ve gözlem tekniklerinden yararlanılmıştır. Sözel veri analizi, öğretmen adaylarının üstbilişe aşina olmadıklarını ve pedagojik algılarının üstbiliş öğretim becerilerini desteklemediğini ortaya koymuştur. Katılımcılar uygulama odaklı yöntem derslerine olan ihtiyacı dile getirmişlerdir. Bulgular ışığında, bu çalışma öğretmen yetiştiren eğitimcilerin üstbiliş eğitimi algılarını, yöntem derslerinin içerik analizinin ve uygulama odaklı yöntem derslerinin etkinliğini ölçen çalışmalar yapılmasını önermektedir.

**Anahtar Sözcükler:** Üstbiliş, öğretmen eğitimi, üstbiliş eğitimi, okuma eğitimi, vaka çalışması

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### **Introduction**

Reading, as defined by Myers and Paris (1978) is “a complex behavior that involves interactions among perceptual processes, cognitive skills, and metacognitive knowledge” (p. 680) and skills (Boulware-Gooden et al., 2007). Myers and Paris’s definition proposes that an awareness of print and phonological sensitivity are crucial (Boulware-Gooden et al., 2007) for comprehension. However, other factors like vocabulary knowledge, cognitive strategies, and metacognitive skills gain importance as students progress through different levels of reading comprehension (Boulware-Gooden et al., 2007). To make meaning and gain information, readers need to employ cognitive strategies. To plan, monitor comprehension, regulate cognitive strategies and processes (Doğanay Bilgi & Özmen, 2014), and evaluate both comprehension and reading performance, metacognitive strategies and processes are indispensable. All of these are crucial and interacting components of comprehension, (Boulware-Gooden et al., 2007).

Inspired by Flavell's (1979) metacognition theory and his preliminary question: “[H]ow much good does cognitive monitoring actually do us in various types of cognitive enterprise?” (p. 910), numerous studies on metacognitive training have been conducted. Experimental or quasi experimental studies, investigating Flavell’s (1979) argument that “increasing the quantity and quality of children’s metacognitive knowledge and monitoring skills through systematic training may be feasible as well as desirable” (p. 910), have contributed to reading education. Studies on teaching metacognitive strategies in different content areas and with diverse groups of students have shown that training readers in metacognitive strategies improves their reading awareness, comprehension, performance, and responsibility for their own learning (Boulware-Gooden et al., 2007; Cross & Paris, 1988; Veenman et al., 2006).

### ***Problem***

Explicit metacognitive strategy training seems to enhance reading awareness, skills (Cross & Paris, 1988), and supports reading comprehension performance (Boulware-Gooden et al., 2007; Veenman et al., 2006). As Bowman, Galvez-Martin, and Morrison (2005) emphasized, “in order for students to develop inquiring skills and to learn to reflect, teachers must learn how to guide the learning process. This can only occur when metacognitive strategies are modelled by the teacher” (p.336). However, Veenman et al. (2006) argued that “many teachers lack sufficient knowledge about metacognition” (p.10), and Boulware-Gooden and her colleagues (2007) explicitly and harshly state that “classroom teachers often fail to teach this [metacognitive] process” (p.72).

In alignment with these arguments, although current research on metacognitive trainings is abundant, the intervention implementations raise some doubt related to teachers’ knowledge, skills, and teaching practices of metacognition. This is because in some studies, such as Gaultney's (1995), metacognitive strategy trainers are the researchers. In several other studies, such as those conducted by Houtveen and van de Grift (2007) and Michalsky, Mevarech, and Haibi (2009), classroom teachers were trained how to teach metacognition before the intervention was implemented in exper-

imental classrooms. Moreover, in some other studies like by Boulware-Gooden et al., (2007) and Muñiz-Swicegood (1994) although the trainer was the classroom teacher, the researchers did not mention if the teacher was assessed for his or her metacognitive awareness and knowledge of teaching metacognition. These researchers did not explain if they provided the classroom teacher with any instructional support or feedback in teaching metacognition, either.

Wilson and Bai (2010) noted research on students' academic performance following metacognitive training has been increasing. However, in addition to the criticism against teachers, "limited research has been done to explore teachers' explicit awareness of their metacognition" (Wilson & Bai, 2010, p.269). Therefore, it is clear that there is a need to investigate teachers' knowledge of and competences in teaching for metacognition.

### ***Purpose of the Study***

This study aims to contribute to the understanding whether and why teachers lack sufficient knowledge, instructional tools, and skills for metacognitive instruction. More specifically, considering its critical role in teachers' professional development, this study targets at the very initial entrée point where individuals get prepared for "teaching" professionally: teacher education programs. This study will answer the following research question:

How do pre-service elementary teachers' learning experiences in a reading methods class shape their understandings of metacognition and support their pedagogies of metacognition within the context of reading education?

### ***Operational Definitions***

*Metacognition* is the knowledge about and executive control of one's cognitive activities in learning processes (Baker & Brown, 1984; Flavell, 1979; Veenman et al., 2006). In terms of reading, metacognition pertains to the "knowledge readers have about their cognitive resources, about the reading task, and about the compatibility between two" (Griffith & Ruan, 2005, p.7). Simultaneously, it pertains to the use of regulatory mechanisms to comprehend by "checking the outcome of, planning one's next move, monitoring the effectiveness of any attempted action, testing, revising, and evaluating one's strategies" (Baker & Brown, 1984, p. 354) and performance.

*Teaching for metacognition* is defined as the instruction aiming to activate and develop students' metacognition. It is "implementing metacognition as an integral part of ... lessons, and... making students aware of their cognitive activities and the utility of those activities" (Veenman et al., 2006, p. 10). More specifically, teaching for metacognition in reading is explicitly teaching students how to plan a reading activity in consideration of task demands, personal resources, and abilities. It also includes teaching metacognitive knowledge about reading strategies by modelling when, how, and where each strategy is used and show its effects on reading process and comprehension (Doğanay Bilgi & Özmen, 2014; Pardo, 2004). Lastly, it includes helping students understand how to evaluate reading process, strategy use, and comprehension (Veenman et al., 2006).

### **Literature Review**

This section focus on metacognition theory and research on teaching for metacognition. Metacognition theory was examined to provide a context for empirical studies reviewed. These studies examine pre- and in-service teachers' understanding, knowledge, pedagogical development of teaching for metacognition and/or practices of teaching for metacognition in reading. They were chosen in consideration of the metacognitive instruction framework, which was developed based on Fisher (1998), Schraw's, (1998), and Veenman et al.'s (2006) work. Moreover, these studies were synthesized considering Elmore's (1996) arguments about teacher education. In brief, Elmore (1996) emphasizes teachers need to observe experts implementing new knowledge and be given opportunities and feedback for their own authentic practices.

### ***Metacognition Theory***

#### *Metacognition and components of metacognition*

Jacobs and Paris (cited in Michalsky et al., 2009) stated that metacognition “is the conscious self-awareness of one’s own knowledge of task, topic, and thinking, and the conscious self-management (executive control) of the related cognitive process” (p. 364). Almost 30 years later, Veenman et al. (2006) defined metacognition as “a higher-order agent overlooking and governing the cognitive system, while simultaneously being part of it” (p.5). They argued that if metacognition is a set of self-instructions to regulate task-performance, then cognition is the vehicle for these self-instructions.

Metacognition includes two categories of mental activities: “self-appraised knowledge about cognition and self-management of one’s thinking” (Cross & Paris, 1988, p. 131). *Metacognitive knowledge about cognition* includes the variables about thinking and the sensitivity to act accordingly (Flavell, 1979). Declarative knowledge, one’s understanding of *what* influences cognitive activity, includes interactive characteristics of person, task, and strategy variables (Veenman et al., 2006). Procedural knowledge pertains to regulating a large variety of problem-solving and learning strategies (Pressley et al., 1987; Veenman et al., 2006), and it reflects “an appreciation for *how* skills operate or are applied” (Cross & Paris, 1988, p. 131). Finally, metacognition includes conditional knowledge, one’s knowing *when* and *why* to use declarative and procedural knowledge (Garner, 1990) In order to accommodate various conditions and situational demands of learning tasks, individuals need to adapt and apply most appropriate strategies effectively by allocating their resources (Doğanay Bilgi & Özmen, 2014; Schraw, 1998).

Metacognition also includes *self-management of cognition* generally categorized as planning, monitoring, regulation, and evaluation of cognitive strategies and skills (Pintrich et al., 2000; Schraw, 1998). Planning involves making predications, allocating resources and time, selecting appropriate strategies, sequencing these strategies, and allocating attention selectively before beginning a task. Monitoring pertains to one’s online awareness of cognitive activity and task performance. Regulation involves one’s decisions about when to change strategies and use fix-up strategies while performing a task. Lastly, evaluating is “appraising the products and efficiency of

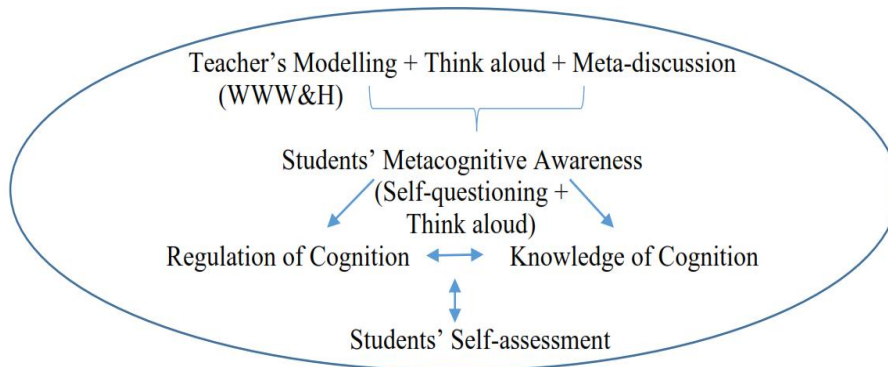
one's learning" by re-evaluating one's goals and conclusion (Schraw, 1998, p.115). Although these skills are mentioned separately, it is important to notice that all are related and interactive.

### *Metacognitive Instruction*

For the purpose of this study, a metacognition instruction framework was developed in consideration of Fisher's (1998), Schraw's (1998), and Veenman and his colleagues' (2006) meditations on metacognition instruction.

Fisher (1998) emphasized that "[m]eta-teaching aims to meditate metacognition to help the child make explicit their thinking and learning for the purpose of self-appraisal and self-management (MT)" (p.9). Through explicitly modelling and infusing "the language of thinking and learning into the planning of teaching and into classroom discussion" (p.10), teachers encourage "children to probe deeper into what they have said and what they think" (Fisher, 1998, p. 10). Challenged through metacognitive questions, children are prompted to become conscious of their cognitive processes, to describe, and to evaluate it before, during and after an activity.

Schraw (1998) emphasized four general ways to increase metacognition: "These include promoting general awareness of the importance of metacognition, improving knowledge of cognition, improving regulation of cognition, and fostering environments that promote metacognitive awareness" (p. 118). Similarly, for effective metacognitive instruction, Veenman et al. (2006) stressed the importance of (a) embedding metacognitive instruction in the content matter for connectivity, (b) informing children about the usefulness of metacognitive strategies and activities, and (c) guaranteeing the smooth and maintained application of metacognitive activity through prolonged trainings. These principles can be maintained via *WWW&H rule*: What to do, When, Why, and How to do so (Veenman et al., 2006, emphasis in original). In instructional programs that adhere to the principles of meta-teaching and *WWW&H rule*, initiating meta-discussion, instructors explicitly model and guide students through particular metacognitive strategies. Teachers' application of *WWW&H rule*, in essence, can vitalize "think aloud," which Fisher (1998) suggested for raising children's metacognitive awareness and metacognitive language, skills, and self-questioning. Discussing learning objectives and strategies through contextual examples, students are supported in thinking about their own reading performances and utilization of strategies. Providing them with models of how to use and regulate the strategies while monitoring one's own reading activity, instructors also explain why a particular strategy is being used in a particular situation and how it is useful for their performance (Veenman et al., 2006). Explanations and demonstrations of how various strategies are useful for performance is important for initiating self-assessment. In being explicitly trained, students can recognize appropriate contexts for metacognitive strategies use and develop criteria for monitoring, regulating, and evaluating their future strategy use and performances (Hartman, 2001).



**Figure 1.** Metacognitive instruction framework

#### *Research on Teaching for Metacognition*

Considering teachers' instrumental role in metacognitive instruction (Bowman, Galvez-Martin, & Morrison, 2005; Curwen et al., 2010; Fisher, 2002; Kerndl & Aberšek, 2012) a better understanding of their awareness of metacognition and pedagogical enactments of metacognition is not only an important research area but it can also be a promising gateway to improve teacher education programs and/or professional development training. For this reason, empirical research on pre- and in-service teachers' knowledge of metacognition and competence in metacognitive instruction considering the framework mentioned beforehand was searched.

In their research on graduate students' pedagogical understandings of metacognition in reading, Wilson and Bai (2010) stated that "understanding of metacognition was related to the instructional strategies [they] perceived to be effective in helping students to become metacognitive" (p.285). They noted that the participants stressed scaffolding and guiding students to be self-aware of cognitive processes, demonstrating thinking, knowledge of strategies, students, and when to implement strategies to educate metacognitive students (Wilson & Bai, 2010). However, the study findings only indicated that "the participants know what is right" (p.286) instead of reporting what the participants demonstrated in action. It is, therefore, important to measure what teachers do in their classes apart from their declarative knowledge about teaching for metacognition.

A study, carried out by Thomas and Barksdale-Ladd (2000), provided similar arguments and thought-provoking findings regarding teachers' enactment of teaching for metacognition. Following an intensive procedure to foster literacy education undergraduates' understandings of metacognition and teaching for metacognition (called meta-teaching in this particular study), they found that although participants "understood and applied metacognitive strategies in their personal reading and were aware of these strategies that made them strategic readers, they applied little of these strategies to the tutoring and case study situations" (p.67). Shedding some light on Wilson and Bai's (2010) limitations, Thomas and Barksdale-Ladd (2000) add that undergraduate

literacy education students tended to “treat metacognition as something only fluent readers can do” (p.78) and they did not see metacognitive processes, such as monitoring, formulating possible scenarios, and bringing self to text as helping to comprehension.

These studies with undergraduate and graduate students are important to make sense of research findings with in-service teachers. Observing 20 in-service teachers for 170 hours, Fisher, (2002) noted that “although there should be opportunities for metacognitive modelling within the literacy hour, teachers find it difficult to use these opportunities” (p.63). While Fisher (2002) argued that “focusing on *what* is to be achieved rather than *how* it is achieved can only reinforce this” (p. 65), teacher might not practice it because of not having enough knowledge and skills for metacognitive teaching as noted in Kerndl and Aberšek's (2012) study. Further, some teachers unfortunately might simply not know that they do not know about metacognition and teaching for metacognition (Kerndl & Aberšek, 2012).

All of these studies show that most teachers cannot enact teaching for metacognition although they appreciate it, if they are aware of it. Shifting the spotlights from teachers to teacher educators, therefore, can broaden our perspective to grasp the potential reasons for this case. Regarding pre-service teacher education, Wen's (2012) noted that all teacher educators interviewed were aware of metacognition, although some provided erroneous and/or restricted definitions. All recognized the importance of metacognition; however, they did not explicitly aim to develop pre-service teachers' skills and knowledge for teaching for metacognition.

Aforementioned studies on teacher's understandings, knowledge, competencies, and pedagogies of teaching for metacognition suggest that although pre- and even in-service teachers can talk about and appreciate metacognitive strategies, their teaching of metacognitive strategies and processes is not at a satisfactory level as argued by the pioneers in the field. To understand why teachers cannot reflect their knowledge into their pedagogies, this study investigates pre-service teachers' understandings of metacognition and teaching for metacognition in relation to teacher education program experiences through semi-structured interviews and classroom observation.

## **Method**

### ***Research Methodology and Participants***

This research is an illustrative case study utilizing qualitative data collection and analysis methods. For this study, the researcher adopted convenience sampling and recruited a small number of volunteers. The participants included one male and two female pre-service elementary teachers taking a reading-methods class at a Mid Atlantic University. Given the increase in demands and responsibilities that elementary teachers will encounter in professional settings, this course aims to support pre-service teachers how to teach reading. In addition to components of reading and related theories, this class included research-based pedagogical practices and strategies that are effective to teach reading at elementary levels. All participants had altruistic orientations to become teachers.

### ***Data Sources and Collection Methods***

In order to shed light on the participants' understandings of metacognition and teaching for metacognition, qualitative data were collected through semi-structured interview questions and an observation session of a reading methods class.

Before participants were interviewed, the researcher consulted with the faculty members who are experts either on metacognition or qualitative research in order to check the validity of semi-structured interview questions. Following necessary wording adjustments, the participants were interviewed individually at their convenience in the researcher's room. The interviews lasted for 17 to 22 minutes and were audio recorded upon participants' consent. First, participants were asked some lead-in questions like "Why do you want to be a teacher?" Then, they were asked the main interview questions, for example; "How can you define metacognition? What have you learned about it so far in your classes?" (see Appendix).

Following the interviews, the researcher conducted a single 150-minute observation of a method class. The class to be observed was negotiated with the class instructor. We decided on the class that was assigned for "comprehension" as the main purpose of reading is to build comprehension. During the observation, the researcher took detailed field notes regarding pre-service teachers' exposure to the instructional materials, the organization of instruction, and the presentation of the topic. Moreover, it was carefully tracked how pre-service teachers were modelled and guided with metacognition and teaching for metacognition within this course of "reading comprehension," if so.

In order to protect the identity of any third parties, when necessary, "they" and/or "them" was used instead of a singular third person pronoun.

### ***Data Analysis Methods***

In order to analyze observation field notes and interview transcripts, both inductive and deductive codes were employed. First, in consideration of metacognition theory and metacognitive instruction framework developed for this study, the data set was deductively coded. "Definition and appreciation of metacognition" were among deductive codes employed. Then, analyzing the same data set again, the researcher developed inductive codes such as "pedagogical needs." After a final comparison of inductive and deductive codes and a final revision of schemes, themes were created. Codes and themes were organized into three categories. *Metacognition* included data about pre-service elementary teachers' familiarity with metacognition, their definition of metacognition and a metacognitive child, and their perceptions and/or appreciation of metacognition. *Teaching for metacognition* covered pre-service elementary teachers' recognition of the need for teaching students metacognitive processes and skills, and their learning experiences of teaching for metacognition in their reading methods class. *Pedagogical needs* pertains to the needs that pre-service elementary teachers highlighted in a form of pedagogical enactments to develop their skills of teaching for metacognition. This category emerged during the interviews and led to some proposals for future research.



Following the development of schemes and themes, the data set was coded by another colleague who is knowledgeable about metacognition and experienced in teaching reading, and who is referred to from hence as “they/them”. Before they coded the data, the researcher informed them about metacognition instruction. They also practiced coding for teaching metacognition prior to coding main data set. When they and the researcher agreed on their satisfactory competence with metacognitive instruction framework, they coded the research data set. Interrater reliability was satisfactory enough (85%) to present data.

### **Findings**

Following data analysis, it was concluded that pre-service elementary teachers in this study were not adequately supported and guided in teaching for metacognition. Although pre-service teachers had chances to become reflective and improve their critical thinking, these capabilities may not always necessarily ignite “teaching for metacognition” knowledge, tools, and skills. Below, specific reasons and evidence for this assertion were provided.

#### ***Metacognition and the Metacognitive Child, Meta-What?***

All interviewees reported that they were not really familiar with metacognition although there were some readings touching on the term in their previous classes. When they were asked to define metacognition, two of them could provide some common definitions like, “Thinking about thinking...like analyzing your thought process... analyzing things” (J.) and “Kids thinking how they learn (*very hesitantly*)” (R.). Although they were correct in their definitions, it was evident that these two participants were not really sure about their definitions. They were expecting some confirming feedback from the researcher. The third participant did not define metacognition and simply responded “I really don’t...” (M.).

Observation field notes were helpful to understand why pre-service elementary teachers may not be familiar with metacognition. As the class was allocated to reading comprehension, the focus was on reading skills, strategies, schemata theory, explicit instruction of activating background knowledge, questioning, analyzing text structure, building mental images, and summarizing. During the class, it was observed these strategies and/or theories were presented by the pre-service elementary teachers to their peers after reading some related pioneering papers in the field. However, none of them chose and/or was directed to present metacognition.

After wrapping up students’ presentations, they addressed metacognition. However, it was the last 12-15 minutes of the class. During a two-hour class, it was unfortunate to talk about metacognition in the last 10-12% of the time. In alignment with the interview data, few pre-service elementary teachers, including the interviewees, could state common definitions of metacognition. However, when abstract nature of metacognition and its personal development is considered, pre-service elementary teachers had better explicitly analyze how metacognitive processes and strategies function and reflect on why they need to be called for a reading activity (Veenman et al., 2006). This is because speaking about metacognition within a limited period of

time would not really help them to develop appropriate and sufficient schemata to support their teaching practices.

Moreover, because the pre-service teachers would start teaching very soon, it was important to examine their pedagogical understanding of metacognition. Two interviewees, who were able to define metacognition, were asked to define and talk about a “metacognitive child and his capabilities.” In response to this request, they became a bit more confused and hesitant about revealing their ideas. J, who seemed to be competent in engaging in a metacognitive process, simply replied to this question by saying “I don't really know how to define that.” After being encouraged to give it a try, she ended up saying “I guess, that's with the whole analyzing again. The child may be able to think about strategies and why they're doing certain things. When the theory (*silence for 3-4 seconds*) not even the theory... but the reasoning behind subtraction on your bar.” However, she diverted the focus to Math reasoning by giving an example rather than sticking to reading comprehension. The other interviewee incompletely defined a metacognitive child as “Someone who can (*3 second silence*) metacognitive child (*uttered more silently and followed by silence again for 3 seconds*) someone who can think through reading, who can not only understand the words that go in the book, but what it means...*something like that*” (R. *emphasis added*). Her initial reasoning, at some point, did not help her much differentiate between cognitive and metacognitive processes.

Pre-service teachers' hesitations and difficulties in applying metacognition to teaching/learning contexts became more meaningful when they were observed in their methods class. Not being sufficiently exposed to the topic of metacognition and expert-modelling can be the most probable reason for their hesitant responses about metacognitive children. Although one of the interview participants stated that thanks to metacognition students know “how to approach comprehending a text” (R.), except one pre-service elementary teacher, neither the presenters nor the other pre-service teachers in the class talked about what metacognitive children can do before, during, and after reading.

### ***Teaching for Metacognition***

For the interviews, the researcher printed and presented pre-service teachers Common Core State Standards, English Language Arts Standards, Anchor Standards, College and Career Readiness Anchor Standards for Reading. This is because both these standards implicitly call for children's utilization of metacognitive strategies and pre-service elementary teachers need to develop short lesson plans targeting these standards during their student-teaching. Instead of talking about imaginary teaching cases, interviewees were asked how they would realize such reading standards. Their recognition of the need for metacognitive instruction was examined implicitly by these standards.

After giving a quick read to these standards, all of the participants talked about cognitive strategies and related instructional activities to support reading comprehension. They talked about some pre-, during-, and post-reading activities and/or cognitive strategies like close reading, re-reading, summarizing key ideas, picture-walk,

read-aloud, worksheets, graphic organizers, using audio books, and teacher's questioning. All emphasized that practicing reading and comprehension strategies is very important for students' mastery of these strategies, ultimately supporting their independent reading. However, none of these pre-service elementary teachers mentioned teacher-modeling, reasoning about the potential strategies, and/or thinking-aloud reading processes from the very beginning to the end. They did not talk about how a teacher can help his students plan for reading considering their personal capabilities, reading goals, and task requirements. Only one of them touched on Know-Want to know-Learn (KWL), but she did not explain how she could model and implement the KWL steps in her reading class, so that her students could learn *how*, *when*, and *why* they could use it later independently. Also, although they greatly focused on comprehension and named different comprehension strategies, the participants seemed to disregard teaching comprehension monitoring, regulation, and evaluation. Similarly, these pre-service teachers did not comment on how they could scaffold students' strategy use and evaluation.

From a larger perspective, shedding some light to the arguments that teachers lack sufficient knowledge about metacognition and tools for implementing metacognition as a part of their lessons (Boulware-Gooden et al., 2007; Veenman et al., 2006), an episode from the participants' methods classes became informative. In this class, pre-service teachers did not focus on and/or observe how a teacher can implement strategy modelling, think-aloud, comprehension monitoring, regulation, and evaluation. Although they slightly directed them towards thinking about "metacognitive children" by mentioning comprehension monitoring and executive functions as potential sources of readers' motivation, only one student raised the idea of "self-dialog." She related it to comprehension monitoring by highlighting a question that her students may ask; "Did I understand what I read?" This was actually a very important question each and every reader needed to ask himself. However, the class did not further discuss related implications or even see how a teacher can initiate this question and lead students towards metacognitive processes.

Similarly, although class presenters provided good theoretical knowledge of comprehension strategies, unfortunately they did not enact how they would manifest them in their classes. While the class presenters explained cognitive comprehension strategies well and emphasized teaching them *explicitly*, other class members did not practice and/or see a model explicitly teaching these comprehension strategies metacognitively (Hartman, 2001b). It seemed the class took it for granted that when the teacher utilized any cognitive strategies and asked students to use them, the students automatically understood *how*, *when* and *why* to use these strategies effectively to improve their own comprehension. Considering the pedagogical practices of teaching for metacognition in this class, interviewees unanimously stated never being presented with explicit professional demonstrations integrating metacognition into classroom instruction. In relation to teaching for metacognition practices, J.'s statement that they "don't really talk about metacognitive children in [their] classes. That's never really been a thing," highlights their pedagogical needs.

### ***Needs to be Addressed***

Reflecting on “teaching for metacognition,” pre-service elementary teachers in this study declared a need for practice-oriented method classes. M. said pre-service elementary teachers need “explicit instruction about it [teaching for metacognition]”; they need models of how to implement different strategies explicitly. As J. emphasized professors’ “having the students interact and having them do it on [them]...more of an interactive example” could help pre-service elementary teachers “see how [they] should implement it [metacognitive processes and metacognitive strategies] on [their] own students.”

The participants expressed that in addition to descriptions of metacognition through readings or slide shows, pre-service teachers need to see how metacognition can be integrated into instruction through sample lesson plans, faculty demo-lessons, video lessons, and their class demonstration. As R. stated “action speaks louder than words...actually demonstrating would be more helpful” for pre-service elementary teachers to internalize teaching for metacognition.

### **Discussion and Conclusion**

The findings of this study aligned with the arguments that teachers lack sufficient knowledge of metacognition, tools, and skills for teaching it (Boulware-Gooden et al., 2007; Kernl & Aberšek, 2012; Veenman et al., 2006).

Restricted to a small sample group of three pre-service elementary teachers’ perspectives and a single-class observation, the prominent finding is that pre-service elementary teachers need guidance from the faculty and explicit modelling in order to effectively learn and teach for metacognition. In fact, lack of explicit modelling and sufficient guidance for teaching metacognitive strategies might have negative implications. Considering its potential effects on pre-service teachers’ future teaching practices and their students’ learning outcomes, it was remarkable to hear what one prospective teacher stated. Aligning with Thomas and Barksdale-Ladd’s findings (2000), J. was not sure if young children can benefit from metacognition during reading. She believed that “thinking about thinking...will just confuse elementary students” (J). This was most probably because she could not see “some compelling reason...with the best direct evidence being that students learn better” (Elmore, 1996, p.24). Moreover, if J. had known that Theory of Mind starts to develop at the age of 3 to 5 (Veenman et al., 2006), metamemory and metacognitive knowledge develops at the age of 5 or 6 (Berk, 2003; Veenman et al, 2006), and metacognitive skills emerge between the ages of 8 to 10 (Berk, 2003; Veenman, 2016), she would not have been worried about students getting confused about metacognitive strategies. Therefore, this study proposes further investigation into methods courses’ content and instructional materials to improve support for pre-service elementary teachers’ professional knowledge accumulation.

During the observation, as Feiman-Nemser (2001) argued “[t]oo often teacher educators do not practice what they preach. Classes are either too abstract to challenge deeply held beliefs or too superficial to foster deep understanding” (p.1020), I felt I was in a regular theoretical course covering components of reading and reading in-

struction, not in a methods course. I believe that a method course preparing teachers for their future careers should blend theory and practice. I definitely think that practice which is not supported with theoretical knowledge will fail, but theoretical competence might not always necessarily initiate practical implications and/or sufficient performance. In order to practice what pre-service teachers have learned in theoretical classes, they need to incorporate content, pedagogical content, knowledge of learners, knowledge of educational contexts, curricular knowledge, and knowledge of educational ends (Darling-Hammond, 2006; Shulman, 1987). For a beginning teacher, it is also important to transform this core knowledge into a practical form which will benefit his or her students. In such a course, pre-service teachers, therefore, need to actively take on student and teacher roles. In other words, in addition to teacher educators' empowering pre-service teachers' metacognition as in Wen's (2012) study, instructors of methodology courses need to take teacher education principles into consideration. Regarding teacher education, Elmore (1996) emphasized that teachers should be given chances to observe an expert practicing the content matter in an authentic classroom and to teach new knowledge in their own classrooms. Also, they "need feedback from sources they trust about whether students are actually learning what they are taught" (Elmore, 1996, p. 24). More importantly, the pedagogical needs that pre-service elementary teachers mentioned strongly align with Feiman-Nemser's (2001) arguments. Feiman-Nemser (2001) argues that pre-service teachers need "well-designed opportunities to link theory and practice, develop skills and strategies, cultivate habits of analysis and reflection through focused observation, child study, analysis of cases, micro-teaching, and other laboratory experiences" (p.1020). Likewise, knowledge retention is highest when one learns by practicing, doing, and teaching others ("The Learning Pyramid," n.d.). This study, therefore, proposes an examination of teacher educators' understandings of teaching for metacognition and teacher education. Especially, the relationship between faculty members' pedagogical preferences, their practical "teaching" enactments, the rationale behind their enactments and prospective teachers' readiness for teaching metacognition needs exploration to improve pre-service teachers' experiences.

This study also suggests embedding metacognition into the context of teaching reading as a real living entity which pre-service elementary teachers can experience themselves. Focusing more on the teaching implementations of metacognition, pre-service teachers need to be given opportunities to observe experts teaching for metacognition. More importantly they need opportunities to demonstrate their understanding of metacognition and teaching for metacognition in addition to reflecting on their own teaching practices. Therefore, in a methods class of reading comprehension, pre-service teachers should be more critical, reflective, creative, and active. Considering a metacognition instruction framework, pre-service elementary teachers need to see, discuss, and experiment how a teacher can instruct students *how, when, and why* to use certain cognitive strategies. They also need to observe, learn, and practice *how to teach students to deal with* difficulties on their own, and *what to do* if they cannot overcome the difficulties. That is to say, pre-service teachers need to learn and practice how to support students' acquisition of metacognitive strategies and raise their

awareness through meta-discussion, think aloud, and *WWW&H*. In addition to reflecting on and learning how to sustain students' engagement in metacognitive strategies, leading to the gradual release of the responsibility (Hartman, 2001), pre-service teachers also need to understand that instructional goals, learner characteristics, and materials can shape their teaching for metacognition. Moreover, pre-service elementary teachers must learn how to model evaluating one's own understanding of a specific strategy and *its efficacy* in reading comprehension. That is to say, I believe methods classes should be micro-classrooms where pre-service teachers can blend their professional knowledge, communicative, critical thinking, and creative skills for the best practices (Sawyer, 2004; Woods, 1990).

In addition to the opportunities of reflection, discussion, and authentic teaching experiences, pre-service teachers also need faculty's feedback both to become aware of their own metacognition and also to notice their strengths and weaknesses in teaching for metacognition before they take it to their own classrooms. As Curwen et al. (2010) emphasized, increasing teachers' metacognition helps with their students' higher learning during literacy instruction, getting feedback from the course instructor and peers is important for pre-service teachers in improving their knowledge and ability to teach for metacognition. Addressing Wilson and Bai's (2010) study limitations, future studies, therefore, should take pedagogical needs of pre-service teachers into account as highlighted by this study. More importantly, these studies should investigate the impacts of practice-oriented methods classes on teachers' acquisition of necessary knowledge, tools, and teaching skills for metacognition.

### **Limitations**

The findings of this study are restricted to its specific context and small sample size. Because they reflect only three pre-service elementary teachers' understanding of metacognition and teaching for metacognition, the findings need to be approached with caution. The homogenous sample might not be the best representative of its current population. Consistent data patterns gained from the interviews might stem from this limitation. Moreover, considering pre-service elementary teachers' pedagogical needs, I cannot differentiate whether the interview questions initiated reflective thinking and helped them recognize their needs or they were already aware of what they lack and need regarding teaching for metacognition. Because they were not really competent in defining metacognition and talking about metacognitive children, they might have felt uncomfortable and wanted to label an external source as a potential reason for their incompetence.

Furthermore, only a single-session of 150 minute reading methods class observation was conducted for the purpose of triangulation. Therefore, I was not sure that observed instructional pattern was consistent for all classes. Because an interview with the course instructor was not conducted, there was no insights about their instructional patterns in general and the rationale behind their practices on that specific day. In addition to restricting data triangulation, this limitation prevented me from understanding the teacher educator's understanding and appreciation of teaching for metacognition. To improve these limitations, future research is to investigate teacher educators'

understanding and appreciation of teaching for metacognition. Especially, questions targeting at the rationale behind their instructional practices, content and materials choice, and educational policies need to be addressed.

Moreover, a rubric should be developed based on a framework which reflects metacognitive instruction and teacher education. In this way, teacher educators' instructional practices can be evaluated more objectively. Also, in addition to increasing sample size and diversity of the participants, observing and analyzing pre-service elementary teachers' authentic experiences of teaching for metacognition is strongly recommended. Using a similar rubric (instructional and evaluation tool) is also highly recommended, not only to illuminate pre-service teachers' perspectives and needs more, but also to provide constructive feedback for their developing knowledge and teaching skills of metacognition,

## Özet

### Giriş

Okuma, Myers ve Paris (1978) tarafından tanımlandığı gibi, "algısal süreçleri, bilişsel becerileri ve üstbilgi bilgisini içeren karmaşık bir davranıştır." (s. 680). Bu tanım, anlam oluşturmada harf ve fonolojik duyarlılığın önemli olduğunu vurgularken (Boulware-Gooden, ve diğ., 2007), okuma-anlamanın ileri düzeylerine erişen öğrenciler için bunların yeterli olamayacağını atını çizer. Zamanla, anlam oluşturmada kelime bilgisi, bilişsel stratejiler ve üstbilgi beceriler gibi diğer faktörler de önem kazanmaktadır (Boulware-Gooden ve diğ., 2007). Yetkin okuyucular; anlamı oluşturmak ve bilgi edinmek için bilişsel stratejiler kullanılırken, okumanın planlanması, anlam oluşumunu izlemek, bilişsel stratejileri ve süreçleri düzenlemek (Doğanay Bilgi & Özmen, 2014) hem anlamayı hem de okuma eyleminin kendisini değerlendirmek için üstbilgi stratejilerden ve süreçlerden yararlanırlar. Bu nedenle, tüm bu unsurlardan herhangi birinin yetersiz olması, okumanın temel amacı olan anlamın oluşturulmasına sebep olabilir (Boulware-Gooden ve diğ., 2007).

Flavell'in (1979) üstbilgi teorisini önermesinden bu yana, üstbilgi eğitimi ve etkilerini inceleyen çok sayıda çalışma yapılmıştır. Farklı öğrenci grupları ve muhteva alanlarında yapılan deneysel ve yarı deneysel çalışmalarda, üstbilgi strateji eğitimi almış okuyucuların anlama, performans ve öğrenme sorumluluklarının arttığı bulunmuştur (Boulware-Gooden ve diğ., 2007; Cross & Paris, 1988; Michalsky ve diğ., 2009; Veenman ve diğ., 2006). Bununla birlikte, Veenman ve arkadaşları (2006) "birçok öğretmenin üstbilgi hakkında yeterli bilgiye sahip olmadıkları" (s.10) söylerken Boulware-Gooden ve arkadaşları da (2007) öğretmenlerin genellikle üstbilgi süreçleri öğretmediklerini açıkça belirtmişleridir. Bu iddialar, üstbilgi eğitimi etkilerinin incelendiği birçok deneysel çalışma tarafından bir bakıma onaylanmıştır çünkü çoğu çalışmada üstbilgi eğitimi ya araştırmacılar tarafından verilmiş ya da deneysel uygulamalardan önce öğretmenler üstbilgi konusunda eğitilmişlerdir (bkz. Gaultney, 1995; Houtveen & van de Grift, 2007; Muñiz-Swicegood, 1994). Üstbilgi eğitimi ve öğrenci başarısı ilişkisi çokça çalışılmasına rağmen, öğretmenlerin üstbilgi farkındalığını araştıran sınırlı sayıda çalışma olması (Wilson ve Bai, 2010) ve bu çalışma sonuçlarının

öğretmenleri üstbilis ve eğitim konusunda yetersiz bulması (bakınız Fisher, 2002; Kerndl & Aberšek, 2012; Thomas & Barksdale-Ladd, 2000; Wen, 2012) öğretmenlerin üstbilis eğitimi konusunda bilgi ve yetkinliklerinin incelenmesi gerekliliğini ortaya koyar.

Öğrenme, öğretmenlerin neyi nasıl bildikleri ile doğrudan ilişkili olduğundan (Feiman-Nemser, 2001) ve öğrencilerin sorgulama ve özerk gelişimleri için öğretmenin üstbilisel stratejileri modellemesi gerekliliği (Bowman ve diğ., 2005; Hartman 2001a) göz önünde bulundurarak, Fisher (1998), Schraw (1998), Veenman ve arkadaşlarının (2006) önerileri doğrultusunda üstbilis eğitim çerçevesi çizilmiştir. Bu çalışmanın benimsediği üstbilis eğitimi anlayışına göre, öğretmen öğrencilere üstbilis stratejilerini (planlama, gözleme, düzenleme ve değerlendirme) sesli düşünme yöntemi ile modeller. Bu sırada neyi, neden, nasıl ve ne zaman yaptığını anlatır. Ve öğrencilerine üstbilis stratejilerini küçük gruplarda ve sonrasında tek başlarına uygulayabileceği ortamları yaratır.

#### *Tanımlar*

Üstbilis bireyin bilişsel aktivitelerinin bilgisini ve bu aktivitelerin istendik kontrolünü kapsar (Baker & Brown, 1984; Garner,1990; Flavell, 1979; Veenman ve diğ. 2006). Okuma açısından, üstbilis “okuyucuların, bilişsel kaynakları, okuma görevi ve her ikisi arasındaki uyum bilgisi” ni (Griffith ve Ruan 2005, s.7) ve aynı zamanda anlam oluşturmak için bilişsel eylemin sonuçlarını kontrol etme, bir sonraki eylemi planlama, eylemlerin etkinliğini gözleme, stratejileri test etme, revize etme ve değerlendirme gibi düzenleyici mekanizmaların kullanılmasıyla alakalıdır (Baker ve Brown, 1984).

Üstbilis eğitimi ise öğrenci üstbilisini etkinleştirecek ve geliştirecek öğretim olarak tanımlanabilir. Veenman ve arkadaşları (2006), üstbilis eğitimini “üstbilis derslerin bir parçası haline getirmek ve öğrencileri bilişsel eylemlerinin ve bu eylemlerinin yararlarının farkına vardtırmak” (s.10) olarak tanımlar. Okuma eğitimi açısından üstbilis eğitimi, öğrenciye okuma görevleri, kişisel kaynaklar ve yeterlilikleri göz önünde bulundurarak okuma eyleminin nasıl planlanacağını, öğretmen modellemesi yoluyla okuma stratejilerinin ne zaman, nasıl ve neden kullanılacağını, bu stratejilerin okuma süreci ve anlama üzerindeki etkilerini ve okuma sürecini, strateji kullanımını ve anlamayı nasıl değerlendireceğini öğretmeyi kapsar (Doğanay Bilgi & Özmen, 2014; Pardo, 2004; Pintrich ve diğ., 2000; Pressley, ve diğ., 1987).

#### *Yöntem*

##### *Araştırma Deseni ve Katılımcılar*

Bir vaka incelemesi olan bu çalışmada kolaylık örnekleme kullanılmıştır. Katılımcılar Amerika Birleşik Devletleri’nde okuma yöntemleri dersi alan bir erkek ve iki kadın sınıf öğretmeni adayından oluşmaktadır. Aday öğretmenler çalışmaya gönüllü olarak katılmışlardır.

##### *Veri toplama araçları*

Aday öğretmenlerin üstbilis ve üstbilis eğitimi ile ilgili bilgi ve yeterliliklerine yönelik veri, yarı yapılandırılmış mülakat ve sınıf gözlemi yoluyla toplanmıştır. Bu-



nun için katılımcılarla 17-22 dakika kadar süren görüşmeler yapılmıştır. Bunun yanında, okuma yöntemleri dersi kapsamında anlama konusu 150 dakika boyunca gözlemlenmiştir. Gözlem sırasında, ders materyali, öğretim organizasyonu ve konunun sunumu gibi konulara dair notlar tutulmuştur. Ayrıca, özellikle aday öğretmenlere üstbilis ve eğitimi konusunda nasıl rehberlik edildiği ve model olunduğuna dikkat edilmiştir.

#### *Veri analiz yöntemleri*

Gözlem notları ve görüşme transkriptleri tümevarım ve tümdengelim kodları ile analiz edilmiştir. Önce üstbilis teorisi ve üstbilis eğitimi çerçevesinde oluşturulan veri kodlarıyla tümdengelimli analiz yapılmıştır. Sonrasında, tüm veriler tümdengelimli analizle değerlendirilemediğinden, veri seti tümevarımlı analize sokulmuştur. Bu analiz basamağında, aday öğretmenlerin “pedagojik ihtiyaçlar”ı ortaya çıkmıştır. Veri kodlarının nihai karşılaştırılması ve şemaların düzenlenmesinden sonra veri temaları oluşturulmuştur. Kodlar ve temalar üç kategoride organize edilmiştir. *Üstbilis sınıf öğretmeni adaylarının konuya aşinalığını, üstbilis ve üstbilisel öğrenci tanımlamalarını ve üstbilis algılarını kapsar. Üstbilis eğitimi, öğretmen adaylarının üstbilis eğitimi gerekliliğini fark etmelerini ve okuma yöntemleri dersi sırasındaki üstbilis eğitimi öğrenme deneyimlerini; pedagojik ihtiyaçlar, öğretmen adaylarının üstbilis eğitimi için vurguladıkları ihtiyaçlarını kapsar. Puanlayıcılar arası güvenilirlik yeterli görülmüştür.*

#### *Bulgular*

Veri analizi, sınıf öğretmeni adaylarının okuma yöntemleri dersi öğrenme deneyimlerinin onları üstbilis ve eğitimi konusunda yeterince desteklemediğini ortaya koymuştur. Bu iddianın sebepleri ve kanıtları veri analizi kodları da göz önünde bulundurulurken betimlenmiştir.

#### *Üstbilis ve Üstbilisel Öğrenci*

Tüm katılımcılar, üstbilis konusuna yeterince aşina olmadıklarını belirtmişleridir. Üstbilisi tanımlamaları istendiğinde, iki katılımcı “düşünme hakkında düşünme” gibi bilindik tanımlamaları dile getirirken, bir katılımcı bu kavramı tanımlayamayacağını söylemiştir. Bunun yanı sıra, çok yakında öğretmenlik yapmaya başlayacak olan öğretmen adaylarının üstbilis eğitimi için gerekli olan pedagojik anlayışları incelenmiştir. Bu amaçla katılımcılardan üstbilisel öğrencinin yeterliliklerini belirtmeleri istenmiştir. Üstbilis tanımlamasını yapamayan katılımcıya ise bu soru sorulmamıştır. İki katılımcıdan biri bu soruyu cevaplayamazken diğeri de bu soruya cevap verebilmek için matematik dersi bağlamından bir örnek vermiştir.

Gözlem notları, aday öğretmenlerin neden üstbilise aşina olmadıklarını anlamada yardımcı olmuştur. Gözlemlenen dersin konusu “anlama” olduğundan, aday öğretmenler okuma beceri ve stratejileri, şemalar teorisi, art alan bilgisi, sorgulama, metin yapısı analizi, zihinsel imgeleme gibi konuları içeren okumalar yapmış ve bunları sınıf arkadaşlarına sözlü olarak sunmuşlardır. Fakat hiçbiri özellikle üstbilis ve eğitime yönlendirilmemiş ve ders öncesi bu konuyla ilgili okuma yapmamışlardır. Üstbilis konusuna ise dersin son 12-15 dakikasında değinilmiştir. Anlama için bu kadar önemli

bir konuya, iki saatlik ders süresinin son %10-12'lik zaman diliminin ayrılması, aday öğretmenlerin üstbilis sürecinin ve stratejilerinin nasıl işlediğini anlamaları, bunların okuma eylemi için gerekliliğini kavramaları, üstbilisösel öđrenci yeterliliklerinin farkına varabilmeleri, üstbilis ve eđitimi için gerekli zihinsel şemalarını oluşturmaları için yeterli olmayabilir.

### *Üstbilis Eđitimi*

Görüşmeler sırasında, katılımcılara birtakım öğretim amaçları (Common Core State Standards, English Language Arts Standards, Anchor Standards, College and Career Readiness Anchor Standards for Reading) gösterilmiştir. Öğrencilerin üstbilis strateji ve süreçlerinden yararlanmalarını gerektiren bu bağlam, katılımcı aday öğretmenler tarafından tanınamamıştır. Katılımcılar öğretim amaçlarını gerçekleştirmek için bilisösel süreçlerden ve bunları destekleyen öğretim faaliyetlerinden bahsetmişlerdir. Bunlar arasında yeniden okuma, ana fikir özeti, görsellerden yararlanma, sesli okuma, öğretmen soruları bulunmaktadır. Tüm katılımcılar, öğrencilerin bu tür stratejileri içselleştirebilmesi için okuma ve anlama stratejilerinin pratik yapılması gerekliliğinden bahsetmiştir. Fakat hiçbir katılımcı, bu bilisösel stratejileri öğretmek için öğretmen modellemesinden ya da tüm okuma sürecini sesli düşünmeden bahsetmemiştir. Katılımcılar, öğrencilere okumanın nasıl planlanacağı, hangi stratejinin *nerde, nasıl ve neden* kullanılacağını, hem anlama hem de strateji kullanımının nasıl değerlendirileceğini öğretmekten bahsetmemişlerdir. Öğretmen adayları bu amaçların gerektirdiği üstbilis eđitiminden bahsetmemiştir.

Ders gözlem notları değerlendirildiğinde, aday öğretmenlerin okuma stratejileri konusunda teorik bilgiye hâkim olmalarına rağmen, Shulman'ın (1987) pedagojik içerik bilgisi olarak adlandırdığı alanda yetkin olmadıkları görülmüştür. Her ne kadar sınıf içi sunumlar sırasında bilisösel stratejilerinin açıkça öğretilmesi vurgulanmışsa da, aday öğretmenler bu stratejileri öğretmeyi deneyimlememişlerdir. Bununla birlikte, bu stratejileri üstbilis eđitimi gereğince öğreten bir örnek de görmemişlerdir.

### *İhtiyaçlar*

Katılımcılar, üstbilis eđitimi bilgisi ve becerilerini geliştirecek örnek ders planlarına, öğretim üyelerinin örnek derslerine, video derslere ve sınıf içi uygulamalara olan ihtiyacı dile getirmişlerdir.

### *Tartışma ve Sonuç*

Bu çalışmanın bulguları, öğretmenlerin üstbilis eđitimi konusundaki yeterliliklerini inceleyen geçmiş çalışmaların bulgularıyla benzerlik göstermiş ve sınıf öğretmeni adaylarının üstbilis ve eđitimi farkındalıklarını ortaya koymuştur. Bu sebeple, bulgular özellikle öğretmen eđitimi programları için önem arz etmektedir.

Bu çalışmanın ivedilikle ele alınması gereken bulgusu aday öğretmenlerin, üstbilis eđitimi beceri ve yeterliliklerini geliştirebilmeleri için öğretmen eđitimcilerinin rehberliğine ve modellemesine ihtiyaç duymalarıdır. Bu eksikliğin, öğretmen adaylarının gelecek öğretim uygulamaları ve öğrencilerinin öğrenme algıları üzerinde potansiyel olumsuz etkiler yaratabileceği düşünülmektedir. Aday öğretmen J, küçük çocuk-

ların üstbilis stratejiler ve süreçlerinden yararlanabileceğine inanmamakla birlikte bunların “öğrencilerin kafasını karıştıracağını” düşünüyordu. Fakat bu aday öğretmen, Zihin Kuramı'nın 3 ila 5, üstbilis bilgisinin 5 ila 6, ve üstbilis stratejilerin 8 ila 10 yaşlarında ortaya çıkıp (Berk, 2003; Veenman, 2016) geliştiğini bilseydi, öğrencilerinin kafasının karışacağını düşünmezdi. Bu nedenle, öğretim yöntem ve materyalleri derslerinin üstbilis eğitimi açısından aday öğretmenleri nasıl desteklediğini inceleyen araştırmalar öneriyoruz.

Gözlem sırasında, Feiman-Nemser'in (2001) öne sürdüğü gibi öğretmen eğitimcileri genellikle öğretmen adaylarından beklediklerini uygulamazlar. Gözlemlenen ders de, bir yöntem dersinden daha çok, okuma eğitimi ve okumanın çeşitli bileşenlerinin işlendiği teorik bir ders olarak tanımlanabilir. Bu yüzden, yöntem derslerinin teori ve pratik uygulamaları harmanlaması gerektiğine inanarak, sadece teorik bilginin etkin pratik uygulama veya ideal performansını doğurmayacağını vurguluyoruz. Aday öğretmenler, teorik bilgiyi içerik, pedagojik içerik, öğrenci bilgisi, eğitim ortamları bilgisi, müfredat bilgisi ve eğitim sonuçları bilgisi (Darling-Hammond, 2006; Shulman, 1987) ile harmanlayabilmelidir. Teorik bilginin öğrenciye yarar sağlayacağı pratik bir forma dönüştürülmesi önemli olduğundan, yöntem derslerinde aday öğretmenlerin aktif roller alması gerekmektedir. Elmore'un (1996) da vurguladığı gibi, öğretmen adayları otantik sınıfta içeriğin nasıl öğretildiğini gözlemleyebilmeli ve kendi sınıflarında yeni bilgiyi öğretebilmelidirler (Hartman, 2001b, “The Learning Pyramid” t.y.). Ayrıca, aday öğretmenlerin yaptıkları işe dair güvenilir kaynaklardan geribildirim ihtiyacı duydukları unutulmamalıdır (Elmore, 1996). Bu bilgiler dâhilinde, öğretmen eğitimcilerin üstbilis ve öğretmen yetiştirme anlayışlarının incelenmesini öneriyoruz.

Bu çalışma, okuma öğretimi eğitimi alan öğretmen adaylarının kendilerinin de üstbilisi deneyimleyebileceği şekilde sunulmasının gerekliliğini de vurgular. Üstbilis eğitimi veren uzmanları gözlemleyen öğretmen adaylara, aynı zamanda üstbilis ve eğitime dair anlayışlarını yansıtacak ve kendi öğretim deneyimleri üzerine eleştirel düşünebilecekleri imkânlar verilmelidir. Üstbilis eğitim ilkeleri göz önünde bulundurulduğunda, aday öğretmenlerin *neyi, nasıl, ne zaman ve neden* (Veenman ve diğ., 2006) kuralını nasıl uygulayacaklarını, öğrenci farkındalığını arttıracak ve üstbilis strateji edinimini destekleyecek meta-tartışma ortamlarını nasıl yaratacaklarını, nasıl sesli düşüneceklerini örnekler görerek, tartışarak ve deneme yoluyla öğrenmeleri desteklenmelidir. Curwen ve arkadaşlarının (2010) belirttiği gibi, öğretmenlerin üstbilis farkındalığı ve üstbilisi etkin kullanmaları, okuma öğretimi sürecinde öğrencilerin öğrenmelerini etkilemektedir. Bu nedenle öğretmen eğitimcileri, aday öğretmenlerin hem üstbilisel süreçlerinin farkında olmalarına yardımcı olacak hem de onların üstbilis eğitim uygulamalarını destekleyecek geribildirimler sunmalı ve aday öğretmenlere bu geribildirim sürecine katılma imkânı vermelidirler (Sawyer, 2004; Woods, 1990). Bu yüzden, özellikle uygulama sınıflarının, aday öğretmenlerin gelecekte mesleklerini icra edecekleri sınıf ortamını yansıtacak şekilde düzenlenmesini ve bu uygulama odaklı yöntem derslerinin üstbilis eğitiminin bilgi ve beceri gelişimi üzerindeki etkisini ölçecek çalışmalar öneriyoruz.

### Acknowledgement

I sincerely thank participants who made this study possible, Dr. Tara Brown for her constructive feedback, Daniel Vivas, and referees for their contributions to the final version of this work.

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## Appendix

### Semi-structured interview questions

1. How can you define metacognition? What have you learnt about it so far?
2. How would you define a metacognitive child? What can she or he do for re-ading?
3. How would you help your students to develop these capabilities (on the standards sheet)? What kind of instructional theories/ methods/ techniques would you benefit from/use?
4. Do you think you could benefit from metacognition theory as one of the resources to realize these standards? Why/Why not?
5. Do you think you have seen models training children with metacognition? Why/why not?
6. What is teacher's role in developing children's metacognition?