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Exploring Teacher Self-Regulation: Expertise and Culture Differences

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Abstract

Self-regulation is one of the most important mechanisms in human behavior. However, a little is known about self-regulation of teachers. There can be several factors affecting teacher self-regulation such as expertise level and cultural differences. This study aims to investigate teacher self-regulation levels as well as expertise level and cultural differences. Data were collected from 279 teachers who are pre-service and in-service teachers from western and non-western countries. The results showed that in-service and pre-service teachers did not differ in teacher self-regulation but in sub-dimensions of goal setting, mastery goal orientation, self-instruction, and self-reaction. Moreover, teachers from individualistic and collectivist cultures showed differences in their self-regulation as well as sub-dimensions of goal setting, mastery goal orientation, intrinsic interest, self-instruction, emotional control and self-evaluation. The discussion focuses on the conclusion, implications and limitations of the study.

Keywords: Teacher self-regulation, expertise, culture

Declaration of Autonomous Work

I confirm that this master's thesis is my own work and I have documented all sources and material used.

This thesis was not previously presented to another examination board and has not been published.

Dachau, 18.01.2021 K. Azra Ates

Place, Date Signature

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1.Introduction

Many researchers have tried to explain human behavior and its regulation with different approaches (Bandura, 1986; Deci & Ryan, 1987; Vroom, 1964). Among them, social cognitive theory (SCT) affirms that human behavior is a result of personal, social, and cognitive processes (Bandura, 1986), which are in interaction with each other. These interactions lead people to regulate their own behavior, so-called self-regulation.

Self-regulation is defined as a self-directive process of personal thoughts, and feelings, and behaviors in pursuit of a goal (Zimmerman, 2000). In other words, people think, decide, and believe before they behave which affects their thoughts (Bandura, 1989). Self-regulation has become more and more important in several fields like management, education, and sports (Kirschenbaum, 1987; Rothstein et al., 2016). In education, self-regulation has become a popular issue due to its relation to several relevant factors. For instance, it is found to be an indicator of academic achievement (Yumusak et al., 2007) as well as motivation (Wigfield & Eccles, 1992). Moreover, Zimmerman (2002) stated that students with high self-regulation skills are more likely to be lifelong learners and have better social skills in their future lives.

Self-regulation is also studied in terms of teacher education because teachers are one of the most important factors in student achievement, and they are the ones to teach self-regulation skills to students (Hattie & Yates, 2013; Hwang & Vrongistinos, 2002). Self-regulation has also been recognized as an important part of teacher professional competence because it was found as an important indicator of the quality of teaching practice and instruction (Maslach & Leiter, 1999). Moreover, self-regulation has been included in theories and models regarding teacher professional competence. For example, Baumert and Kunter (2013) considered self-regulation as an integral part of their COACTIV model of teacher professional competence since professional self-regulation is related to teachers` occupational well-being and coping with challenges at work, and their motivation. In addition, teacher self-regulation is found to be positively related to several factors such as student achievement, teaching quality, and instructional planning (Capa-Aydin et al., 2009; Hwang & Vrongistinos, 2002).

For teacher self-regulation, Zimmerman's (2000) proposed 3-phased cyclic model. His model consists of three cyclic phases; 1) forethought, 2) performance, 3) self-reflection, and they are reciprocal to each other. Capa-Aydin (2009) adapted this cycle for teacher self-regulation, which the present study will use their model.

Besides the demonstrated importance of teacher self-regulation and its relation to various factors such as student achievement and instructional quality, it is crucial to teach and foster self-regulation to teachers in a way we want them to teach their students (Malmberg, 2006). To be able to foster self-regulation more efficiently, it is important to investigate factors that may influence it. These factors can be expertise level and culture.

Bandura (1986) discussed that self-regulatory skills develop by experience and practice. Therefore, it can be concluded that pre-service and in-service teachers can show differences in their self-regulation. However, teacher self-regulation has not been studied widely and the currently limited literature focuses mostly on pre-service teachers (Arsal, 2009; Niemi, 2002). As mentioned earlier, self-regulation is a crucial part of teacher professional competence. This shows that self-regulation in teacher professional development should not be only for pre-service but also for in-service teachers because all teachers experience and use self-regulation strategies in different ways (Uzuntiryaki-Kondakci et al., 2017). Since teaching is a complex process including an array of competencies and these competencies are practiced over time, expertise level differences may be important to inquire about teacher self-regulation. However, surprisingly, little is known on how teachers with different expertise levels differ in their self-regulation.

Furthermore, expertise level cannot be thought of in a separate frame than culture because each culture has its own way of teaching, behavior regulating, teacher education, and policies (Berliner, 2001; Sternberg, 2014). Similarly, McInerney and King (2011) stated that teacher expertise is shaped by social environment, help, and collaboration as well as different motivations, and even though teacher self-regulation progresses by practice and time, it cannot develop in the same way in different cultures. Specific characteristics of cultures may result in differences in teacher self-regulation. For example, perception of `self` would affect motivational beliefs and thus, self-regulatory skills.

Therefore, this study will explore teacher self-regulation differences among teachers with different expertise levels and culture as well as the interaction effect between culture and expertise level. Moreover, to investigate deeper, sub-dimensions of the cycle stated above will also be investigated.

2.Theoretical Background

This section starts with an insight to research on foundations and definitions of self-regulation based on social cognitive theory (SCT). It continues with a description of teacher self-regulation and underlines its importance. The last two sections of this chapter investigate the culture and expertise differences in teacher self-regulation.

2.1. Social Cognitive Theory

Many theories have been proposed to explain the complex nature of human behavior and its regulations from different point of views for some decades (Bandura, 1986; Deci & Ryan, 1987; Skinner, 1953; Vroom, 1964). Those explanations and theories differ in their perspectives such as peripheral and cognitive. Peripheral perspective assumes that environment plays a central role in human behavior and regulation (Skinner, 1953), whereas cognitive perspectives include cognitive or intellectual processing rather than the only environmental effect (Deci & Ryan, 1987; Vroom, 1964). In addition, some theories such as include both views and expands it with interactions between peripheral (i.e., environmental) and cognitive factors (Bandura, 1986). Starting from the peripherical perspective, Skinner (1953) claims that the source of human behavior is an action of an external stimulus and he describes the mechanism of the behavior regulation as the connection between external stimuli and change in behavior accordingly. However, Vroom (1964) explains human behavior, its regulation, and motivation from a cognitive perspective which states that the cognitive processing of information is also an important factor determining how people act and it is affected by the expectation of its outcomes. In addition, Deci and Ryan (1987) enhance this view by taking the intention factor into account and discuss that the regulation of human behavior includes the initiation of those intentions. Moreover, Bandura (1986) also agrees with the role of intentions in human behavior as well as peripheral factors and he extends those aspects even more in SCT. It includes both peripheral and cognitive perspectives as well as the interactions between these factors (Bandura, 1986). Therefore, the present study will use SCT to have a more comprehensive view.

SCT prospers and widen different views about human behavior and its regulation, in a way that people are not only affected by the environment but also behave as a result of the cognitive process or personal characteristics as well as interactions between them (Bandura, 1986). The fundamental idea of the theory is that human behavior results from an active process of people`s own cognitive contribution to their beliefs and motivation to

their capabilities. For instance, unprecedented social and technological changes can affect one's social and economic life in a way of causing loss of motivation or depression (Bandura, 1989). However, due to differences in personal characteristics or social environment, these unprecedented changes can lead people to react in different ways such as being motivated toward technology which upgrades one's work performance.

Bandura (1986) affirms that people are also capable of self-organizing, reflecting, and self-regulating and these abilities operate in a comprehensive framework including personal, environmental, and behavioral determinants. SCT considers these three determinants as reciprocally interactive.

Bandura (1989) explains these three interactions in terms of three major links. Firstly, the relationship between personal and behavioral determinants (P ←→ B) shows the two-way interaction between people's thoughts and actions. This bidirectional causal relationship demonstrates how human behavior is affected by what people think and believe or how the thoughts and beliefs of a person are influenced by the effects of their behaviors in turn (Bandura, 1986). To illustrate, a person who is verbally persuaded by someone important for her/him may show a bigger effort in succeeding in a task because s/he would believe her/his capability in doing that task (Bandura, 1989). Likewise, the part where the environmental and personal determinants are in interaction (P ←→ E) indicates that people's beliefs, expectations, and cognitions are influenced by environmental factors. As a result of the reciprocal relationship, people's characteristics also have an impact on their social environment (Bandura, 1986). Lerner (1982) adds that people receive various reactions from their social environment, depending on their physical appearances like age or race. Similarly, personal characteristics such as cultural background or social status also play role in different reactions. For example, a child who has known as aggressive in his/her class in terms of behavior toward peers (representing his/her social status) would have a different relationship with the peers compared to another child with a reputation of being unassertive (Snyder, 1981). Lastly, having a closer look at the relationship between behavioral and environmental determinants (B ←→ E), our behaviors both change our environment and are affected by it (Bandura, 1986). Bandura (1989) explains the fact that our environment constantly changes brings alterations to our behaviors. This can be exemplified by one of the most influencing phenomena of the year 2020, the Covid-19 pandemic, where people started to move less, there was more learning and working online. People needed to change their working environments which also affected factors like motivation, flexible working hours, and thus, regulation of schedules (Kaharuddin, 2020).

However, some aspects of the environmental changes may not be influential unless they are not activated by a behavior (Bandura, 1989). For example, teachers do not reward students if they did not succeed in anything, but they praise them if they accomplish something praiseworthy.

Bandura (1989) also adds that different factors influencing any of the determinants do not necessarily need to affect them in an equal amount. Some of the relationships may be more or less obvious than others. For example, considering B ←→ E interaction, Zimmerman (1989) exemplifies that students' strategy planning (B) may not be revealed in the school environment (E) where the curriculum or general rules are very strict. However, this strict school environment (E) may be more obvious in P ←→ E interaction where students' academic expectations (P) are shaped by the school's curriculum goals (E). So, the same environmental determinant can have different interactions with other two determinants. Likewise, not all of the determinants need to be influenced at the same time and some may take a longer time to be affected by another.

Those relationships assert that we, as human beings, create our own environment and we are shaped by our interaction with it (Bandura, 1989). As mentioned earlier, this brings up the capabilities like self-reflection, self-regulation, forethought, and symbolizing. Among those capabilities, Bandura (2001b) describes self-regulatory capability as the capability of goal setting and both motivating and monitoring oneself' s behavior according to those goals. Therefore, this capability makes people decide their objectives, plan the routes and strategies to reach them, and evaluate their process (Bandura, 2001b).

Since self-regulation has been defined as a human capability, it has been studied in different fields such as sports, education, and management. For example, in sports, Kirschenbaum (1987) argued that training the body needs not only physical but also cognitive and behavioral regulation, thus sports performance is closely related to self-regulation skills. In a more recent study, Altfeld et al. (2017) stated that gaining self-regulation skills is a key point for players and needs to be practiced besides physical practice. The same study found out that basketball players performed better when they improved emotional control by self-regulation. In addition to sports, self-regulation also plays an important role in the workplace. For instance, self-regulation at the workplace is critical to facilitate professional training programs and they included cognitive, environmental, and affective aspects of the self-regulatory process into their resilience model for the workplace (Rothstein et al., 2016). From these examples, it can be inferred that self-regulation is one of the most important mechanisms regarding human behavior.

However, very little is known about the self-regulation of teachers. Nonetheless, the present study will have a closer look at self-regulation in teacher education.

2.2. Self-Regulation

Self-regulation has been defined and studied by several scientists (Boekaerts, 1988; Dyshkov et al., 2005 as cited in Shagivaleeva et al., 2015; Kuhl, 2000; Schmitz & Wiese, 2006; Thoresen & Mahoney, 1974; Zimmerman, 2000) over the last decades. From a very general view, Dyshkov et al. (2005, as cited in Shagivaleeva et al., 2015) describe it as a characteristic of the human being to keep important measures that are shaped by internal and external changes. These measures represent behavior and changes in it. On the other hand, from a more specific point of view, one of the first self-regulation studies done by Boekaerts (1988) described it as a goal-oriented motivational process. From a closer look, Boekaerts (1996) stated that this process includes effective strategy usage, self-efficacy, time management, metacognition, and effort to practice. Likewise, Zimmerman (2000) has a similar perspective through self-regulation, and he extends this view based on Bandura's (1986) SCT. He defines self-regulation as 'self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals' (Zimmerman, 2000, p. 14). As the most extensive view based on SCT and applicability in education, this study will be based on Zimmerman's definition of self-regulation.

As mentioned earlier, self-regulation has been studied in different fields. In education, it has been gaining importance because of its significance in both students' and teachers' lives such as enhanced student learning, effective teaching, and student motivation (Pintrich et al.,1993; Yumusak et al., 2007). For instance, in terms of student learning, self-regulation was found as a strong predictor of academic achievement and therefore, used as a general requirement for an assessment-based education (Pintrich, et al., 1993; Zimmerman & Martinez-Pons, 1986). For example, Yumusak et al. (2007) conducted a study with high school students' academic achievement in a biology course and their self-regulation skills. They found that self-regulation was an indicator of student achievement. Moreover, self-regulation has been found not only as a predictor of academic achievement, but it also makes students take more responsibility in their own learning as well as to foster active learning (Brown & Hirschfield, 2007; Winne, 2005). This also implies that self-regulation can be considered as an important factor in being a lifelong learner. In addition to that, Zimmerman (2002) adds that students with high self-regulation

skills are also more likely to have better social skills which also implies that they are better lifelong learners. Being a lifelong learner is considered a 21st-century skill where people learn and start practicing it at school (Trilling & Fadel, 2012). Therefore, self-regulation in education is also important for students' future work lives since it is a differentiating factor in their future professional development (Zimmerman, 2002). Self-regulatory capabilities play a big role especially in long-term work-related projects which are challenging. Therefore, it can be concluded that it is essential for people to have self-regulatory skills before their work lives, or in other words, at school.

Self-regulation is found to be in relation not only with academic outcomes but also with goal setting (Bandura & Schunk, 1981), self-efficacy (Bandura, 1982), self-instruction (Schunk, 1986), self-evaluation (Bandura & Cervone, 1986), and self-motivation (Bandura & Kupers, 1964). For instance, self-efficacy is considered to be one of the cornerstones of self-regulation (Bandura, 1986) Furthermore, it is found that students` self-efficacy beliefs trigger their motivation toward goal setting and strategy planning (Zimmerman, 1989). Likewise, students with high self-efficacy were observed to be more controlling and aware of their own performance, which also brings them to be persistent over challenging tasks (Zimmerman & Ringle, 1981). In addition, Zimmerman (1989) states that self-observation, self-judgment, and self-reaction are the key aspects of behavioral influences on self-regulatory processes and as a result of the triadic reciprocal relationship in SCT, they affect and are affected by the environmental and personal traits.

2.3. Teacher Self-Regulation

Self-regulation has also come into question in teacher education because of its demonstrated importance in student learning, performance, and gaining social skills. Studies showed that teacher self-regulation is found to be positively related to not only student-oriented factors described in the previous section, but also more specifically teacher-based factors such as teaching quality, motivation to teach, and instructional planning (Capa-Aydin et al., 2009; Hwang & Vrongistinos, 2002; Tschannen-Moran et al., 1998) or teaching as a profession such as job satisfaction, engagement, and resilience (Klusmann et al., 2008). For instance, Klusmann et al. (2008) found that teachers with high resilience and engaged self-regulation patterns showed less emotional exhaustion and more job satisfaction as well as better instructional quality. Similarly, teacher self-regulation was found to be related to learning support to their students and it also explains the difference in their instruction quality (Kunter et al., 2013).

Due to these important relations of self-regulation in teachers` professional lives, some researchers described self-regulation as an integral part of teacher professional competence. For example, Baumert and Kunter (2013) developed a model called COACTIV to describe teacher professional competence and included self-regulation as one of the main parts of it. In this study, teacher self-regulation will be studied in terms of professional competences rather than a student-related factor.

As teachers are one of the most important factors affecting students' academic achievement, they are also crucial in teaching self-regulation to their students (Hattie & Yates, 2013; Hwang & Vrongistinos, 2002). Therefore, current literature mainly focuses on self-regulation in student learning (Zimmerman & Kitsantas, 2014) or teaching processes. These focuses are either on how to teach self-regulation to their students (Perry et al., 2002) or how to arrange the teaching and learning environment in a way that students can practice it (Kistner et al., 2010). However, it is also important to assure that the teachers themselves have the necessary self-regulatory skills given that the self-regulation process in teachers is an important indicator of effective teaching (Bembenutty, 2007). Being competent in the subject to teach is not enough for effective teaching (Dembo, 2001), teachers should be also competent in regulating their own learning and teaching processes. Moreover, Corno and Randi (1999, as cited in Randi, 2004) showed that teachers are more attentive to their students' self-regulation process than their own. This importance is given to student-related factors rather than teacher self-regulation, which may suppress teachers` own process. Therefore, teacher self-regulation should be tackled and studied separately from teaching self-regulation to students.

From the perspective of SCT (Bandura, 1986), teachers are also capable of regulating their own teaching process through goal setting, choosing an appropriate strategy for instruction, reflect and evaluate their own teaching and motivate themselves for the next instruction. Based on this view, Capa-Aydin et al. (2009) defined teacher self-regulation as "teachers' own self-regulated strategies executed in their teaching environment" (p.346). They add that teacher self-regulation is an ongoing process based on metacognition which is defined as "the experiences and knowledge we have about our own cognitive processes" (Perfect & Schwartz, 2002). This stresses the importance of the cognitive aspect of teacher self-regulation which includes the ability to know about their own knowing and teaching which also makes them control their own strategies and motivate themselves (Capa-Aydin et al.,2009).

2.4. The Model of Teacher Self-Regulation

This study will have a closer look at teacher-self regulation from a frame of SCT. Teacher self-regulation can be proposed based on Zimmerman's (2000) cyclic self-regulation model. He proposed a 3-phased cyclic model consisting of forethought, performance, and self-reflection phases. As his model is based on social cognitive theory, those three phases are reciprocal to each other just like in three determinants in SCT.

2.4.1. The First Phase: Forethought

Zimmerman's (2000) cycle starts with the forethought phase, which is a preparation process for an action, consisting of task analysis and self-motivational beliefs of a person. This phase consists of two main parts: task analysis and self-motivational beliefs.

The core activity of task analysis is the goal setting process (Zimmerman, 2000), which is specific decisions planned and taken for a purpose (Locke & Latham, 2002) and resulting in strategic planning. To illustrate from students' perspective, getting an A from a course or to be able to spell all the words for a spelling test can be examples of goals set by students (Zimmerman, 2002). Likewise, in terms of teacher self-regulation, they decide their goals according to what they expect their students to reach (Capa-Aydin et al., 2009). They set their goals and objectives based on the school environment, availability of the materials and resources, students, and classroom characteristics. Just like the student goal "spelling all the words", a teacher may set this goal as "the students will be able to spell all the words at the end of the lesson". To reach this goal, the teacher would take into consideration of materials needed for a spelling activity, if the school environment is appropriate for this or how the spelling activity would be according to students' characteristics. This would lead the teacher to plan the lecture according to the teaching environment as well as the students' needs.

Capa-Aydin et al. (2009) stated that how teachers set their goal is a process affected by motivational factors which is the second part of the forethought phase: Self-motivation beliefs. One of the self-motivational beliefs is goal orientation. Parallel to Vroom's (1964) previously described view to human behavior regulation and motivation, goal orientation can be divided into two: mastery and performance goals (Ames, 1992). Ames and Archer (1988) define mastery goals as the ones focusing on one's personal development toward mastering a task and performance goals as the ones based on public standards or norms rather than personal. From this perspective, teachers with mastery goals can be thought of the ones engaging more in teaching for their own professional improvement with intrinsic

values, whereas teachers with performance goals set their objectives according to school development, administration standards, or public expectancies, in other words; external values. Teachers with performance goals are more likely to work for promotion and they are motivated through doing better than others (Capa-Aydin et al., 2009). Moreover, studies (Elliott & Dweck, 1988; Wigfield & Eccles, 1992) emphasize that the ones with mastery goals show more enthusiasm toward learning new and challenging teaching tasks and they spend more time and effort to increase their teaching quality. This is also closely related to the intrinsic value which is another self-motivational belief in the forethought phase. Wigfield and Eccles (1992) define intrinsic value as interest rooted in a personal interest in their performance. Similar to mastery goal orientation, when teachers have intrinsic interest, they have self-satisfaction in their profession and like more to work with students (Capa-Aydin et al., 2009).

Another self-motivational belief is self-efficacy (Zimmerman, 2000), which is defined by Bandura (1994) as people's beliefs in their capacity for an intended performance having an effect on their own lives. Deriving from this definition of self-efficacy, Tschannen-Moran et al. (1998) define teacher efficacy as teachers' beliefs in their own teaching practices toward the instructional goals. Besides, teachers with high self-efficacy are found to be better at managing the classroom, facilitate students to be more autonomous and persistent to failure by regulating and planning different approaches in their teaching (Capa-Aydin et al., 2009). Therefore, this leads teachers to continue with the strategic planning step where they decide the appropriate teaching method and instructional strategy. Strategic planning includes not only the teaching strategy but also deciding the appropriate measurement and assessment methods to achieve their objectives and goals (Capa-Aydin et al., 2009). Besides the planning and preparation of the lecturing, they also plan and arrange classrooms according to physical conditions by considering the student and school characteristics (Uzuntiryaki-Kondakci et al., 2017).

2.4.2. The Second Phase: Performance

After the goals are set and planning was made strategically, the forethought phase is followed by the performance phase where the actual process of the action takes place. Although Zimmerman (2000) considers the motivational beliefs in the forethought phase, they are also included in the whole cycle as they are crucial in leading the performance phase. This phase is also called the 'volitional phase' because the word volition is used as

an important part of the motivational aspect of self-regulation (Zimmerman & Schunk, 2012). The volitional orientation plays a starter role in the implementation of the strategies planned in the forethought phase. Zimmerman (2000) divided this phase into two main parts: self-control and self-observation where self-control refers to the action of bringing the specific approaches, strategies, or methods into an effective distribution.

Self-control includes metacognitive strategies such as imagery, volition, or self-instruction as well as motivational strategies like help-seeking, environmental structuring, or interest enhancement (Zimmerman, 2011). The self-control process includes regulation of effort by managing attention (Capa-Aydin et al., 2009). Therefore, teachers implement the teaching method they planned to reach their objectives in this step. Self-control leads them to change their instructional method if they realize the planned instructional strategy does not work in the class, which directs them to observe their process which is self-observation, the second component of the performance phase (Uzuntiryaki et al., 2017).

Zimmerman (2002) describes self-observation as 'self-recording personal events or self-experimentation to find out the cause of events' (p.68). Self-controlling, self-instruction, and self-observation are closely related to each other. In terms of teaching, Uzuntiryaki et al. (2017) illustrate this in a way when the teachers realize that there is no time for an intended activity (self-observation), they might change the activity into homework (self-controlling). In addition, emotional control is found to be closely related to both processes because it is essential in managing the effort and motivation spent in the performance phase in case of a distraction (Pintrich & Schunk, 2002). Hence, it can be inferred that teachers regulate their emotions when they face a problem in their teaching. To illustrate, this may include staying calm when a student misbehaves during the lecture. Therefore, in the present study, emotional control will also be included in this phase.

2.4.3. The Third Phase: Self-Reflection

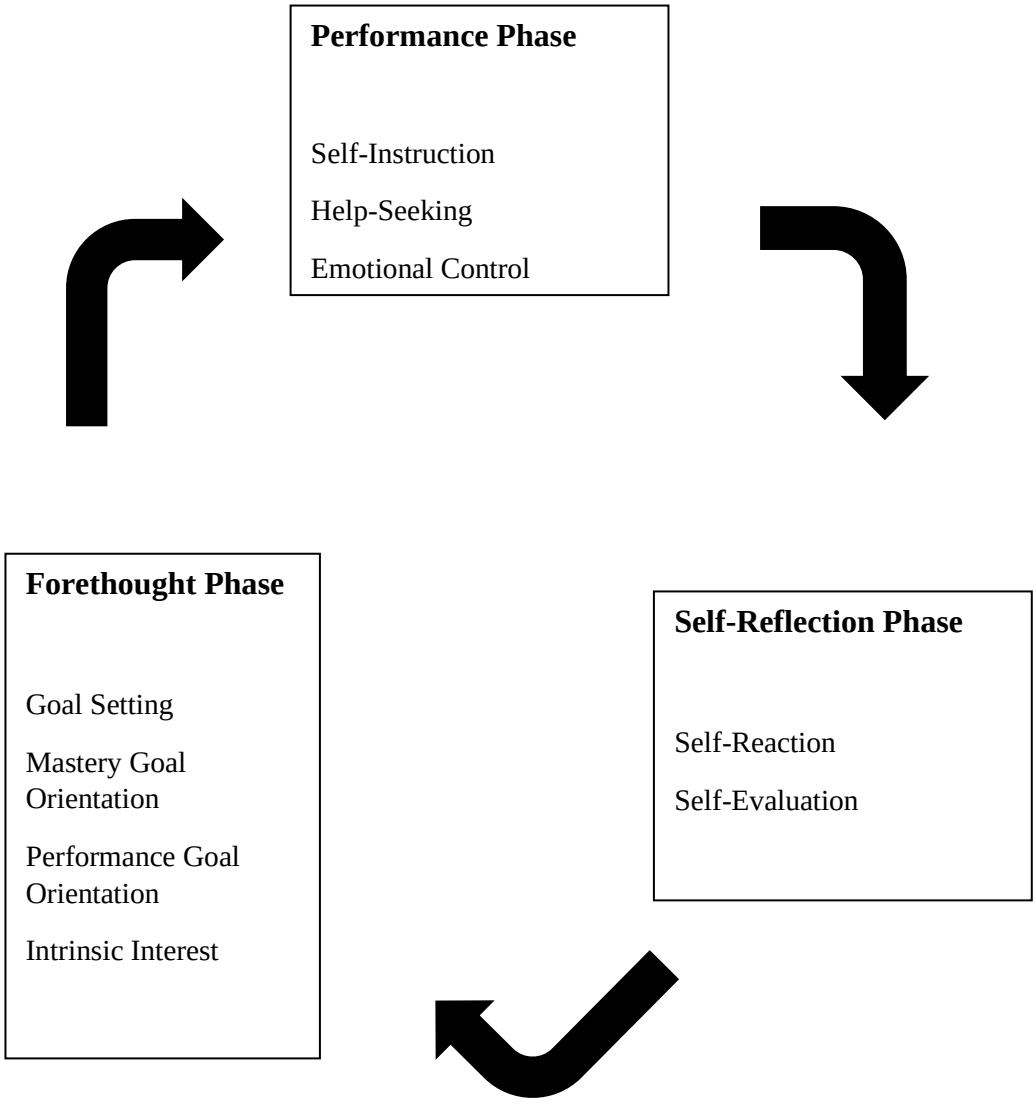
The last phase of the model is self-reflection which is directed by the performance phase. This phase includes the afterthoughts and self-measurement after the implementation of the behavior in the previous phase. Therefore, Zimmerman (2000) included two main categories in the final phase: self-judgment and self-reaction. Self-judgment includes self-evaluation where people compare their performance to a standard, someone else's performance, or to their previous performances (Zimmerman, 2002). Moreover, self-

judgment commonly comes along with causal attribution which is inferring a belief about the reason for the performance (Zimmerman, 2000). To illustrate, a lack of ability would be a causal attribution to a low mathematics score. Attribution to development processes that may be controlled such as effort keeps the motivation more than attribution to uncontrollable factors such as intelligence or ability (Zimmerman, 2002). This may lead to a change in the strategy for the next time because being able to control the process implies that different strategies may work. Teachers compare their teaching to their previous lectures, student performance, or how much they followed the lesson plan (Uzuntiryaki et al., 2017). As a result of these comparisons and judgments, they react cognitively, behaviorally, or emotionally (Capa-Aydin et al., 2009). Zimmerman (2002) divided self-reaction into two: adaptive and defensive. Adaptive reactions are shaped by attributing controllable factors and it refers to making changes to increase the effectiveness whereas defensive reactions are to protect oneself by avoiding or withdrawing the situation. For teachers, these reactions can be being sad about poor teaching or being appreciative of good performance. The modification of strategy or goals are driven by the self-reflection phase, which shows the cyclical process of self-regulation (Zimmerman, 2000). As Zimmerman and Bandura (1994) also affirmed that prior experiences influence motivational beliefs such as self-efficacy, self-reflections from previous performances will affect the forethought phase and the next actions. Hence, after the self-reflection, teachers go back to the forethought phase and design the new lecture accordingly and change the goals for it.

To summarize, Zimmerman`s (2000) cycle for self-regulation is adapted according to the literature for the present study and rearranged for the variables used in Figure 1 below.

Figure 1

Cyclic Process of Teacher Self-Regulation



As emphasized earlier, teaching is a complex process and teachers need to be competent enough in both their teaching and regulation. However, most of the studies about teacher self-regulation has studied in terms of teachers' interaction with students to improve student self-regulation or teachers' self-regulated learning as learners in their subject area (Kreber et al., 2005; Michalsky, 2012; Perry et al., 2002; Tillema & Kremer-Hayon, 2002). As Bembenutty et al. (2015) state, teachers who were trained to improve self-regulation skills are more effective, thus it is important to investigate teachers' own self-regulation strategies in their own teaching to be able to foster it. Recently, teacher self-

regulation has started to be included in the teacher training programs in European countries, but this inclusion has been made only for the pre-service teacher training programs (Niemi, 2002). Moreover, teacher training or professional development programs in the countries outside of Europe or the ones for in-service teachers are not known much in terms of teacher self-regulation. However, more importance should be given to teacher self-regulation development in their professional development. Malmberg (2006) proved that teachers teach in a way of how they learned rather than how they wished to, which shows that teacher professional development programs should be designed in a way that they learn how to implement it while they develop self-regulation skills. In addition, Arsal (2009) emphasizes the importance of those programs in teaching children to be self-regulative learners because teachers will recognize their own self-regulation pattern when they teach it to students. Furthermore, several studies investigated that teachers are more effective in coping with the problems in the process of teaching self-regulation skills to students if they have competencies themselves (Duffy, 1993; Hilden &Pressley, 2007; Randi, 2004). Furthermore, Randi and Corno (2000) found that teachers with an awareness of their own self-regulatory skills are better at teaching and providing self-regulation to their students. Therefore, teacher training programs should focus on teachers` self-regulatory competencies in a way of how we want them to teach students and it is crucial to investigate teacher self-regulation in their teaching regarding different aspects mentioned earlier.

By taking into consideration that Zimmerman's (2000) cyclic process of self-regulation is based on SCT and has a complex nature, it can be considered that there would be several differences in this process. For example, teachers' capabilities, teaching experiences, and beliefs affect their familiarization of self-regulation and their implementation of it in the classroom (Lau, 2013). Consequently, these effects may differ in their self-regulation, and the differences are expected to be important especially for designing teacher training programs. As self-regulation is an accumulated process of social and cognitive development, social, behavioral, and personal differences or changes would be expected to result in different self-regulation strategies. This implies that teachers should learn and practice self-regulation depending on those differences. The aforementioned differences can be culture and expertise level (Cleary & Zimmerman, 2001). Therefore, this study will investigate these two differences in teacher self-regulation based on several aspects of the reciprocal triadic cycle of self-regulation.

Expertise level can be considered as a differentiating factor in self-regulation. Although expertise differences in self-regulation have been studied mostly in terms of sports, it can be expected that it also differs in teachers. This is because, as mentioned earlier, self-regulation is a cyclic process where each cycle is expected to be improved by the previous cycle. Therefore, it can be said that teacher self-regulation can be improved by practicing just like in sports. However, it should also be taken into account that experienced teachers may be resistant to develop self-regulation patterns (Lau, 2013). Hence, it is a crucial point to know exactly where and how the expertise level differs in teacher self-regulation in order to train teachers in line with their self-regulation differences. For example, if teachers show low levels of self-regulation because of motivational beliefs, teacher education programs may focus on increasing motivation.

Another factor differing in teacher self-regulation can be the culture. Zimmerman (2011) states that culture is an important predictor of self-regulation. He emphasizes that this difference may be obvious for comparison of materialistic and subjective cultures. For example, student self-regulation changes across the cultural and ethnic differences because the way of valuing education by the parents and socioeconomic levels play an important role in it (McInerney, 2008). However, the studies regarding cultural differences in self-regulation have been mostly investigated in terms of student learning. There is very limited literature about differences in teacher self-regulation and it may lead to differences in teachers like it does for students.

Although these two factors are important in self-regulation, there is very little literature about culture and expertise differences specifically in teacher education. Moreover, these two factors may also be in interaction with each other. This would be inevitable as the model for teacher self-regulation for the present study is based on SCT where personal and environmental determinants have a reciprocal relationship. In the present study, expertise level can be thought of as a part of behavioral and personal determinants whereas culture is a part of personal and environmental determinants. This study will investigate these two factors in detail, starting with expertise differences, followed by cultural differences.

2.5. Expertise Differences in Teacher Self-Regulation

Self-regulation has been found to be a skill improved by the experience. For example, Bandura (1986) found that the more experienced students were significantly better in self-regulation for their own learning. Just like in students, experience may be an important factor influencing teacher self-regulation.

For example, as mentioned earlier, self-regulation was included in the COACTIV model (Baumert & Kunter, 2013) for teacher professional competence. This model includes not only cognitive but also individual characteristics which are described as "learnable and teachable" (Baumert & Kunter, 2013). This may indicate that teaching expertise can be thought of as learnable thus, can be practiced. This practice can be thought of as a differentiating factor also in teacher self-regulation in their professional competencies. Thus, experienced teachers may also show differences in self-regulation compared to novices. In the following section, it will be discussed more in detail how this would show differences in teachers.

2.5.1. Definitions and Differences in Teacher Self-Regulation for Pre-Service and In-Service Teachers

Although there is no clear cut between expertise levels for the teaching profession, different approaches can be used to defined expertise. For example, expert teachers are the ones who can integrate both pedagogical and subject knowledge in the classroom events and teaching and doing this by considering student and school characteristics (Berliner, 2001; Carter et al., 1988; Hattie, 2003). On the other hand, novices are the ones who do not hold practical teaching knowledge or classroom information and experience (Haider & Frensch, 1996). Another way to distinguish the expertise level for teachers can be pre-service and in-service teachers. Pre-service teachers are simply teacher candidates who are more likely in their teacher education or internship years whereas in-service teachers are the ones who already completed the necessary teacher education and teach as a profession. Due to availability and applicability in self-regulation studies, the present study will refer to in-service teachers as experts and pre-services as novices.

Expertise effect on teacher self-regulation has not been studied much and most of the studies focus on only pre-service teacher self-regulation not on in-service (Arsal, 2009; Niemi, 2002). However, not only for pre-service teachers but also for in-service teacher

education, self-regulation should be fostered because it is not a steady process that can be thought once and expected that teachers will have the necessary skills. Uzuntiryaki et al. (2017) state that all teachers experience and use self-regulation strategies to varying extents, thus it would not be proper to talk about "no self-regulation" but teachers' different applications of it. Moreover, the self-regulatory process has many layers, and they should not be developed only for the pre-service teachers. Consecutively, the self-regulation in teacher education should be continued after they become teachers because of this multi-layered continuum process affected by the student reactions, society, and personal changes (Niemi, 2002). In addition, because of the previously mentioned differences, teacher education and professional development programs cannot be designed the same way for in-service and pre-service teachers. Although expertise differences have not been studied much in terms of teacher self-regulation, studies done by only pre-service teachers and the ones done in different fields show that both general and specific differences may be expected between pre-service and in-service teachers. To illustrate this, practice in training programs also involves the practice of goal setting, engagement, motivational beliefs, and self-monitoring processes and found that expert players were better at self-regulatory skills than novices together with the specific differences in sub-processes like goal setting or strategic planning (Cleary & Zimmerman, 2001). On the contrary, although practice seems important to develop self-regulation skills, Moos and Ringdal (2012) found that pre-service teachers' self-regulation conceptions differ from in-service teachers in a way that the latter show relatively negative attitudes and lower confidence toward it. Another study also showed a surprising result where self-regulation has the highest efficiency among teachers during professional development (Tkacheva as cited in Shagivaleeva et al., 2015). This implies that pre-service teachers may have higher self-regulation skills.

2.6. The Model of Teacher Self-Regulation in Expertise Differences

To better understand these variations in teacher self-regulation in terms of expertise levels, it is important to have a closer look at the specific processes in the cycle (Figure 2). As Capa-Aydin (2009) included in their study, some sub-processes of this cycle would be revealing teacher self-regulation. These processes are goal setting, task interest, goal orientation in the forethought phase; self-instruction, help-seeking, and emotional control in the performance phase; and self-reaction in the self-reflection phase. Hence, in this

study, teacher self-regulation will be investigated in this frame of sub-dimensions and all the differences will be studied, specifically in those sub-processes.

2.6.1. Expertise Differences in the Forethought Phase

In the forethought phase, several differences are expected in terms of expertise differences, which are goal setting, goal orientation, and motivational beliefs affecting it. Firstly, pre-service, and in-service teachers may differ in goal setting because experience and practice are found to be related to goal setting processes (Cleary & Zimmerman, 2001). In this regard, although the practice effect is known to be a differentiating factor in self-regulation, the evidence for teachers is very limited. As self-regulation is studied for other fields like sports, research in other domains can be considered to have indications for teachers. For instance, in sports research, Cleary and Zimmerman (2001) studied differences in self-regulation for novice and expert athletes and found that novice athletes were more specific in setting goals since they practiced more. Therefore, in-service teachers may show the same pattern as athletes since in-service teachers can be thought of as the one who practices more. Furthermore, in-service teachers may set their goals more specific to student characteristics, teaching resources, and school environment.

Secondly, teachers with different expertise levels may show differences in goal orientation, which is the second dimension of the forethought phase, where instructional quality is strongly affected by it, because teachers who are oriented toward mastery goals are more effective in their instruction (Capa-Aydin et al., 2009). Rong (2004) found that the expertise level is positively related to mastery goal orientation. It can be inferred that in-service teachers would be more oriented toward mastery goals, thus have better instructional quality. Moreover, mastery goal and performance goal orientations are found to be negatively correlated with each other (Skaalvik & Skaalvik, 2013). Therefore, performance goal orientation would be more common for pre-service teachers rather than mastery goal orientation. As previously explained, goal orientation is a process affected by motivational beliefs.

Lastly, in the forethought phase, the expertise level can also differ in these motivational beliefs like intrinsic interest because the time and experience for the teaching profession may result in differences in motivation and interest (Sinclair et al., 2006). Although there is very limited literature specifically about teachers' interest, it can be

inferred that it would be similar to motivation in general since intrinsic motivation is closely related to intrinsic interest (Deci and Ryan, 1985). For example, Sinclair et al. (2006) stated that motivation to teach decreases over time of profession although it was expected that in-service teachers would have more intrinsic motivation because they gain more experience toward teaching. This decrease may have resulted in a loss of intrinsic interest in the teaching profession. Moreover, they also stated that intrinsic motivation would be lower for pre-service teachers depending on the reputation of the teaching profession in society and financial status. Although it is closely related to intrinsic motivation, intrinsic interest is still a questionable topic in terms of different expertise levels in teacher self-regulation.

2.6.2. Expertise Differences in the Performance Phase

In the performance phase, the expertise level would differ in terms of self-instruction, emotional control, and help-seeking. Firstly, self-instruction would be a differentiating factor in this phase because it was indicated that experience makes one observe oneself more and behave accordingly (Capa-Aydin et al., 2009). From a closer look, Capa-Aydin et al. (2009) described teacher self-instruction as a "process of monitoring one's own performance in teaching and making instructional changes when necessary" (p.349); thus, in-service teachers may be more competent in monitoring their teaching as they are more used to it.

Secondly, help-seeking would be also different for in-service and pre-service teachers although it has been mostly studied in terms of students but not teachers. Butler (2007) stated that help-seeking behavior is triggered by goal orientation because it gives an insight for the students on how likely they ask for help in case of difficulty. Therefore, the differences in goal orientation would reflect the differences in help-seeking behavior as well, we may expect teachers with different expertise levels to show different levels of help-seeking. More specifically for teachers, novice teachers are found more likely to lack feedback about their teaching and this may lead them to seek more help (Tellez, 1992). Furthermore, another study (Glidewell et al., 1983) done with mostly in-service teachers showed that help-seeking among them may be inhibited because of low-status implication depending on their social norms. Therefore, help-seeking behavior between pre-service teachers would be a behavior to be observed more likely.

Lastly, emotional control may show differences in the performance phase because monitoring and regulation of emotions are the skills to be gained by experience and being used to unexpected situations (Capa-Aydin et al., 2009; Uzuntiryaki et al., 2017). Even though teacher emotional control has not been studied in terms of expertise differences, but some inferences may be driven. For example, Pintrich and Schunk (2002) discussed that emotional control is an indicator of classroom management skills, and teachers who can control their emotions in case of an unexpected phenomenon in the classroom can remain calmer and keep their motivation. Consecutively, classroom management skills develop over time and experience, which implies that teachers with more experience would practice more how to control their emotions. Moreover, for pre-service teachers, it is important to experience the real classroom environment before the actual teaching so that they can learn to control their emotions while practicing classroom management. However, Stavroulia and Lanitis (2017) stated that today's teacher training programs do not let them practice enough, especially inside the classroom. In this manner, pre-service teachers would be expected to be able to control their emotions less because they would be less familiar with unexpected classroom issues.

2.6.3. Expertise Differences in the Self-Reflection Phase

In the last phase of teacher self-regulation, differences in both self-evaluation and self-reaction can be expected between pre-service and in-service teachers because the differences in evaluation processes of experts and novices were found to be different in other professional fields (Cleary et al., 2006). McLaughlin (1991) stresses the importance of self-evaluation and self-reflection in teacher education because teachers are supposed to make instant and efficient plans and decisions not only in their long-term and systematic teachings but also in daily teachings.

Firstly, self-evaluation may be different for pre-service and in-service teachers because, pre-service teachers are either unfamiliar or resistant to evaluate themselves (McLaughlin, 1991). However, in the qualitative study of McLaughlin (1991), it was also discussed that some pre-service teachers who were asked to make self-evaluations were more likely to evaluate themselves based on their own objectives and behaviors during teaching based on students' reactions rather than external teaching standards or comparing themselves to their colleagues. On the other hand, in the same study, it was reported that experienced teachers had difficulties in evaluating themselves, regardless of the evaluation

criteria, because of a possible threat to their pride. Although the literature gives a narrow and contradictory framework about expertise differences in teachers' self-evaluation, pre-service, and in-service teachers can be expected to differ, and this study will investigate how.

Secondly, as a consequence of the self-evaluation process, the self-reaction process can also be different between those teacher groups as it is the follow-up step for self-evaluation. Since the evidence in self-reaction is very limited for teachers with different expertise levels, studies in other fields can indicate differences. For instance, in the study of Cleary et al. (2006), novice basketball players were found to be making more adaptive self-reaction as they practice. This may imply that in-service teachers may have higher self-reaction levels because they practice more just like basketball players.

To sum up, in-service and pre-service teachers can be expected to show a difference in teacher self-regulation as well as its sub-dimensions. As expertise level was thought of as a personal determinant that also interacts with behavioral and environmental determinants, other factors like culture can also influence expertise differences. In the next section, it will be discussed if and how culture would be a differentiating factor in teacher self-regulation.

2.7. Cultural Differences in Teacher Self-Regulation

Expertise differences in self-regulation cannot be thought of separately from cultural differences because being an expert in teaching is based on educational (Berliner, 2001) and cultural (Sternberg, 2014) policies. Furthermore, as its roots come from SCT which stresses the role of the environment as well as individual differences and cognitive development, culture is expected to be a significant determinant in teachers' professional development. For example, in a society where the teaching profession is highly respected, teachers would be more motivated toward their profession and, thus more self-regulated. Moreover, McInerney (2008) stated that culture has a big impact on learning processes and outcomes as well, and this is especially important for teacher education programs. For instance, in Western cultures teachers are less worried about testing students than their actual understanding (McInerney, 2008), which would explain the fact that Western teacher professional development programs do not give much importance to how to assess but how to motivate students toward learning. This may have an influence on teachers'

goal setting and orientation, which are the first two sub-dimensions of the self-regulation cycle and these differences may trigger other sub-dimensions too.

Another reason why expertise differences should be thought in the culture frame is that self-regulation competencies develop through acquiring skills by social modeling, help, collaboration, evaluation, and feedback (McInerney & King, 2011). Despite its importance and effect on education and self-regulation, the role of culture has been mostly neglected in self-regulation studies although different standards and strategies for people from different cultures vary for self-regulation (Trommsdorff, 2009). As culture refers to common values, beliefs, and traditions of a society, self-regulation skills would also be shaped by those values. For example, Zimmerman and Schunk (2008) found that cultural group differences in American and Korean students were indicators of students' self-regulation differences such as motivational beliefs and strategic planning. These differences may be due to their environment such as the perception of learning in which Korean students described learning in terms of the responsibility of the learner whereas American students perceived it as more asking for help from others (Zimmerman & Schunk, 2008).

As shown in the example of differences between American and Korean students, these characteristics can be the reflection of a culture`s specific characteristics. To better understand these differences, it is crucial to classify and define different cultures and their specific characteristics which may be an indicator of self-regulation. In the next section, individualistic and collectivist cultures will be defined, and their specific characteristics will be explained.

2.8. Classification, Definitions and Differences between Individualistic and Collectivist Cultures

Culture can be classified in several ways such as individualistic/collectivistic, traditional/modern, or Western/Confucian. This study will investigate the differences by classifying the culture as individualistic/collectivistic because, in terms of self-regulation, this classification gives a better fit to the theoretical perspective (McInerney, 2008).

2.8.1. Individualistic Cultures

Individualistic cultures are described as the ones emphasizing autonomy, emotional independence, personal goals rather than group goals (Rhee et al., 1995). People from individualistic cultures mostly keep loose ties with other people and their behaviors are regulated by personal attitudes and characteristics (Rhee et al., 1995). Western countries such as Europe and the United States are examples of societies with individualistic cultures (Rhee et al.,1995). In individualistic cultures, people find it important to separate themselves from the group for their own development (Al-Zahrani and Kaplowitz, 1993). From an educational viewpoint, Hofstede (1986) found that in individualistic culture societies, education is considered as a way to improve the self and one self's abilities regardless of the education certificate because improving cognitive abilities and being competent are seen as more important than a diploma. He also added that the teachers from individualistic cultures are more open to new challenges since they see it as an opportunity to improve their competence. By a closer look at self-regulation in those cultures, self-regulation means actively looking for a new experience to gain knowledge, focusing on individual expertise, and taking the responsibility to the ones from individualistic culture (McInerney, 2008). Therefore, it can be expected that teachers from individualistic cultures would be more competent in self-regulation in terms of motivation, self-reflection, or mastery goal orientation whereas less for self-observation.

2.8.2. Collectivist Cultures

In contrast to individualistic cultures, collectivist culture is described as the one emphasizing collective identity where people are more integrated into groups (Rhee et al., 1995). People from collectivist cultures show more emotional dependence, family integrity, and feel responsible for the groups` goals rather than individual ones (Rhee et al.,1995). The same researchers exemplify that non-Western countries (Korean, Chinese, Middle Eastern, etc.) have collectivist societies. Therefore, in this study, western cultures (European, American, Canadian, etc.) will be considered as individualistic, whereas non-Western cultures (Asian, middle eastern, etc.) will be counted as collectivistic. In collectivistic cultures, people describe the `self` in terms of their relations to family, society, and their significance to others rather than being autonomous (Shweder & Bourne, 1984). As well as having tight ties to others, collectivist societies have loyalty to their ultimate goals (Hofstede, 1986). Moreover, McInerney (2008) remarked that they also

regulate their behaviors according to those goals and social norms. In education, students from these cultures see learning as memorizing, and teachers are the most influential factors in learning (Hofstede, 1986). Moreover, unlike the individualistic culture, holding a certificate is respected more than being actually competent in it (Hofstede, 1986). As the collectivist culture is more conformist (McInerney & King, 2011), teachers would be less competent in self-regulation or regulating by external reasons. Although there is very limited literature about cultural differences in teacher self-regulation, it can be expected that the teachers from these cultures would have more extrinsic motivational beliefs, and be oriented through performance goals.

Although individualistic and collectivist cultures look like the opposite of each other, McInerney and King (2011) found some similar results from different cultures. For example, Flemish and Chinese students did not show any significant difference in self-regulation scores, but Flemish students showed higher scores in strategic planning. On the other hand, Tillema and Kremer-Hayons`s (2002) study showed that Dutch and Israeli teachers showed significant differences in their self-regulatory strategies whereas they showed some similarities regarding more specific components of self-regulation, such as self-reflection. These differences may come from the self-regulation paradox across the cultures. McInerney (2008) contended that the whole concept of self-regulation is a Western-based theory and the research in self-regulation is based on Western values. He also criticized that the nature of self-regulation is rooted in a culture where it is not reflective of every culture. By its definition, students from individualistic cultures are expected to have higher levels of self-regulation but McInerney (2008) observed that students from collectivist cultures also show high self-regulatory skills. Since the literature on why this alteration appears in the self-regulation of people from different cultures is limited especially for teachers, it is very crucial to have a closer look at where they exactly differ. For example, Zimmerman and Schunk (2008) observed the same level of self-regulation in American and Korean students whereas they differed in sub-dimensions like goal orientation. These differences are important for the design of teacher education and professional development programs by considering the cultural differences, as well as applicability of Western-based theories in self-regulation, can also be revealed by comparing self-regulations in different cultures. Therefore, this study will continue with specific differences in teacher self-regulation regarding the sub-dimensions.

2.9. The Model of Teacher Self-Regulation in Cultural Differences

2.9.1. Cultural Differences in the Forethought Phase

In the forethought phase, teachers from different cultures would differ can be expected to differ in terms of goal setting. In the forenamed qualitative study of Tillema and Kremer-Hayon (2002), Israeli teachers perceived self-regulation as more based on planning and goal setting compared to Dutch teachers. Another study which was done by Purdie and Hattie (1996) with Japanese and Australian students showed similar results where Australian students reflected their self-regulatory skills more toward goal setting and planning than Japanese students. Although there are not many studies specifically on goal setting on teacher self-regulation regarding cultural differences, these studies imply that teachers from individualistic cultures may be more likely oriented toward goal setting than the ones from collectivist cultures.

Secondly, goal orientation may be a distinguishing factor in teacher self-regulation. Teachers from different cultures would be oriented toward mastery or performance goals. For instance, by the definition of a collectivist culture, teachers who are part of these societies should be oriented toward performance goals since it is more important for them to follow society needs and reach the group goals rather than their own goals (Rhee et al.,1995; Shweder & Bourne, 1984). Moreover, people who are part of societies where the individuals are free to express their own preferences and have loose ties with each other show a more mastery goal approach (Dekker & Fischer, 2008).

Lastly, teachers from different cultures can also differ in terms of intrinsic interest because of the aforementioned close relation of goal orientation with intrinsic interest. As people from individualistic cultures are expected to be more oriented toward mastery goal orientation, this would trigger them to be more intrinsically motivated. Moreover, people from individualistic cultures are found to be intrinsically motivated toward their work and personal development (Tamis-LeMonda et al., 2008). Therefore, we may expect that teachers from individualistic cultures to be more intrinsically interested in the teaching profession.

2.9.2. Cultural Differences in the Performance Phase

In the second phase of teacher self-regulation, self-instruction, help-seeking, and emotional control would vary between teachers from different cultures.

Firstly, self-instruction can be thought to be different in terms of culture. For example, Wojciszke (1997) investigated differences in self-instruction among individualistic and collectivistic values and confirmed that all components of self-instruction pointed out that individualistic values are related to higher-self instruction because people with these values are more independent and focus on their own process of development. Regardless of the limited literature on cultural differences in teacher self-instruction, Wojciszke's (1997) study would be an important indicator that teachers from individualistic cultures would possess more self-instructional skills than the ones from collectivists.

Secondly, help-seeking behavior can show differences between teachers from different cultures, but the literature shows varying shreds of evidence and descriptions. For example, the focus on "self" makes help-seeking behavior unpredictable in the context of cultural comparison. People from collectivist cultures may be expected to look for more help from each other because they have tight ties to the society, but Western people could be more open to communicating with others (Rothbaum & Trommsdorff, 2007) and help in case of need as they are less burdened by the social obligations and less criticized by the society (McInerney, 2008). Therefore, help-seeking behavior among teachers from different cultures needs to be investigated deeper.

Lastly, culture can be a distinguishing factor in terms of emotional control as showing emotions are perceived indicators of different social status in different societies (McInerney, 2008). Societal norms, perceptions, and expectations may also indicate the difference in teachers' emotional control. For example, Hofstede (1986) affirmed that the Japanese are allowed to express their emotions freely in kindergarten, but they are expected to be more disciplined and this makes them suppress their emotions as they grow up. Furthermore, Rhee et al. (1995) found that Euro-American students showed more emotional states compared to Koreans. They expressed this result can be due to the same reason that Korean students learned that they need to restrain their emotions. Like in students, teachers can also show the same pattern, teachers from collectivist cultures may show more control in their emotions. However, it still needs to be revealed how this difference works for teachers.

2.9.3. Cultural Differences in the Self-Reflection Phase

In the last phase of teacher self-regulation, self-reaction, and self-evaluation behaviors may also differ among the teachers from different cultures.

Firstly, culture may play a distinctive role in self-evaluation because of the social norms, standards, and perception of `self`. For example, Heine et al. (2001) contended that Japanese people were more likely to have weaker self-evaluation strategies compared to Americans because they scored much less in self-esteem too. They squared self-esteem with self-evaluation in terms of cultural differences because Japanese people are more worried about the views of themselves in the eyes of others, which is also parallel to the definition of collectivist cultures. However, although both Japanese and Chinese cultures are considered collectivist, Cai et al. (2007) found that Chinese students were more critical in their cognitive self-evaluations compared to Americans. The same researchers attribute this finding to their culture which encourages them to realize their positions (mostly weaknesses) for their own development for the society. Thus, a difference in self-evaluations of teachers from different cultures may be expected but it still needs to be unveiled because of lack of research in the field.

Secondly, as a result of the self-evaluation process, self-reaction behavior can also show differences among teachers from different cultures. For instance, cultural differences reflect the value of effort given, which can be adaptive or defensive in different cultures (McInerney & King, 2011). However, there is no explicit literature about how cultural difference affects self-reaction. By the definition of it, people from individualistic cultures may show more adaptive self-reactions because they expect to judge and react according to the goals that they set. However, people from collectivist cultures may show more defensive self-reactions as they can attribute the failure or success to the public`s external norms. Moreover, motivation can be another trigger for differences in self-reaction since motivation and self-reaction are closely related to each other (Schunk, 1998). People with intrinsic interest were found to be more likely to evaluate and react to themselves and their own performances (Schunk, 1998). Therefore, as teachers from individualistic cultures are expected to be more intrinsically interested in teaching, it may also be expected that they will have more adaptive self-reaction behaviors.

To sum up, the characteristics of individualistic and collectivist cultures can also have an impact on teacher self-regulation. Although culture seems like an environmental determinant, its explicit influence on behavioral and personal determinants can create an interaction between them. Thus, the possible interaction between the two factors explained in the present study will be discussed in the next section.

2.10. Interaction of Expertise Level Differences and Culture in Teacher Self-Regulation

Although this study`s main aim is to investigate culture and expertise differences in teacher self-regulation, there can be an interaction effect between them. As mentioned before, being an expert in teaching depends on the cultural values, teacher training programs, and policies depending on the country (Berliner, 2001; Sternberg, 2014). Moreover, culture is an important in teacher expertise in terms of teachers` competence and teacher-student interaction (McIntyre & Foulsham, 2018). Therefore, the differences may also interact with each other. For example, as Western teachers are trained more toward pedagogical knowledge, their expertise difference in self-regulatory processes may be different from the ones from collectivist cultures who were trained more toward the subject and content knowledge (König et al., 2011). Therefore, this study will also investigate the interaction effect between culture and expertise differences in teacher self-regulation.

2.11. The Present Study

In education, self-regulation has been studied in student related variables such as academic achievement or motivation (Pintrich et al.,1993; Yumusak et al., 2007; Zimmerman, 1989; Wigfield & Eccles, 1992). Not only for students but also for teachers, self-regulation plays an important role. However, the current literature does not focus much on teachers' self-regulation and empirical evidence in the field is very limited.

Furthermore, culture and expertise level differences have not been investigated in terms of teacher self-regulation although they might be distinguishing factors (e.g. Cleary & Zimmerman, 2001; McInerney, 2008). Therefore, this study aims to explore teacher self-regulation by investigating levels of teachers' self-regulation as well as comparing the groups of teachers from different cultures and expertise levels. Moreover, the possible interaction between these two factors will also be investigated.

2.11.1. Research Questions and Hypotheses

1. What level of teacher self-regulation do the teachers have?
2. How does the expertise level influence teacher self-regulation?
    a. Do pre-service and in-service teachers differ in terms of overall teacher self-regulation?

Expertise level differences showed variations in terms of self-regulation. The previous literature showed contradicting pieces of evidence regarding expertise level differences. For example, pre-service teachers showed the highest self-regulation levels during their training programs (Tkacheva as cited in Shagivaleeva et al., 2015). On the contrary, experts in other fields like sports were found to have higher self-regulation levels (Cleary & Zimmerman, 2001). Because of these contradicting findings, a difference in teacher self-regulation between pre-service and in-service teachers is expected but it cannot be hypothesized which direction the difference can be.

    b. Do pre-service and in-service teachers differ in terms of sub-dimensions (goal setting, mastery and performance goal orientation, self-instruction, intrinsic interest, emotional control, help-seeking, self-evaluation, and self-reaction) of teacher self-regulation?

In the forethought phase, teachers are expected to differ in terms of goal setting, goal orientation, and intrinsic interest. Firstly, because of motivation decrease by the time for in-service teachers may lead to the hypothesis that pre-service teachers would have higher levels of intrinsic interest as motivation is related to intrinsic interest (Deci and Ryan, 1985; Sinclair et al., 2006). However, this expectation is done through the relation between intrinsic interest and motivation, and there is very limited literature on specific expertise level effect on intrinsic interest. Therefore, a difference is expected between pre-service and in-service teachers in terms of intrinsic interest, but the direction of the difference cannot be hypothesized. Secondly, in this phase, the previous literature showed that experience is related to goal setting (Cleary & Zimmerman, 2001). Therefore, it is hypothesized that in-service teachers will have higher levels of goal setting. Lastly in the forethought phase, teachers are expected to differ in terms of different goal orientations: mastery and performance goal orientations. As expertise level is found to be related to mastery goal orientations (Rong, 2004; Skaalvik & Skaalvik, 2013), in-service teachers are

expected to be orientated toward mastery goals whereas pre-service teachers can be expected to be oriented toward performance goals.

When it comes to the performance phase, pre-service and in-service teachers are expected to have differences in help-seeking, emotional control, and self-instruction. In terms of help-seeking behavior, because of a lack of feedback for pre-service teachers may be asking for help (Glidewell et al., 1983). Moreover, in-service teachers' perception of low status about asking for help, it was expected that pre-service teachers will be seeking help more than in-service teachers (Tellez, 1992). Furthermore, in-service teachers are expected to have more control over their emotions as they are ore used to unexpected situations in the classroom and this would lead them to practice controlling their emotions (Capa-Aydin et al., 2009; Uzuntiryaki et al., 2017) and pre-service teachers are found that they cannot practice in real classrooms enough during their trainings (Stavroulia & Lanitis, 2017). In addition, based on the previous literature, in-service teachers are expected to have higher levels of self-instruction since their experiences through the years can lead them to monitor their own process (Capa-Aydin et al., 2009).

In the last phase of teacher self-regulation, pre-service and in-service teachers are expected to show differences in terms of both self-evaluation and self-reaction. In terms of self-evaluation, as the previous literature does not say much about expertise level differences and there are contradicting findings (McLaughlin,1991), pre-service and in-service teachers are expected to differ, but a direction cannot be hypothesized. Unlike the self-evaluation, a direction can be expected in self-reaction in terms of expertise level differences. Although the literature is very limited for teachers, expertise level is found to be related to self-reaction in the field of sports and the same pattern can be expected (Cleary et al., 2006). Therefore, we can hypothesize that in-service teachers will have higher levels of self-reaction.

To sum up, the following hypotheses are conducted for sub-dimensions of teacher self-regulation regarding expertise level differences:

- In-service teachers will have higher levels of goal setting.
- In-service teachers will be more oriented toward mastery goals.
- Pre-service teachers will be more oriented toward performance goals.
- In-service and pre-service teachers will show a difference in intrinsic interest.
- In-service teachers will have higher levels of self-instruction.

- Pre-service teachers will show more help-seeking behavior.
- In-service teachers will have more emotional control.
- In-service and pre-service teachers will show a difference in terms of self-evaluation.
- In-service teachers will have higher levels of self-reaction.

3. How does cultural differences influence teacher self-regulation?
    a. Do teachers from individualistic and collectivist cultures differ in terms of overall teacher self-regulation?

As culture was found to be a distinguishing factor for self-regulation (McInerney, 2008), teachers from individualistic and collectivist cultures are expected to show differences. However, the current literature gives controversial results about cultural differences. For example, McInerney (2008) found that students from collectivist cultures had higher levels of self-regulation whereas McInerney and King (2011) stated that by its definition and classification, people from individualistic cultures can show higher levels of self-regulation because the description and relation of "self" in collectivist cultures contradict the process of self-regulation (Hosftede, 1986, Shweder & Bourne, 1984). Moreover, these differences have been explored in terms of students in education but not much for teachers, thus a direction in hypothesis cannot be given. It can be only concluded that a difference between teachers from collectivist and individualistic cultures is expected.

    b. Do teachers from individualistic and collectivist cultures differ in terms of sub-dimensions (goal setting, mastery and performance goal orientation, self-instruction, intrinsic interest, emotional control, help-seeking, self-evaluation, and self-reaction) of teacher self-regulation?

In the forethought phase of teacher self-regulation, teachers from different cultures are expected to differ in terms of all sub-dimensions: goal setting, goal orientation, and intrinsic interest but in different directions. For example, in terms of goal setting, teachers from individualistic cultures are expected to show higher levels because it was previously found that students from individualistic cultures showed more self-regulatory skills toward goal setting (Purdie & Hattie, 1996) and the same pattern is expected for teachers. Next, teachers from individualistic cultures and collectivist cultures are expected to be oriented toward mastery or performance goals. As previous literature showed that people`s goals are emphasized by the society goals in collectivist cultures, teachers from collectivist

cultures are expected to have higher levels of performance goals whereas the emphasis on goal in individualistic cultures is in relation with person`s own objectives (Dekker & Fischer, 2008; Rhee et al.,1995; Shweder & Bourne, 1984). Therefore, teachers from individualistic cultures are expected to be oriented toward mastery goals. Lastly, for this phase of teacher self-regulation, as well as the empirical findings (Tamis-LeMonda et al., 2008), the previous literature showed that the mastery goal orientation is related to intrinsic interest and the previous hypothesis that teachers from individualistic cultures would be oriented toward mastery goals would make them more intrinsically interested (Rong, 2004; Skaalvik & Skaalvik, 2013).

In the performance phase of teacher self-regulation, teachers from different cultures may also show differences. Firstly, the previous literature showed varying results for help-seeking behavior among people from different cultures. On one hand, people from collectivist cultures showed closer ties to society, which may indicate an environment available for help (Rhee et al., 1995; Shweder & Bourne, 1984). On the other hand, people from these cultures may perceive seeking help as a weakness, and society opinion is important for those people and people from individualistic cultures were found to be more open for communication since they are less worried about the society opinion (McInerney,2008; Rothbaum & Trommsdorff, 2007). Therefore, a difference is expected in terms of help-seeking behavior between teachers from individualistic and collectivist cultures, but the direction cannot be hypothesized. Next, in the performance phase, teachers from collectivist cultures can be expected to control their emotions more since it was found that people from individualistic cultures are not welcomed by society to show their emotions because of the negative perception of showing emotions especially in adulthood (Hofstede, 1986; Rhee et al., 1995). As the last component of this phase, current literature showed that loose ties to society and independence of the “self” from its result in higher levels of self-instruction (Wojciszke, 1997). Therefore, teachers from individualistic cultures are expected to have higher levels of self-instruction.

In the last phase of self-regulation, the self-reflection phase, teachers from different cultures are expected to show differences. Firstly, the previous literature showed contradicting results of people from the same cultures in terms of self-evaluation (Cai et al., 2007). Moreover, due to the close relation of self-evaluation with self-esteem, fluctuations in self-evaluation levels can be observed (Heine et al., 2001). Therefore, a difference between teachers from individualistic and collectivist cultures is expected but

the direction cannot be hypothesized. Lastly, based on the previous literature, since people who are intrinsically interested show more self-reaction behavior (Schunk, 1998), teachers from individualistic cultures can be expected to have higher levels of self-reaction because they were expected to have higher levels of intrinsic interest.

To sum up, the following hypotheses are conducted for sub-dimensions of teacher self-regulation regarding cultural differences:

- Teachers from individualistic cultures will have higher levels of goal setting.
- Teachers from individualistic cultures will be more oriented toward mastery goals.
- Teachers from collectivist cultures will be more oriented toward performance goals.
- Teachers from individualistic cultures will show higher levels of intrinsic interest.
- Teachers from individualistic cultures will show higher levels of self-instruction.
- Teachers from collectivist and individualistic cultures will show a difference in help-seeking behavior.
- Teachers from collectivist cultures will control their emotions more.
- Teachers from collectivist and individualistic cultures will show different levels of self-evaluation.
- Teachers from individualistic cultures will show higher levels of self-reaction.

4. Is there an interaction effect between culture and expertise in teacher self-regulation?

Inferred from the previous literature, expertise level, and culture differences are expected to be different from each other as expertise is dependent on cultural settings and educational policies, teacher training programs in different countries. Moreover, since self-regulation is a social cognitive process, culture would be an important factor in teachers' professional development (Berliner, 2001; König et al., 2011; McIntyre & Foulsham, 2018; Sternberg, 2014).

In this study, some interactions between the factors are expected. The factors are expertise level and cultural differences. A specific interaction between the factors and teacher self-regulation cannot be hypothesized because its sub-dimensions are in a wide range, which may affect the direction of interaction differently. Moreover, a little

is known in the current literature about expertise and culture interaction in teacher self-regulation, which the present study aims to explore.

3. Method

3.1. Sample

The data were collected from 348 teachers in total. However, the ones who did not complete the questionnaire or did not fill the "country to teach" field were excluded. Moreover, the ones who have the Relative Speed Index (RSI) higher than 2.0 were also excluded as it implies careless responses (Leiner, 2013). After the exclusion, data from 279 teachers (age; M = 41.1 , SD =11.7, gender; 72.4 % female, 25.1% male, 1.8 % other, 0.7% preferred not to answer) in which 70 of them from Western countries (age; M = 33.8 , SD = 10.4, gender; 32.9% male, 62.9% female, 4.2% other), and 209 from non-Western countries (age; M = 44.1 , SD =11.0, gender; 22.0% male, 76.0 % female, 1.0 % other, 1.0 % preferred not to answer) were used. The teachers from Western and non-Western groups differed significantly in their age $t(177)= -5.74$, $p < .01$, as well as in their gender $X^2(2 , N = 277) = 6.96$, $p= .031$.

The non-Western group consists of teachers from Turkey (99.0%), Ukraine (0.5%), and South Korea (0.5%), whereas the Western group consists of teachers from Germany (55.7%), UK (14.3%), Hungary (11.4%), and others (18.6%) including the USA, France, Finland, and Sweden. As mentioned before, non-Western countries will be counted as collectivists whereas Western countries will be counted as individualistic cultures. However, Ukraine is counted as non-Western as the majority of the society has been more collectivist for decades although it started to shift toward individualism lately (Bojcun, 2001). Overall, regardless of the country, those 279 teachers consist of in-service (82.1%), pre-service (17.9%) (Table 1).

Table 1

Number and Percentage of Participants from Different Cultures and Expertise Levels

Expertise Level	Culture	
	Western	Non-Western
In-service	44 (15.8%)	185 (66.3%)
Pre-service	26 (9.3%)	24 (8.6%)

3.2. Research Instrument

Teacher Self-Regulation Scale (TSRS) by Capa-Aydin et al. (2009) was used for this study. The scale has two versions: Turkish and English which both were developed by the same authors. The questionnaire was distributed in both languages depending on the country. The scales were measured by a 6-point Likert scale (1= strongly disagree, 6= strongly agree). It has 40 items divided into nine dimensions as goal setting, intrinsic interest, performance goal orientation, mastery goal orientation, self-instruction, emotional control, self-evaluation, self-reaction, and help-seeking (Table 2). The reliability of the questionnaires and the scales were calculated separately for Turkish and English versions (Table 3).

Table 2

Scales, Number of Items in Each Scale, Sample Items

Scale	Number of Items	Sample Item
Goal Setting	6	"While I am preparing classes, I identify goals to be achieved by students."
Intrinsic Interest	5	"It makes me happy to see my students learn."
Mastery Goal Orientation	4	"It is important to be a successful teacher in order to satisfy myself professionally."
Performance Goal Orientation	5	"It is important to be a successful teacher in order to get promotion."
Self-Instruction	4	"During instruction, I adapt my instructional strategies based on students' needs."

Emotional Control	5	"When a problem occurs in class, I first try to calm down."
Self-Evaluation	4	"At the end of instruction, I try to determine whether I met my goals."
Self-Reaction	4	"Realizing that I am successful motivates me to study more."
Help-Seeking	3	"I ask for help from my colleagues when I encounter problems that I cannot solve."

Table 3

Reliability Measures, Means, and Standard Deviations for Turkish and English Versions of the Questionnaire

	Turkish		English	
Scale	Cronbach's Alpha	*M* (*SD*)	Cronbach's Alpha	*M* (*SD*)
Goal Setting	.88	5.40 (0.71)	.63	5.12 (0.58)
Intrinsic Interest	.76	5.48 (0.64)	.70	5.18 (0.66)
Mastery Goal Orientation	.59	5.38 (0.64)	.41	5.41 (0.47)
Performance Goal Orientation	.76	3.15 (1.05)	.71	3.55 (1.03)
Self-Instruction	.87	5.42 (0.77)	.64	5.20 (0.63)

Emotional Control	.85	5.04 (0.77)	.79	4.72 (0.78)
Self-Evaluation	.72	5.31 (0.71)	.65	4.95 (0.71)
Self-Reaction	.73	5.25 (0.81)	.70	4.62 (0.93)
Help Seeking	.79	5.02 (0.92)	.72	4.92 (0.86)
Teacher Self-Regulation	.88	5.01 (0.60)	.82	4.85 (0.43)

3.3. Research Design and Procedure

This study is designed to investigate group differences of the teachers from different cultures and expertise levels regarding their self-regulation and sub-dimensions of teacher self-regulation. Therefore, independent variables were expertise level and culture whereas dependent variables were teacher self-regulation (TSR), goal setting, help-seeking, self-instruction, self-evaluation, emotional control, performance goal orientation, mastery goal orientation, intrinsic interest, and self-reaction. The data were collected between June 2020- September 2020 from teachers and teacher candidates online and randomly. Two language versions of the same questionnaire were used. Both questionnaires (English and Turkish) were distributed online. They were prepared and saved in the 'SoSci Survey' software package. The link generated by this software was distributed online and participants were asked to join voluntarily. Turkish questionnaire was distributed to Turkish teachers and foreign teachers teaching in Turkey, via social media and e-mail. English questionnaire was distributed to teachers living in Europe, Ukraine, USA, and other western countries, via online platforms, e-mails as well as personal contacts. Including the demographics questions, in both questionnaires, all of the items were in the same order and page. After the completion of data collection, the data were exported from SoSci.

3.3.1. Data Protection Procedure

Both questionnaires were distributed according to the European data protection board's guidelines for 2020. Accordingly, participants were informed about the aim of the study, the duration of the data until deletion and their withdrawal rights. It was also declared that their data would be kept confidential and not to be shared with third parties. Moreover, they were also instructed on how to fill the questionnaire and what they were asked.

3.4. Data Analysis

SPSS 22nd version statistics program was used to analyze the data. To reveal group differences (culture and expertise) on TSR and its nine sub-dimensions and interaction effect, two-way Multivariate Analysis of Variance (MANOVA) was conducted. For the overall score of teacher self-regulation, the mean of items of all sub-dimensions were calculated and then compared between groups. For the sub-dimensions, the mean scores of items of specific sub-dimensions were calculated separately and then compared for group differences. Confidence interval for all the tests is set as 95 %.

3.4.1. Assumption Testing

By considering unequal number of participants in each group and relatively smaller sample size in some groups (i.e. pre-service), assumptions were tested to use two-way MANOVA. First of all, normality test by Kolmogorov- Smirnov test showed that the population do not follow a normal distribution for any of the variables; TSR, D (263) = 0.064, $p < .05$ goal setting, D (263) = 0.120, $p < .05$; performance goal orientation, D (263) = 0.072, $p < .05$; mastery goal orientation, D (263) = 0.120, $p < .05$; intrinsic interest, D (263) = 0.117, $p < .05$; help seeking, D (263) = 0.154, $p < .05$; self-evaluation, D (263) = 0.138, $p < .05$; self-instruction, D (263) = 0.176, $p < .05$; emotional control, D (263) = 0.126, $p < .05$; self-reaction, D (263) = 0.168, $p < .05$.

Secondly, correlations between the variables were checked. Except for performance goal orientation, all the variables were positively significantly correlated to each other (Table 4). Lastly, no outlier was detected.

As there are some violations of the assumptions and the group sizes are unequal, to ensure robustness, Pillai's Trace will be used for the multivariate analysis (Field, 2013).

Table 4

Descriptive Statistics and Correlations for TSR and Sub-Dimensions

Variable	1	2	3	4	5	6	7	8	9	10
1.Goal Setting	-									
2.Self Reaction	.58**	-								
3.Emotional Control	.70**	.46**	-							
4.Self-Instruction	.85**	.59**	.65**	-						
5.Self-Evaluation	.76**	.56**	.62**	.73**	-					
6.Help Seeking	.60**	.46**	.51**	.53**	.63**	-				
7.Intrinsic Interest	.26**	.14*	.17**	.29**	.29**	.38**	-			
8.Performance Goal Orientation	.008	.17**	-.04	.03	.11	.11	.26**	-		
9.Mastery Goal Orientation	.63**	.37**	.42**	.59**	.57**	.53**	.35**	.32**	-	
10. Teacher Self-Regulation	.86**	.68**	.73**	.83**	.82**	.72**	.57**	.44**	.76**	-

* $p < .05$. ** $p < .01$

4. Results

4.1. Teacher Self-Regulation Level

Overall teacher self-regulation level is analyzed by its descriptive measures shown in Table 5 and Figure 2.

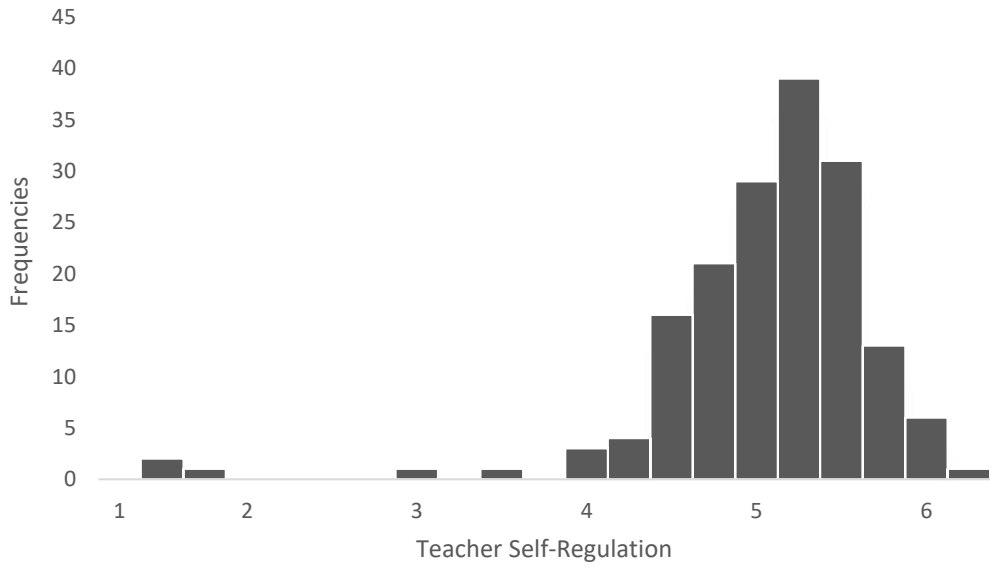
Table 5

Mean, Median, Standard Deviation, Minimum and Maximum Values of Overall Teacher Self-Regulation Scores

Descriptive Measure	Value
Mean	4.98
Median	5.05
Standard Deviation	0.56
Minimum	1.38
Maximum	6.00

Figure 2

Distribution of Teacher Self-Regulation by the Frequencies



4.2. Differences in Expertise Levels

Using Pillai's trace, there was a significant effect of expertise on TSR subdimensions, but no difference in TSR score, $V = 0.13$, F (9, 251) =4.06, $p < .01$. However, tests of between-subject effects on the outcome variables revealed that there are several non-significant expertise difference results for different outcome variables. First of all, there was no significant difference between the teachers in terms of the overall score of *Teacher Self-Regulation.*

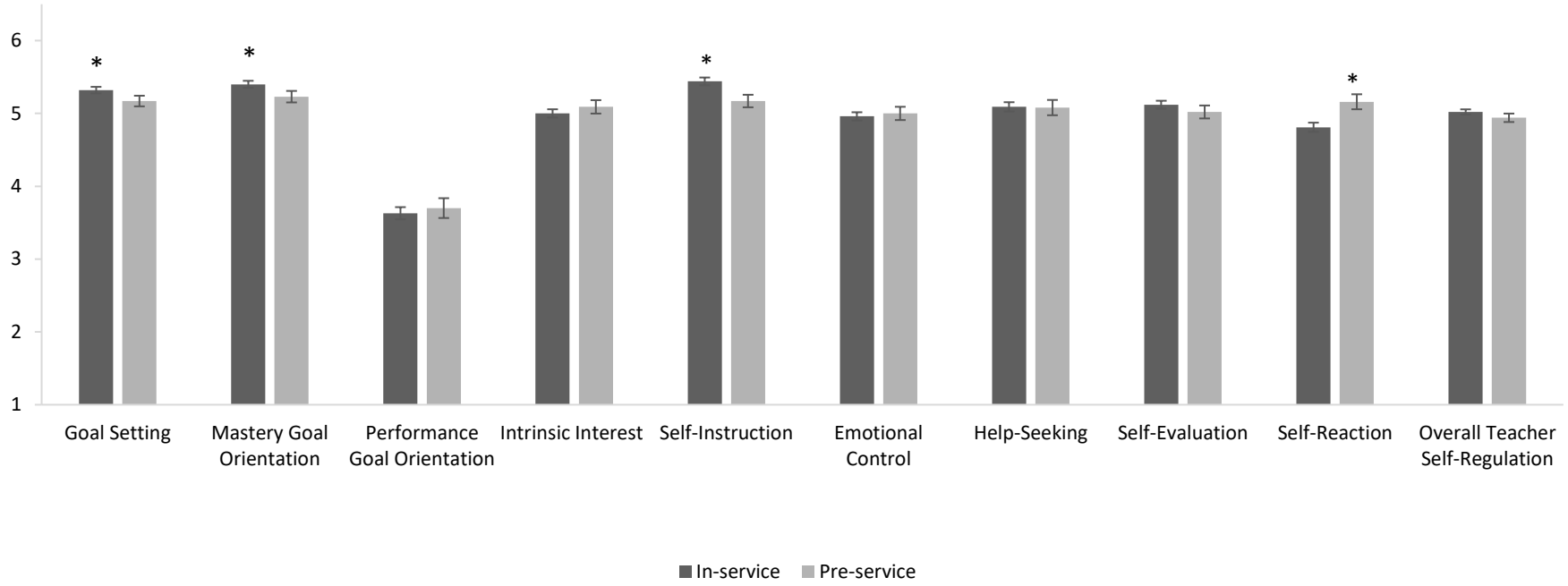
Secondly, for the forethought phase, univariate tests showed that in-service teachers showed significantly higher levels of *goal setting.* Furthermore, teachers significantly differed in their *mastery goal orientation* but not in *performance goal orientation*. However, there was no significant difference in terms of *intrinsic interest*.

In the performance phase, the only significant difference was observed in terms of *self-instruction.* On the contrary, it was found that neither *emotional control* nor *help-seeking* behavior differed between pre-service and in-service teachers.

In the self-reflection phase, teachers did not show a significant difference in *self-evaluation*, whereas a significant difference were found for *self-reaction*. All results are shown in Figure 3 and other statistical parameters are summarized in Table 6 below.

Figure 3

Results of Teacher Self-Regulation and Its Sub-Dimensions of Teachers with Different Expertise Levels



* $p < .05$

Note. Error bars represent standard error means (SEM).

Table 6

Means, Standard Deviations (SD), Standard Errors of the Means (SEM), Effect Sizes of Teacher Self-Regulation and Its Sub-Dimensions for Expertise Differences

Phase	Variable	*df*	*F*	*p*	Partial η^2	Expertise Level	*M(SD)*	*SEM*
Forethought	Goal Setting	1	3.054	.041	.012	In-service	5.32(0.50)	.045
						Pre-service	5.17(0.55)	.053
	Mastery Goal Orientation	1	3.427	.033	.013	In-service	5.40(0.54)	.048
						Pre-service	5.23(0.58)	.079
	Performance Goal Orientation	1	0.179	.672	.001	In-service	3.63(0.93)	.083
						Pre-service	3.70(1.00)	.136
	Intrinsic Interest	1	0.714	.399	.003	In-service	5.00(0.60)	.057
						Pre-service	5.09(0.84)	.092

	Self-Instruction	1	7.069	.004	.027	In-service	5.44(0.61)	.053
						Pre-service	5.17(0.57)	.086
Performance	Emotional Control	1	0.122	.727	.000	In-service	4.96(0.62)	.056
						Pre-service	5.00(0.80)	.091
	Help Seeking	1	0.014	.907	.000	In-service	5.09(0.73)	.064
						Pre-service	5.08(0.74)	.105
Self-Reflection	Self-Evaluation	1	0.898	.344	.003	In-service	5.12(0.61)	.054
						Pre-service	5.02(0.67)	.089
	Self-Reaction	1	8.356	.002	.031	In-service	4.81(0.78)	.063
						Pre-service	5.16(0.68)	.103
Overall	Teacher Self-Regulation	1	0.66	.797	.000	In-service	5.02(0.40)	.036
						Pre-service	4.94(0.44)	.058

4.3. Differences in Culture

Using Pillai's trace, there was a significant effect of culture on teacher self-regulation and its subdimensions, $V = 0.22$, $F\ (9,251) = 7.94$, $p < .01$. However, tests for between subject effects on the outcome variables also revealed two non-significant differences for two sub-dimensions: *performance goal orientation* and *help-seeking.* All other seven sub-dimensions were found to be significantly different for teachers from different cultures.

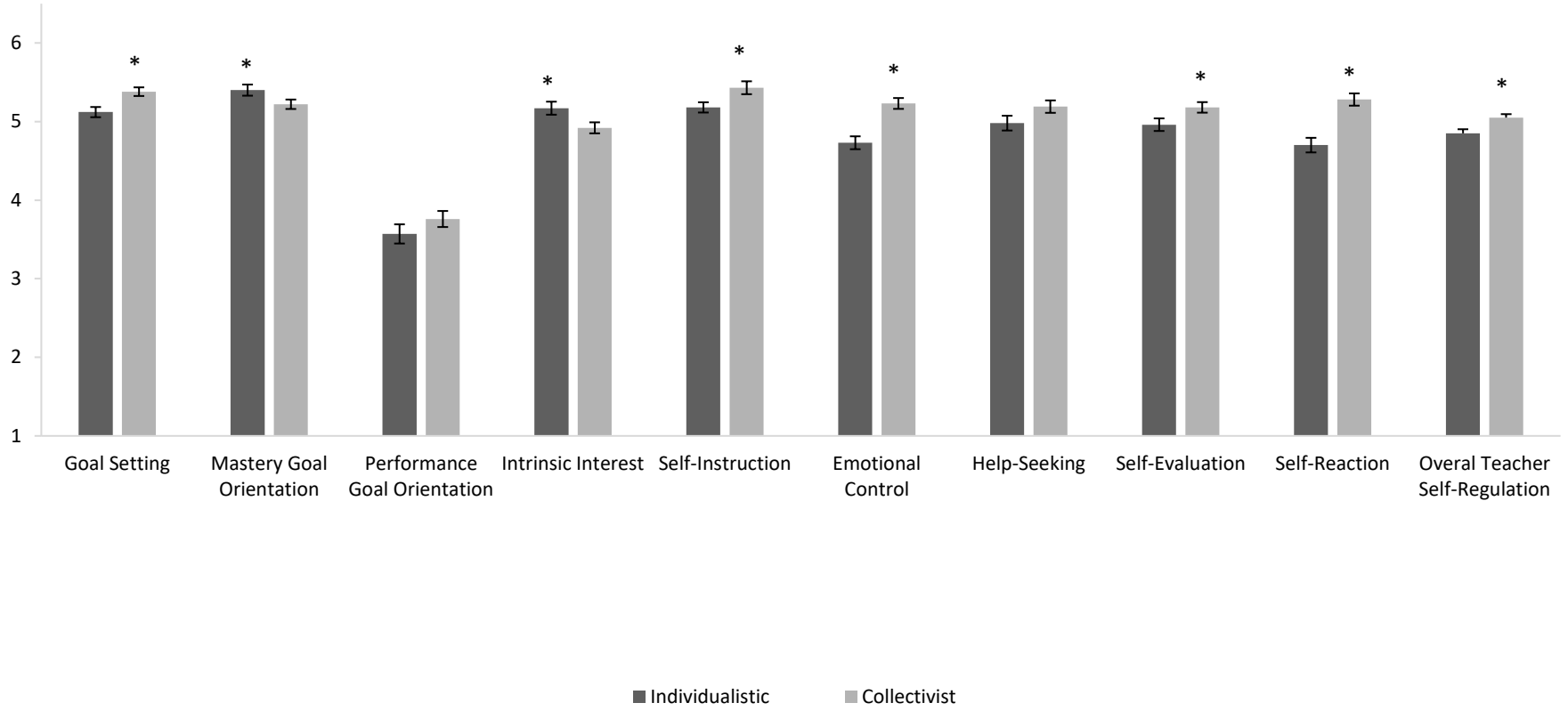
Firstly, in the forethought phase, teachers from collectivist cultures showed significantly higher levels of *goal setting* whereas teachers from individualistic showed significantly higher levels of *intrinsic interest* and *mastery goal orientation*. However, no significant difference was found in terms *of performance goal orientation*.

In the performance phase, teachers from collectivist cultures showed significantly higher levels of both *self-instruction* and *emotional control*. In addition, teachers form different cultures did not show a significant difference in their help-seeking behavior.

In the last phase, which is self-reflection, teachers from different cultures showed significant differences for both variables. Teachers from collectivist cultures showed significantly higher levels of *self-evaluation* and *self-reaction*. All results are illustrated in Figure 4 and other statistical parameters are summarized in Table 7 below.

Figure 4

Results of Teacher Self-Regulation and Its Sub-Dimensions of Teachers from Different Cultures



* $p < .05$

Note. Error bars represent standard error means (SEM).

Table 7

Means, Standard Deviations (SD), Standard Errors of the Means (SEM), Effect Sizes of Teacher Self-Regulation and Its Sub-Dimensions for Culture Differences

Phase	Variable	*df*	*F*	*p*	Partial η^2	Culture	*M(SD)*	*SEM*
Forethought	Goal Setting	1	9.467	.001	.035	Individualistic	5.12(0.56)	.065
						Collectivist	5.38(0.48)	.055
	Mastery Goal Orientation	1	3.697	.028	.014	Individualistic	5.40(0.47)	.071
						Collectivist	5.22(0.58)	.060
	Performance Goal Orientation	1	1.385	.120	.005	Individualistic	3.57(1.03)	.122
						Collectivist	3.76(0.91)	.102
	Intrinsic Interest	1	5.503	.010	.021	Individualistic	5.17(0.66)	.083
						Collectivist	4.92(0.63)	.070

	Self-Instruction	1	6.287	.007	.024	Individualistic	5.18(0.59)	.065
						Collectivist	5.43(0.60)	.082
	Emotional Control	1	21.99	.000	.078	Individualistic	4.73(0.78)	.082
						Collectivist	5.23(0.58)	.069
Performance								
	Help Seeking	1	2.86	.092	.011	Individualistic	4.98(0.84)	.094
						Collectivist	5.19(0.69)	.079

Self-Reflection	Self-Evaluation	1	4.299	.039	.016	Individualistic	4.96(0.70)	.080
						Collectivist	5.18(0.58)	.067
	Self-Reaction	1	22.617	.000	.080	Individualistic	4.70(0.92)	.093
						Collectivist	5.28(0.65)	.078
Overall	Teacher Self-Regulation	1	7.94	.004	.031	Individualistic	4.85(0.38)	.052
						Collectivist	5.05(0.41)	.044

4.4. Interaction Effect between Expertise Level and Culture

Pillai's trace showed that there is no interaction effect between expertise and culture differences in teacher self-regulation and its sub-dimensions, $V = .036$, $F(9,251) = 1.056$, $p = .396$.

4.5. Summary of the Results

To sum up, significant differences for both variables which are culture, and expertise level as well as the interaction effect are summarized in Table 8 below.

Table 8

Summary of Results in Teacher Self-Regulation and Its Sub-dimensions for Expertise Levels and Culture

		Expertise		Culture	
		Is there a significant difference?	Hypothesis Confirmed?	Is there a significant difference?	Hypothesis Confirmed?
Forethought	Goal Setting	Yes	Yes	Yes	No
	Mastery Goal Orientation	Yes	Yes	Yes	Yes
	Performance Goal Orientation	No	No	No	No

	Intrinsic Interest	No	No	Yes	Yes
	Self-Instruction	Yes	Yes	Yes	No
Performance	Help-seeking	No	No	No	No
	Emotional Control	No	No	Yes	Yes
Self-Reflection	Self-Evaluation	No	No	Yes	Yes
	Self-Reaction	Yes	No	Yes	No
Overall	Teacher Self-Regulation	No	No	Yes	Yes

5. Discussion

The present study aimed to investigate expertise and cultural differences in teacher self-regulation and its several sub-processes as well as the interaction effect between them. The results revealed differences to various extents as well as similarities in the teacher self-regulation process.

5.1. Level of Teacher Self-Regulation

As seen from Table 5, the mean and median of teacher self-regulation were found very close to each other as well as to maximum score. Together with the relatively low standard deviation, this may indicate that teachers are close in their self-regulation scores.

The very first research question was to investigate the overall level of teacher self-regulation. Regardless of culture or expertise level differences, teacher self-regulation was found to accumulate toward the higher end of the curve, which can also be seen from Figure 2, illustrating the frequency distribution of teacher self-regulation scores.

5.2. Expertise Level Do Not Differ in Teacher Self-Regulation but in Four Subdimensions

The present study hypothesized that in-service and pre-service teachers would differ in teacher self-regulation as well as its sub-dimensions. However, unexpectedly, pre-service teachers and in-service teachers did not differ systematically in their self-regulation but in some of the subdimensions which are goal setting, self-instruction, mastery goal orientation, self-reaction.

Unlike the assumption, the non-significant difference in the overall score of teacher self-regulation regarding expertise level differences can indicate that in-service teachers do not continue their professional development after they became teachers. There can be several reasons for this. In addition, their motivation toward the teaching profession may indicate a direct relationship to self-regulation scores.

Firstly, one of the reasons why in-service teachers would not have continued their professional development may be the fact that the teaching profession can be seen as a stable job (Liu & Onwuegbuzie, 2014). This would make teachers think that there is no big risk to lose their profession once they become teachers. Although this job stability can be a factor attracting people to choose the teaching profession, it may play an important role in in-service teacher motivation. Since the motivation toward the teaching profession is found to decrease over time, teachers may have lost their interest in their profession as well as

joining teacher professional development programs (TPD) (McInerney, 2006). The second reason can be the fact that self-regulation training is mostly included in pre-service teacher education rather than in-service. For instance, Niemi (2002) found that self-regulation development recently started to be included in teacher training programs in European countries. However, gaining self-regulatory skills for a profession would need some time to possess since it has a complex nature as well as interactions with different determinants. Therefore, although in-service teachers had higher levels of self-regulatory skills, pre-service teachers may have been improved their self-regulatory skills and strategies during their training and may have shown similar levels. So, if this practice effect did not work as presumed, they may have shown similar levels of self-regulation skills. The last reason can be the experienced teachers' perception of "nothing to learn more". In some societies, being experienced in a field is mostly considered that the experienced person already knows everything, and joining a professional development program is an indicator of weakness. For example, Lau (2013) found that experienced teachers are less likely to develop self-regulatory skills, and their resistance to developing in their profession is most likely to be due to low self-confidence and negative attitudes (Moos & Ringdal, 2012). Here, we may draw attention to the root of self-regulation to environmental determinants. If the society sees joining a professional development program as a weakness for an experienced teacher, in-service teachers may be too proud to learn new things or develop themselves from other sources like TPDs. Therefore, the practice effect mentioned earlier may have not been worked for in-service teachers expectedly.

Besides the motivation toward joining TPD programs, motivational beliefs may have played important roles in teacher self-regulation since motivational beliefs are central to the teacher self-regulation cycle (Figure 1). Although empirical evidence of motivation and self-regulation relation specifically for teachers is very limited, Schunk and Zimmerman (2012) found that motivation was a strong indicator of self-regulations for students. This implies that a change in motivation would affect self-regulation scores, too. Therefore, the pattern observed in students may also have shown in teachers. In-service teachers may have not shown a difference in their self-regulation since their motivation decreases over time and this reflects their self-regulations directly.

5.3. Expertise Level Differences in Sub-Dimensions

5.3.1. Expertise Level Differences in the Forethought Phase

In the forethought phase, it was hypothesized that pre-service and in-service teachers would differ in all sub-dimensions. However, results showed that some of the hypotheses were not confirmed.

Firstly, in the first phase, the present study hypothesized that in-service teachers would have higher levels of goal setting and it was confirmed. As expected, in-service teachers can be said that they are more used to detect student characteristics, have more information about the school and classroom resources. Since pre-service teachers do not enter the school environment as many as in-service teachers, they may have lacked the information and do not set their goals accordingly. The more they know the students and the teaching environment, the more specific and consistent goals they set. This result also indicates that in-service teachers have better performance (Locke & Latham, 1990), which implies that pre-service teachers need to practice or to be guided more in their goal setting.

Secondly, it was expected that in-service teachers would differ in their goal orientations. It was hypothesized that in-service teachers would be more oriented toward mastery goals, which was also confirmed. Previous literature found that expertise level is related to mastery goal orientations (Rong, 2004; Skaalvik& Skaalvik, 2013). However, these had not been investigated in terms of teacher expertise level differences before. The results of this study also confirmed the relationship between expertise level and mastery goal orientation in the teachers` case. By the definition of mastery goals, it can be concluded that in-service teachers set their goals for their own professional development rather than for a reward or an appreciation. This was also found in a close relationship with instructional quality as well as the amount of effort and time that teachers spend to increase the effectiveness of their teaching (Wigfield & Eccles, 1992). Therefore, it can be expected that in-service teachers would also differ in their teaching effectiveness and instructions due to their orientation toward mastery goals. Moreover, Gorozidis and Papaioannou (2015) stated that teachers' mastery goal orientation is affected by the teaching environmental factors. Therefore, in-service teachers may have reduced negative environmental effects since they were more used to teach and familiar with the teaching environment. This familiarity may have led them to focus on their own teaching and set goals accordingly.

Thirdly, continuing with performance goal orientation, pre-service teachers were hypothesized to be more oriented toward performance goals. However, this was not confirmed in this study. There was no significant difference between in- and pre-service teachers in terms of performance goal orientation. Unlike what Skaalvik and Skaalvik (20013) found, performance goal orientation was not the opposite of mastery goal orientation. The findings of the present study may indicate that they do not necessarily be contradictory. Although it is not certain, results showed that both groups of teachers had relatively lower levels of performance goal orientation. This may imply that public norms, administration expectancies, or other related external values may have not been important for teachers' goal orientation. For example, in-service teachers may have not been oriented toward performance goals because they already reached a point in their profession and experienced that external values do not motivate them anymore. On the other hand, pre-service teachers may not be familiar with the external values and those values would not be important for them until they actually teach. Another important point for this non-significant difference can be, once more, environmental factors. As performance goal orientation is closely related to external values, the teaching environment like the administration's attitude toward teachers, the dynamic between colleagues, or other teaching conditions may have affected teachers with different experiences differently. For example, a teacher working in a competitive environment where promotion or competition between teachers is important may have been motivated toward external values, in other words, performance goals. Consecutively, such an environment would have shaped both in-service and pre-service teachers` goal orientations in the same way, leading them to show similar orientations toward performance goals. These findings and relations indicate that future research on expertise level differences regarding goal orientations should also investigate environmental factors or control these factors as much as possible.

Lastly in the forethought phase, a non-directional assumption was made in terms of intrinsic interest. It was expected that pre-service and in-service teachers would show a significant difference in intrinsic interest. However, this hypothesis was not confirmed in this study. Although a difference was expected, a non-significant difference in intrinsic interest would not be surprising since overall teacher self-regulation was also found non-significant for expertise level differences. This would be in line with what was discussed earlier for the close relationship of motivation and self-regulation. As discussed for overall teacher self-regulation score, the result for intrinsic interest can also be due to motivational

beliefs. For example, in a recent study, Liu et al. (2019) found that teachers can transform their extrinsic motivation to intrinsic motivation over their professional development. However, they also remark that this transformation can be done via professional guidance and support. Therefore, if pre-service teachers get this professional help during their training programs, they may have developed an intrinsic interest to a similar level to an in-service teacher over time. This would also support the argument for the overall score of teacher self-regulation for expertise level differences. As discussed, if in-service teachers do not continue their professional development, lack of professional help may have decreased their intrinsic interest. Besides, intrinsic interest in teaching is affected by several factors like interest in subject thought, working conditions, or desire to serve the next generations (Tang et al., 2020). These factors may have affected teachers in different aspects but ended up with similarities. For example, although the motivation to teach decreases over time (Sinclair et al., 2006), an in-service teacher in a society where teaching has a valuable reputation may have kept intrinsic motivation for a long time. As intrinsic interest in teaching is affected by environmental and personal characteristics also, different factors may have triggered different aspects for pre-service and in-service teachers and resulted in similar scores at the end.

In the forethought phase, several differences were observed in terms of teacher expertise levels. Since the phases of the teacher self-regulation cycle affect each other, these differences may lead to some other ones in the performance phase.

5.3.2. Expertise Level Differences in the Performance Phase

In the performance phase of teacher self-regulation, teachers differed in terms of only self-instruction but did not show differences in other sub-dimensions.

Firstly, in-service teachers were expected to have higher levels of self-instruction and the present study confirmed this hypothesis. As explained earlier, self-instruction is a metacognitive process that is closely related to self-control and self-observation. In-service teachers may have shown a higher level of self-instruction since they have more knowledge and practice of different instructional methods. Moreover, an in-service teacher who worked with the same age group or maybe even the same group of students for a certain amount of time would be more familiar with the relevant teaching methods fitting to student profiles. This difference may show that pre-service teachers either lack knowledge of different teaching methods and instructional strategies or they do not

monitor themselves during their lectures to use that knowledge although they had the necessary knowledge in theory. Since this process is affected by motivational beliefs, more specifically self-efficacy beliefs, another inference of this difference can be that pre-service teachers may have not believed in their capacity to apply these methods, or in other words, they might have low levels of self-efficacy. Capa-Aydin et al. (2009) also stated that teachers with high self-efficacy manage the classroom better and their use of different teaching methods results in more autonomy in their students as well as more persistence of failure. Therefore, it would be expected that students of in-service teachers are more autonomous and do not easily give up in case of a failure.

Secondly, help-seeking behavior was expected to be observed in pre-service teachers more because pre-service teachers were found to lack feedback which would result in asking for help from peers or more expert teachers. Unexpectedly, the present study did not find a significant difference in help-seeking behavior between pre-service and in-service teachers. There can be two reasons why they did not differ. The first reason can be the effect of teacher training programs. Desimone (2009) states that effective TPDs should include active learning and collective participation. As in-service teachers have already completed their trainings, they may be used to ask for help and thus, feel more comfortable in it and showed similar levels as pre-service teachers. The second reason can be the influence of the teaching environment. Help-seeking behavior is closely related to social norms and teachers may receive help-seeking as a thread for their pride and it may imply a ‘bad teacher’ (Glidewell et al., 1983). In such a teaching environment, pre-service teachers may not ask for help since they did not want to seem like a bad teacher. Since they might realize their own inexperience, they can want to disguise it by not asking for some help.

As the last part of the performance phase, in-service teachers were hypothesized to have better control over their emotions than pre-service teachers. However, this was not confirmed since the results showed that there is no significant difference between teachers with different expertise levels in terms of emotional control. Once more, motivation and environmental factors may have affected this process. For example, emotional control is found to be closely related to motivation (Pintrich & Schunk, 2002). As no difference was found in terms of intrinsic interest in this study previously, emotional control can be a reflection of this similarity. Moreover, teachers mask their emotions depending on the school structure, administration, and the form of teacher-student relationships that the

school requires (Day & Quing, 2009). Pre-service teachers may also try to control their emotions since they are not used to teaching environment yet.

In the performance phase, except self-instruction, pre-service and in-service teachers did not show differences. As explained in some of the sub-dimensions like emotional control, one result may the reflection of other. Therefore, next section will continue discussing other sub-dimensions.

5.3.3. Expertise Level Differences in the Self-Reflection Phase

In the last phase of teacher self-regulation, a difference is found for self-reaction but not for self-evaluation.

Against the hypothesis, the self-evaluation process was not different for pre- and in-service teachers. The main reason for this specific process could be the fact that both in-service and pre-service teachers may have their self-evaluation processes based on different standards, norms, or goals. In the present study, the self-evaluation process was not defined in terms of those differences but in general. Therefore, regardless of what teachers evaluated themselves, it was counted as self-evaluation. However, these differences may have been crucial in self-evaluation since it can be done for both external standards and the goals teachers set for themselves. For example, it is known that novice teachers tend to evaluate themselves according to goals and objectives that they set instead of public or external standards (McLaughlin, 1991). This may lead pre-service teachers not to be fair in evaluating themselves and result in higher scores than real scores since the objectives they set were probably more reachable or realistic than external teaching standards. Moreover, in-service teachers may have also scored higher than how they evaluate themselves because they might have thought that self-evaluation questions could create a threat to their pride and experiences (McLaughlin, 1991). Therefore, even if there was, both pre-service and in-service teachers might have scored higher than how it was and ended up with similar scores.

Lastly, in the self-reflection phase, it was expected that in-service teachers would have higher levels of self-reaction. Surprisingly, this study found a difference but the right opposite of it. Pre-service teachers showed higher levels of self-reaction than in-service teachers. The main reason for this unexpected result may be the fact that the differences in types of self-reaction. The present study included both adaptive and defensive self-reactions. A more detailed measurement separating those types would have confirmed the

hypothesis because self-reaction is triggered by the goal-setting process (Zimmerman, 2000) and consecutively, goal setting was found to be related to mastery goal orientation (Capa-Aydin et al., 2009) and the present study found that both goal setting and mastery goal orientation were significantly higher for in-service teachers. Therefore, higher levels of mastery goal orientation may have led to higher levels of adaptive self-reactions because mastery goals are the ones set according to intrinsic values which may result in adaptive self-reaction which teachers attribute the result to controllable factors. Thus, future research should make a separation of the types of self-reaction so that it would give a better insight. Moreover, coming back to the roots of self-regulation, as SCT affirms (Bandura, 1969), environmental and reciprocally, personal determinants may have played role in the self-reaction process. Like the help-seeking process, in-service teachers may have thought that self-reaction is a threat to their pride, and they do not perform it. Furthermore, pre-service teachers may have been familiar with self-reaction because they are still being assessed for their teaching during their training programs. These environmental factors may have caused the difference in opposite to literature. As emphasized for other sub-dimensions, future research should consider the effect of environmental factors.

To sum up, although no difference was found in overall teacher self-regulation in terms of expertise differences, results showed that they differ in several sub-dimensions. This reflects the complex and broad nature of teacher self-regulation and implies that those differences should be considered by both policymakers and researchers.

5.4. Teachers from Collectivist Cultures Have Higher Levels of Self-Regulation but not in Motivational Beliefs

In terms of culture, the results revealed several significant differences between teachers from individualistic and collectivist societies. For the overall score of teacher self-regulation, a significant difference was expected. The present study found that teachers from collectivist cultures have higher levels of teacher self-regulation, which confirms the hypothesis.

This result is a very important example of the paradox of self-regulation. McInerney (2008) states that the self-regulation paradigm is rooted and derived from Western theories (i.e., SCT) which affirm that students with high self-regulatory skills are more motivated. Nevertheless, this study found just the opposite of this situation where teachers from collectivist cultures showed significantly higher levels of self-regulation

whereas they showed relatively lower levels of motivational beliefs like intrinsic interest. Although motivation is the central part of self-regulation, contradicting results may imply that motivational beliefs for self-regulation studies should be reconsidered. For example, extrinsic motivation may be a part of this cycle instead of intrinsic. Therefore, the present study agrees with McInerney`s (2008) statements about self-regulation theories and future research should be done in an environment where culture is controlled as much as possible or another model of self-regulation can be more useful for studies in cultural differences.

The findings also confirm that the self-regulation cycle of Zimmerman (2000) and teacher self-regulation cycle adapted from it are in line with SCT. The difference in culture confirmed that self-regulation is affected by the environmental determinants which are also in interaction with personal and behavioral determinants. Therefore, this study shows that self-regulation research cannot be done in a social vacuum and possible effects of environmental factors should be taken into consideration.

There can be several factors resulting in higher self-regulation in people from collectivist cultures. Firstly, religion and culture are found closely related, which have an impact on motivation and self-regulation (McInerney, 2008; Siu, 1996). For instance, in a very recent study, Chelladurai et al. (2020) found that religion fosters self-regulation. This may result from the meditating effect of religion, which may also possibly foster metacognition. In this study, religion may have played an important role in the difference of self-regulation, too. For example, most of the non-Western group consists of Turkish teachers whereas German teachers were preponderant in the Western group. In Turkey, 98.9% (Hackett et al., 2012) of the population is religious. On the other hand, in Germany, there is a considerable amount of non-religious people, and withdrawals from church increases in time (Pollack & Pickel, 2007). Therefore, the domination of religion in Turkey may be an important factor in the results of higher self-regulation in non-Western (or defined as collectivist for this study) than Western cultures. Future research should count specific characteristics of religions where participants belong to as well as cultural characteristics. Although it is a fragile topic, controlling religious factors to investigate cultural differences in self-regulation should be considered.

Secondly, higher self-regulation in teachers from collectivist cultures might indicate that strong relations with society and collective identity lead to better self-regulation because of fear of being judged by others or isolation from society. These

society expectations and the public's perception of formal education may have created an extrinsic interest in teachers from collectivist cultures. Although this study did not investigate extrinsic interest, lower levels of intrinsic interest in participants from collectivist cultures can show higher levels of extrinsic motivation. The reason for this is that extrinsic motivators can suppress intrinsic motivation (Fang et al., 2013). Therefore, extrinsic motivation may facilitate the self-regulation process which results in higher scores for the participants from collectivist cultures. If so, the self-regulation cycle should be adjusted by considering extrinsic motivation.

Although the fact that self-regulation is rooted in western theories which include taking own responsibility, it can still be inferred that people from individualistic cultures have better self-regulatory skills, the effect of migration to western countries may have mixed the cultural effect in different ways. For instance, by considering that the majority of the western sample consists of teachers teaching in Europe, immigration background would be a significant mediator of cultural differences. For example, especially in the last years, there has been a considerable amount of people migrating from Eastern countries to Europe (Marozzi, 2016). Therefore, teachers teaching in Europe may have been immigrant and reflect Eastern culture characteristics. Moreover, immigrant people may bring their cultural identity with themselves which can also affect the local Europeans or vice versa; thus, a pure individualistic culture effect may have not been shown expectedly but opposite because of this intertwined cultural interaction resulted from immigration. Therefore, future studies should also consider immigration background for culture effect in self-regulation.

To understand better where this difference comes from, the present study investigated the sub-dimensions of self-regulation in terms of cultural differences and found several significant differences.

5.5. Cultural Differences in Sub-Dimensions

5.5.1. Cultural Differences in the Forethought Phase

In the first phase of teacher-self regulation, it was expected that teachers from different cultures would differ in all sub-dimensions.

Firstly, it was expected that teachers from individualistic cultures would have higher levels of goal setting. However, the present study found the right opposite of this

hypothesis. Goal setting was described as setting a goal according to a specific objective, which is mostly based on students' needs and teaching environment. In the present study, goal setting was not defined as what kind of goal or which motivation triggers it, so, any reason would have given a higher level of goal setting. For example, teachers from collectivist cultures may have been stricter in their goal settings even if they are set by the administration. The fear of judgment may have played an important role here, which makes them set the goals even more seriously. Moreover, the administrative structures in different countries can be another reason for this difference. For instance, in Turkey, teachers must follow a centralized national curriculum regardless of the type of school or city. Each teacher must follow the main goals, but they can set specific objectives for the course and the national administration wants them to report those objectives each semester (YÖK, 2007). This requirement from the country might make them familiar with goal setting and thus, they practiced more. On the other hand, for example in Germany, the teaching objectives are decided by the states which may show differences in between (Wermke et al., 2019). Here, once more, the self-regulation cycle reflected the roots of SCT.

Secondly in the forethought phase, it was hypothesized that teachers from individualistic cultures would be more orientated toward mastery goals. The present study confirmed this hypothesis. Teachers from individualistic cultures set their goals for their own professional development rather than external influences like promotion. As illustrated before, mastery goal orientation is related to motivation and teaching effectiveness (Elliott & Dweck, 1988; Wigfield & Eccles, 1992). Thus, it can be also concluded that teachers from individualistic cultures might show more enthusiasm toward new teaching methods, they can be more open to learning new things which also increases the teaching effectiveness and instructional quality.

Thirdly, the present study expected that teachers from collectivist cultures would more be oriented toward performance goals. Unexpectedly, no significant difference was found between teachers from different cultures. Although the definition of collectivist culture brings to follow society’s common goals, teachers from these cultures in this study did not show the same pattern. The reason for this non-significant result can be due to the teaching environment in different countries. In this study, by taking into account that most of the teachers from collectivist cultures were Turkish, the environment factor may have affected even more because, in Turkey, the administration in the public schools does not

have the right for a promotion or a punishment for a lower performance of a teacher (Devlet Memurlari Kanunu 1965; Yilmaz & Aslan, 2013). Likewise, the salary levels do not matter in terms of performance but the years of working and education level (Devlet Memurlari Kanunu, 1965). Therefore, it can be assumed that social goals were eliminated for most of the participants and the difference was not visible.

Besides the specific reasons for the goal orientations, the unexpected difference in goal setting can also influence different goal orientations. By considering both non-significant differences in performance goal orientation and the opposite difference in goal setting, it can be concluded that there can be a different or mixed of goal orientations in the goal-setting process. For example, teachers from collectivist cultures might be oriented toward both mastery and performance goals since the teaching job requires both, whereas the ones from individualistic cultures can be more flexible in their goal setting but more oriented toward mastery goals.

Lastly in the forethought phase, culture was expected to differ in terms of intrinsic interest among teaches from different cultures. The present study expected that teachers from individualistic cultures would be more intrinsically interested. This hypothesis was confirmed. Since higher levels of intrinsic interest show more job-satisfaction and more interaction with students, it can be concluded that teachers from individualistic cultures are more willing to spend time with their students and more satisfied with their jobs (Capa-Aydin et al.,2009). Furthermore, Chong (2007) stated that fear of failure can be an important factor in self-regulation because they found that majority of Asian students work hard not to disappoint their families. However, the researcher also stated that fear of failure does not necessarily indicate lower levels of self-regulation, but it may reflect that this fear can create pressure on them and make them less intrinsically interested. Although teachers from collectivist cultures showed higher levels of self-regulation, it does not imply that they are intrinsically motivated. Moreover, teachers from collectivist cultures may have an extrinsic interest as they give more importance to external factors. As also Bandura (1989) stated that verbal persuasion from a trusted person or vicarious experiences from a modeled person is the source of self-efficacy, these external factors may have created extrinsic motivation and interest for those teachers. This assumption also affirms the opposite difference in mastery goal orientation.

To summarize, in the performance phase teachers from individualistic cultures are found to be more intrinsically interested and oriented toward mastery goals whereas teachers from collectivist cultures showed higher levels of goal setting. As the phases of the self-regulation circle are reciprocal to each other, these results led to alterations in the next phases.

5.5.2. Cultural Differences in the Performance Phase

In the second phase of teacher self-regulation, teachers from different cultures were expected to have differences in all sub-dimensions. The results showed that differences were observed in terms of self-instruction and emotional control but not in help-seeking.

Firstly, teachers from collectivist cultures showed higher levels of self-instruction which is the opposite of what was hypothesized. Although the definition of self-instruction emphasizes the "self" which is in the direction of individualistic cultures, the social expectations and pressure may have influenced it oppositely. Since the collectivist society's focus is the ties with others (Rhee et al.,1995), teachers from these societies may have practiced self-instruction but according to social norms. For example, a family member monitoring one's performance can result in monitoring oneself in time. Therefore, this difference in orientation of self-instruction should also be considered for future research.

Secondly, teachers from different cultures were expected to have a difference in their help-seeking behavior. However, this was not confirmed either. The present study found that there is no significant difference in help-seeking. Help-seeking behavior in cultural differences is a complex topic because both individualistic and collectivist societies can avoid it for different reasons. For example, as observed in the study of Cai et al. (2007) which investigated self-assessment differences in cultural context, possible judgment and critics from the society are important for people from collectivist cultures and this may cause that they do not communicate about their profession when they need help because it may be perceived as a weakness. On the other hand, help-seeking can be suppressed in individualistic cultures because of the loose ties with the society members, which may make them feel uncomfortable to ask for help (Hofstede, 1986; Wojciszke, 1997). However, the non-significant difference can be also due to teachers` different orientations toward help-seeking. For instance, in individualistic cultures, people may show help-seeking because they may see it as a tool to improve themselves whereas the ones from collectivist cultures may reflect it due to their better communication skills

improved by the tight ties with the society. Therefore, help-seeking behavior in terms of cultural differences should be investigated in more detail, which may show different orientations.

As the last component performance phase, teachers from collectivist cultures were expected to control their emotions more. The present study confirmed this hypothesis. This control over the emotions shows the social norms of collectivist cultures. As mentioned earlier, in collectivist societies, people are not as free as the ones in individualistic societies in expressing their emotions, especially by the increasing age. Although this control seems like an external necessity, Capa-Aydin et al. (2009) stated that controlling emotions during teaching can bring some positive consequences. For instance, teachers should be calm in case of an unexpected situation in the class and the present study found that teachers from collectivist cultures can manage unexpected situations better. Therefore, cultural differences could be an advantage for teachers from collectivist cultures in terms of emotional control.

In the performance phase, teachers from collectivist cultures were found to have higher levels in terms of self-instruction and emotional control whereas there was no difference in help-seeking behavior.

5.5.3. Cultural Differences in the Self-Reflection Phase

In the last phase of teacher self-regulation, both variables differed in terms of culture, which shows that the way that teachers self-reflect is different for the ones from different cultures.

Firstly, teachers from collectivist cultures were expected to have higher levels of self-evaluation. The results confirmed this hypothesis. Moreover, the present study also confirmed the findings of Cai et al. (2007) in terms of self-evaluation which found that teachers from collectivist cultures are more critical about their development but for society. They stated they evaluate themselves by focusing on their own weaknesses because they need to replace themselves in society. Self-evaluation can be done based on personal standards or previous experiences it can also be done according to social norms or a colleague's performance. This evaluation for teachers from collectivist cultures might have been more likely to be done according to external standards. Consequently, this evaluation also depends on the goal setting where teachers from collectivist cultures also showed higher levels. Setting goals by considering the teaching environment like school resources

or student profiles can trigger them to evaluate themselves more and this would also explain the aforementioned assumption of extrinsic motivation.

Consecutively, self-reactions levels may have found higher for teachers from collectivist cultures because of the higher levels of self-evaluation. As the teachers evaluated themselves more, they are more likely to react but the type of the self-reactions if adaptive or defensive are not known yet. However, the difference in mastery goal orientation can suggest that teachers from collectivist cultures have higher levels of defensive self-reactions rather than adaptive. This would also confirm the extrinsic motivation assumption as well as the results from intrinsic interest. Although teachers from individualistic cultures showed lower levels of self-reactions, they may have more adaptive self-reactions since they show more intrinsic interest and be more oriented toward mastery goals.

Overall, teachers from different cultures showed a significant number of differences not only for general self-regulation but also in the subdimensions. In the forethought and performance phases, they varied in the majority of sub-dimensions in different ways whereas teachers from collectivist cultures showed higher levels of both sub-dimensions in the self-reflection phase. These findings imply and suggest several improvements for teacher education which will be discussed below.

5.6. Culture and Expertise Level Do Not Interact

Opposite to what was hypothesized, expertise level, and culture did not interact in this study. It shows that pre-service and in-service teachers did not differ in terms of culture. The main reason for this result can be the globalization. Easy access to information may have resulted in a similar level of self-regulation of teachers from different countries. For instance, a pre-service teacher in a non-western country may be aware of the same self-regulation strategies in a western country from the Internet even if his/her country`s teacher education program does not give room to improve self-regulatory skills. Therefore, culture may have not created the environment for a possible interaction. Likewise, culture may have not interacted as much as before because of ease of relocation and communication with the other countries.

Nevertheless, the future research can investigate factors may affect this interaction from different aspects. A qualitative study may give a better insight to teacher expertise in different cultural environments.

Several implications and inferences can be done in these terms. The following sections, those implications not only for researchers but also for policymakers, teacher educators, and teachers themselves will be discussed.

5.7. Theoretical Implications

According to the findings of this study, some implications can be done for future research. This study explored cultural and expertise differences in teacher self-regulation. However, it is a very complex process affected by varying determinants; thus, other factors should be investigated for future research. For example, Matthews et al. (2009) found that gender differences are important in self-regulation. Moreover, other factors like physical appearance, ethnicity, or age, which affect determinants stated in SCT should be investigated further.

The literature so far has not investigated expertise level effect in teacher self-regulation, so this study inferred mostly expertise differences for sports players and in other fields. However, teaching is a different process than other fields, and being an expert requires different practices. For example, Hogan et al. (2003) stated that expertise in teaching requires not only cognitive development but also soft skills like organization and communication. However, those skills for teaching may need a different type of practice. In this manner, since self-regulation is a process based on SCT both social and cognitive skills are necessary to improve. Therefore, teachers may have improved different aspects over time but had similar results in the end and future research can expand teacher self-regulation according to other skills related to self-regulation.

Furthermore, the present study defined expertise level in a dichotomous way where in-service teachers were considered as experts and pre-service teachers were the novices. However, being an expert in teaching may have some more layers between those two and the year of teaching may be significant to investigate expertise differences. For example, number of years is found to be an important indicator of expertise in teaching (Leprohon & Patel, 1995). Hence, even a slightly different number of years worked as a teacher would have resulted in fluctuations. For instance, a newly graduated teacher, which was considered as an in-service (expert) teacher in this study, may show similar self-regulatory skills to a pre-service teacher. Likewise, an in-service teacher with experience of 20 years would not show the same results as one with two years of experience although they are

both in-service teachers. Thus, a more comprehensive separation of expertise level would give a better inside for future research.

Besides, this study assumed that self-regulatory skills are practiced over time, but it is not known how much or in what ways they practiced or if they practiced it at all. As discussed for the overall score of teacher self-regulation differences according to expertise level, in-service teachers may have not practiced it during their profession. Therefore, it would be useful to investigate this longitudinally and include practice effect in future research.

Moreover, self-regulatory skills are affected by personal and behavioral as well as environmental determinants (Bandura, 1986). Teaching is a subjective process where teachers reflect their own beliefs, values, and personal experiences in their practices (Van Poeck & Östman, 2019). Therefore, teacher self-regulation development cannot be thought of only in the frame of teaching but also in a wider range of factors where the teacher brings into the classroom. In addition, although three determinants of SCT are reciprocal to each, they do not necessarily affect each other in the same amount (Bandura, 1989). This may result in different paces of teacher self-regulation development. Teachers with different expertise levels may have developed self-regulatory skills differently because of factors such as social environment, family background, or personal characteristics. For example, a pre-service teacher may have improved self-regulation skills faster than expected due to a better social status and reciprocally stronger interaction to environmental determinants. This may also result in the development of self-regulatory skills even before their services. On the contrary, an in-service teacher may have developed self-regulatory skills more slowly because of the social environment factors like physical appearance or race (Lerner, 1982).

In the discussion of why in-service teachers may have not joined TPDs, nothing to learn` perception was discussed. Attitude toward this may be important to investigate since it can be an indicator of self-regulation skills as well as motivation.

Furthermore, cultural differences may have been due to specific characteristics of the societies in this study. Continuing with the fact that German teachers were the majority of the teachers from the individualistic culture in this study, cultural characteristics for German society may have played role in the difference. For example, in the study of Neber et al. (2008), it was found that American students showed differences in self-regulation

compared to German and Chinese students. Although both American and German cultures are classified as individualistic, German students were closer to Chinese students' results. This may imply that the assumption that German teachers are from individualistic cultures may have been reconsidered since they do not reflect the same patterns as other individualistic societies.

Moreover, as discussed earlier, religion and personal beliefs are strong factors affecting self-regulatory skills which future research in this area should contribute deeper. Although it is a fragile topic, religion and beliefs would reveal important results because religion has an impact on self-regulation. Although culture already includes religious necessities, practices, and lifestyles to a certain extent, people from the same culture can belong to different religions, be non-religious, or do not apply it in their lives. So, further study considering those differences would reveal wider differences.

5.8. Practical Implications

Besides the theoretical implications, some practical implications can be also drawn from this study. The results showed that pre-service teacher education should be designed in a way to improve their goal setting, mastery goal orientation, and self-instruction. Likewise, in-service teachers were observed to be needed for improvement in self-reaction. Both pre-service teacher education at universities or other institutions and TPD programs should consider these differences and include the improvements in designing for the future.

In addition to the expertise differences, cultural differences should also be taken into account in teacher education because the culture was observed to be a distinguishing factor in TSR. In collectivist cultures, teacher education should focus more on fostering intrinsic interest and mastery goal orientation. Moreover, regardless of the experience level, the results imply that teachers from individualistic cultures need more practices for emotional control, goal setting, self-instruction, self-evaluation, and self-reaction.

Furthermore, teachers themselves should have been informed and promoted more about their self-regulation not only inside the school but also outside of it. It was discussed that in-service teachers may have not been joining professional development programs. Policymakers and universities' teacher education programs may try to withdraw in-service teachers' attention to join those programs. This could be done by reinforcing the participation to TPDs or workshops and raising awareness that learning more is not a weakness, on the contrary, strength for their teaching.

Nevertheless, before this reinforcement and campaign, teacher education program curriculums and TPD designs should be revisited. In terms of teachers' professional lives and during their training programs, TPDs should still focus on the improvement of self-regulatory skills but in different ways for different expertise levels. Although overall TSR results were not different among teachers with different expertise levels, which may imply application of the same teacher training programs, some sub-dimensions showed significant differences. These differences clearly show that teachers with different expertise levels should not be treated in the same way. The present study found that in-service and pre-service teachers were different in four sub-dimensions: goal setting, mastery goal orientation, self-instruction, and self-reaction. For example, pre-service teachers were found to have lower levels of goal setting, self-instruction, and mastery goal orientation. Teacher education programs may focus on improving those skills for pre-service teachers. On the other hand, in-service teachers had lower scores in self-reaction which may imply TPD programs' focus on improving it, or workshops for self-reaction for the in-service teachers can be beneficial.

5.9. Limitations

This study revealed some insight into teacher self-regulation. However, it has several limitations that need to be taken into consideration for future research and practical uses.

Since the sample was chosen randomly, some limitations arouse from the different number of participants in groups as well as the age and gender differences. The first and the most important limitation of this study is that the number of participants in the 4 groups was unequal and mostly concentrated on the non-western in-service group. Besides the fact that it violated the assumptions of MANOVA analysis, it is also a very important factor that could have affected higher results in in-service teachers and teachers from collectivist cultures. Moreover, the whole sample did not show normal distribution, which also violates MANOVA assumptions. Although Pillai`s Trace was used to ensure robustness against the violations, the present study should be replicated with an equal number of groups which are normally distributed, for more reliable results.

Moreover, the participants of Western and non-Western groups showed significant differences in age and gender. Firstly, the mean age of non-Western teachers was found higher than the Western group. By considering the mean age difference was more than ten years, this may have affected the results of culture comparison. Since the number of years

can be related to teaching experience, the observed differences for cultural comparison can be due to age differences rather than cultural differences. For example, teachers from collectivist cultures were found to have higher levels of self-instruction but this difference may be due to experience difference. Since the age of teachers from collectivist cultures were higher, the same pattern that in-service teachers have higher levels of self-instruction, would be observed.

Secondly, gender differences may have also affected the results. The non-Western group was dominated by female participants whereas the Western group was mostly male participants. Since the previous literature found that gender and gender identity are related to self-regulation as well as sub-dimensions of it (Zimmerman & Schunk, 2008), group differences can be due to gender differences, too. For example, it was found that female students focused more on their strategies rather than abilities (Zimmerman & Schunk, 2008). This may lead females to have higher levels of goal setting or self-evaluation whereas males may have higher levels of motivational beliefs. In the present study, some unexpected group differences in culture may be due to gender differences. For instance, self-instruction was found to be higher in teachers from collectivist cultures which is opposite to what was expected. Since the participants from collectivist cultures were mostly female and females are found to focus more on their strategies, higher levels of self-instruction may be due to gender differences. Therefore, the present study can be replicated with a different sample where participants` gender does not differ.

In addition, culture classification was done for Western and non-Western countries, but the majority of Western teachers were German whereas the non-Western group mostly consisted of Turkish teachers. Thus, this study may have reflected country-specific differences rather than the whole collectivist and individualistic cultures. Therefore, it is not certain that the differences resulted from cultural differences. Future research should include more variety of countries.

Another important limitation for culture was immigration background. This may have affected especially Western culture results because participants were mostly from European countries (especially Germany) where migration rates are higher (Coleman, 2008). As mentioned before, immigrant teachers may have not reflected the same characteristics of individualistic cultures or vice versa. In this study, it was asked which country teachers will/do teach not their background. This may have created a difference

since an immigrant teacher may show collectivist cultural characteristics but counted as individualistic in this study. Moreover, even the local teachers do not necessarily show the same pattern as their society where they live. Therefore, their beliefs and standpoints of those culture-specific characteristics can be investigated qualitatively and grouped accordingly for future research.

For both expertise level and cultural differences, performance goal orientation was not significant. The most probable reason for this can be the questionable correlations of this scale. As seen from Table 4, performance goal orientation was correlated only with intrinsic interest and self-reaction. Unlike the correlation findings from Capa-Aydin et al. (2009), this study observed that performance goal orientation should be revised for teacher self-regulation.

Moreover, some sub-dimensions were strongly correlated with each other. For example, self-instruction and goal setting were strongly correlated. These relations make the teacher self-regulation scale questionable for this study since it may imply that highly correlated scales may be measuring the same thing (Field, 2013). This may have also reflected in the results of the present study. For instance, high levels of self-evaluation may be related to self-instruction results in cultural differences. Furthermore, reliability measures showed that Cronbach`s alpha of the overall scale of teacher self-regulation was relatively high. This may also show that the separation of sub-scales should be reconsidered. Nevertheless, these relations can be useful to investigate correlations rather than group differences. A mixed study including qualitative data as well may be helpful to explore findings deeper.

Furthermore, although the hypotheses were confirmed, mastery goal orientation scale Cronbach's alpha for both versions was low. This may have decreased the reliability of this scale. Comparatively, the English version`s alpha was even smaller than the Turkish version. This may have resulted from the unequal group sizes. As the number of Turkish participants were more than the ones from the English version, alpha values of the Turkish version may be more reliable. On the other hand, alpha values for the other scales were reasonable. Therefore, results for mastery goal orientation should be replicated with a different sample where reliability would be higher for mastery goal orientation.

Regarding the teacher self-regulation model, Capa-Aydin et al. (2009) adapted Zimmerman`s cycle and excluded some of the sub-dimensions in their model. Since they

did not give a clear justification of exclusion, the teacher self-regulation cycle can be investigated with other sub-dimensions. The findings of the present study also showed that the model may be rethought.

Furthermore, effect sizes for several sub-dimensions were low. Except for emotional control and goal setting in culture differences (Table 7) and self-reaction in expertise differences (Table 6), which are moderate, other effect sizes were found small (D`amico et al., 2001). Since effect size is dependent on the number of dependent variables, small effects found in the present study can be expected because the present study included ten dependent variables. Nevertheless, the study should be replicated with a larger sample and as suggested by D`amico (2001) et al., effect sizes can be converted into expected mean differences for a more appropriate picture.

By considering all these limitations and the fact that self-regulation theories are Western-based, where this study showed some contradicting results, it would open a new frame for self-regulation research. Although this study was redesigned what Zimmerman (2000) purely affirmed, new adjustments may be required for the processes. Purdie et al. (1996) studied self-regulated learning strategies across cultures and found that several variables are affecting them. Especially for the culture research, factors like organization skills, environmental restructuring, or active learning should be investigated deeper and the self-regulation cycle should be reviewed accordingly. New adjustments in motivational beliefs would be beneficial because of the demonstrated inconsistent results in intrinsic interest, goal orientation, and self-reflection. These revisions may be necessary not only for teacher self-regulation but also for students or self-regulation research in other fields like management or sports.

5.10. Conclusion

To conclude, this study investigated and gave an insight into teacher self-regulation and its sub-dimensions in terms of culture and expertise differences. The present study found that the overall level of teacher self-regulation was on the right-hand side of the distribution (Figure 2). Moreover, teachers differed in terms of culture for overall teacher self-regulation but in expertise level. Nonetheless, they differed in several sub-dimensions of both culture and expertise differences.

It can be concluded that in-service teachers have higher levels of goal setting, mastery goal orientation, and self-instruction whereas lower levels of self-reaction.

Moreover, expertise level is not a distinguishing factor for overall teacher self-regulation and for some sub-dimensions like performance goal orientation or emotional control.

The fact that expertise level did not differ in overall teacher self-regulation score but in some sub-dimensions shows that self-regulation is a complex process that needs to be investigated deeper.

In terms of cultural differences, it can be concluded that teachers from individualistic cultures have higher levels of mastery goal orientation and intrinsic interest whereas the ones from collectivist cultures showed higher levels of goal setting, self-instruction, emotional control, and self-evaluation as well as overall teacher self-regulation score. Although the overall score was higher for teachers from collectivist cultures, they showed lower levels of some sub-dimensions. This also points out that teacher self-regulation should be studied deeply.

Nevertheless, teacher self-regulation is still a topic where literature is very limited and further research is needed. By considering the limitations and implications of this study, further research can fill this gap.

6. References

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7. Appendix

7.1. Appendix A

The Teacher Self-Regulation Questionnaire- English Version

0% completed

Dear colleague,

This questionnaire aims to measure teachers' attitude toward teaching as a profession. Therefore, your opinions are required for the study.

In the first part, you will be asked to fill personal information. In the other parts, there will be several statements about teaching. Please mark one option that you think is the closest to your feelings and opinions.

Your personal information will be kept strictly confidential. The purpose of the study depends on the sincerity of your answers and answering the questions completely.

Participation to this study is voluntary and you can send your consent withdraw requests to "azra.ates@tum.de" and your data will be deleted without any negative consequences. If you would like to stop the questionnaire before the completion, the previous data will not be processed. Your data will not be transferred to third parties and deleted after one year.

Thank you in advance for taking the time to participate.

Next

Kardelen Azra Ates, Technical University of Munich (TUM) – 2020

Please type your age.

Please select your gender.

- ○ Female
- ○ Male
- ○ Other

Are you currently a teacher?

- ○ Yes
- ○ No
- ○ I am going to be a teacher.
- ○ Other

Which country do you / will you teach?

Which subject(s) do you / will you teach?

	strongly disagree	disagree	slightly disagree	slightly agree	agree	strongly agree
While preparing classes, I identify goals to be achieved by students	○	○	○	○	○	○
I direct myself to use time effectively.	○	○	○	○	○	○
I appreciate myself when everything goes according to the plan.	○	○	○	○	○	○
Realizing that I am successful encourages me to study more.	○	○	○	○	○	○
I stay calm when faced with a problem.	○	○	○	○	○	○
While preparing classes, I decide on the instructional strategy appropriate for the topic.	○	○	○	○	○	○
When a problem occurs in class, I first try to calm down	○	○	○	○	○	○
If the strategies I used do not work, I utilize alternative strategies.	○	○	○	○	○	○
I get upset when I am negatively evaluated in my profession	○	○	○	○	○	○
While preparing classes, I take student characteristics (e.g. Prior knowledge, developmental level) into consideration.	○	○	○	○	○	○
I learn from the mistakes I made in class.	○	○	○	○	○	○
When I feel bad in a situation, I try to think positive.	○	○	○	○	○	○
I ask for help from my colleagues when I encounter problems that I cannot solve.	○	○	○	○	○	○
I pay attention to students' facial expressions during instruction.	○	○	○	○	○	○
At the end of instruction, I try to determine whether I have met my goals or not.	○	○	○	○	○	○
While preparing classes, I get help from my colleagues when needed.	○	○	○	○	○	○
Realizing that I am not successful worries me.	○	○	○	○	○	○
Before instruction, I decide on how to assess my students	○	○	○	○	○	○
During instruction, I adapt my instructional strategies based on students' needs.	○	○	○	○	○	○
I discuss my positive and negative experiences with my colleagues after instruction.	○	○	○	○	○	○
While preparing classes, I take available resources into consideration.	○	○	○	○	○	○
I use student feedback to improve my instruction.	○	○	○	○	○	○
While I am preparing classes, I take students' needs into account.	○	○	○	○	○	○
When I encounter a problem, I take a deep breath.	○	○	○	○	○	○
While evaluating myself at the end of instruction, I compare my performance against previous years.	○	○	○	○	○	○
I do not panic when a problem occurs during instruction.	○	○	○	○	○	○

	strongly disagree	disagree	slightly disagree	slightly agree	agree	strongly agree
I am proud of working as a teacher.	○	○	○	○	○	○
I have been interested in teaching profession since my childhood.	○	○	○	○	○	○
I attend classes enthusiastically.	○	○	○	○	○	○
I like teaching profession.	○	○	○	○	○	○
It makes me happy to see my students learn.	○	○	○	○	○	○

Why is it important to be a successful teacher?

	strongly disagree	disagree	slightly disagree	slightly agree	agree	strongly agree
to get promotion	○	○	○	○	○	○
to improve student learning	○	○	○	○	○	○
to satisfy myself professionally	○	○	○	○	○	○
to get appreciation from parents	○	○	○	○	○	○
to be loved by my students	○	○	○	○	○	○
to strengthen my authority	○	○	○	○	○	○
to develop myself	○	○	○	○	○	○
to please school principals	○	○	○	○	○	○
to better prepare my students for life	○	○	○	○	○	○

Appendix B

The Teacher Self-Regulation Questionnaire- Turkish Version

Merhaba

Sevgili Meslektaşım,

Bu araştırma öğretmenlerimizin öğretmenlik mesleğine yönelik yaklaşımlarını belirlemek amacıyla yapılmaktadır. Bu nedenle sizlerin görüşlerinin alınmasına gerek duyulmuştur.

Birinci bölümde sizinle ilgili kişisel bilgileri doldurmanız gerekmektedir. Diğer bölümlerde ise öğretmenlik mesleği ile ilgili bir dizi cümle bulunmaktadır. Bunlardan sizin duygu ve görüşlerinize en yakın olduğunu düşündüğünüz tek bir seçeneği işaretleyiniz.

Kişisel bilgileriniz kesinlikle gizli tutulacaktır. Araştırmanın amacının gerçekleşmesi cevaplarınızın içtenliğine ve soruları eksiksiz olarak cevaplamanıza bağlıdır.

Bu araştırmaya katılım isteğe bağlıdır ve onayınızı geri çekmek isterseniz talebinizi "azra.ates@tum.de" adresine gönderebilirsiniz. Anketi tamamlamadan önce durdurmak isterseniz, daha önceki veriler işleme alınmayacaktır. Verileriniz üçüncü taraflara aktarılmayacaktır ve bir yıl sonra tamamen silinecektir.

Şimdiden teşekkürler...

Devam

Kardelen Azra Ates, Technical University of Munich (TUM) – 2020

Yaşınız

Cinsiyetiniz

- ○ Kadın
- ○ Erkek
- ○ Diğer

Öğretmen misiniz?

- ○ Evet
- ○ Hayır
- ○ Öğretmen adayıyım
- ○ Diğer

Hangi ülkede öğretmenlik yapıyorsunuz / yapacaksınız?

Şu anda öğrenci misiniz?

Yanıtınız evetse lütfen ilgili alana kaçıncı sınıfta olduğunuzu yazınız.

- ○ Evet, sınıfım
- ○ Hayır

Lütfen branşınızı belirtiniz.

	Tümüyle Katılmıyorum	Çoğunlukla Katılmıyorum	Bir bölümüyle Katılmıyorum	Bir bölümüyle Katılıyorum	Çoğunlukla Katılıyorum	
Ders hazırlarken, öğrencilerin kazanmasını istediğim hedefleri belirlerim.	○	○	○	○	○	○
Zamanı etkili kullanma konusunda kendimi yönlendiririm.	○	○	○	○	○	○
Her şey planladığım gibi gittiğinde kendimi takdir ederim.	○	○	○	○	○	○
Başarılı olduğumu görmek beni daha çok çalışmaya yönlendirir.	○	○	○	○	○	○
Bir sorunla karşılaştığımda soğukkanlı davranırım.	○	○	○	○	○	○
Ders hazırlarken konuya uygun öğretme yöntemini belirlerim.	○	○	○	○	○	○
Ders sırasında herhangi bir sorun çıktığında önce sakinleşmeye çalışırım.	○	○	○	○	○	○
Kullandığım yöntemlerin işe yaramadığını görürsem değişik başka yöntemler kullanırım.	○	○	○	○	○	○
Mesleki açıdan olumsuz yönde değerlendirilmek beni üzer.	○	○	○	○	○	○
Ders hazırlarken öğrenci özelliklerini (ön bilgi, gelişim düzeyleri vs.) göz önüne alırım.	○	○	○	○	○	○
Ders sırasında yaptığım hatalardan ders alırım.	○	○	○	○	○	○
Kendimi bir olay karşısında kötü hissettiğimde olumlu düşünmeye çalışırım.	○	○	○	○	○	○
Çözemediğim sorunlar olduğunda diğer öğretmenlerden yardım isterim.	○	○	○	○	○	○
Ders anlatırken öğrencilerin yüz ifadelerini dikkate alırım.	○	○	○	○	○	○
Ders sonunda hedeflerime ulaşıp ulaşamadığımı belirlemeye çalışırım.	○	○	○	○	○	○
Ders hazırlarken gerektiğinde meslektaşlarımdan yardım alırım.	○	○	○	○	○	○
Başarısız olduğumu görmek beni endişelendirir.	○	○	○	○	○	○
Derse başlamadan önce öğrencileri nasıl değerlendireceğimi belirlerim.	○	○	○	○	○	○
Ders anlatırken öğretim yöntemlerimi öğrencilerin gereksinimlerine göre değiştiririm.	○	○	○	○	○	○
Ders sonrasında edindiğim olumlu ve olumsuz deneyimleri meslektaşlarımla tartışırım.	○	○	○	○	○	○
Ders hazırlarken varolan araç-gereçleri göz önünde bulundururum.	○	○	○	○	○	○
Öğrencilerimden aldığım dönütleri dersi daha iyi anlatmak için kullanırım.	○	○	○	○	○	○
Ders hazırlarken öğrencilerin gereksinimlerini düşünürüm.	○	○	○	○	○	○
Bir sorun karşısında önce derin bir nefes alırım.	○	○	○	○	○	○
Ders sonunda kendimi değerlendirirken geçmiş yıllardaki başarımı ölçüt olarak alırım.	○	○	○	○	○	○
Ders sırasında herhangi bir sorun çıktığında paniğe kapılmam.	○	○	○	○	○	○

	Tümüyle katılmıyorum	Çoğunlukla katılmıyorum	Bir bölümüyle katılmıyorum	Bir bölümüyle katılıyorum	Çoğunlukla katılıyorum	
Öğretmenlik mesleğini severim.	○	○	○	○	○	○
Öğrencilerimin bir şeyler öğrendiğini görmek beni mutlu eder.	○	○	○	○	○	○
Öğretmen olarak çalışmak bana gurur verir.	○	○	○	○	○	○
Çocukluğumdan beri öğretmenlik mesleğine ilgi duyarım.	○	○	○	○	○	○
Derse istekle girerim.	○	○	○	○	○	○

Başarılı bir öğretmen olmak niçin önemlidir?

	Tümüyle Katılmıyorum	Çoğunlukla Katılmıyorum	Bir bölümüyle Katılmıyorum	Bir bölümüyle Katılıyorum	Çoğunlukla Katılıyorum	
Terfi almak için	○	○	○	○	○	○
Öğrencilerimin daha iyi öğrenmesi için	○	○	○	○	○	○
Kendimi mesleki yönden tatmin etmek için	○	○	○	○	○	○
Velilerden beğeni görmek için	○	○	○	○	○	○
Öğrencilerim tarafından sevilmek için	○	○	○	○	○	○
Otoritemi sağlamlaştırmak için	○	○	○	○	○	○
Kendimi geliştirmek için	○	○	○	○	○	○
Yönetimi memnun etmek için	○	○	○	○	○	○
Öğrencilerimi yaşama daha iyi hazırlamak için	○	○	○	○	○	○