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**C. Ergin Ekinci and Necla Ekinci**

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**C. Ergin Ekinci**, Mugla Sitki Kocman University, Turkey. (e-mail: [EEKINCI@MU.EDU.TR](mailto:EEKINCI@MU.EDU.TR))

**Necla Ekinci**, Mugla Sitki Kocman University, Turkey. (e-mail: [NEKINCI@MU.EDU.TR](mailto:NEKINCI@MU.EDU.TR))

## **A Study on the Relationships between Teachers' Critical Thinking Dispositions and Their Perceptions of Occupational Professionalism**

C. ERGIN EKINCI and NECLA EKINCI

### **Abstract**

The purpose of this descriptive study is to explore the relationships between teachers' critical thinking dispositions and their perceptions of occupational professionalism. The sample of the study has consisted of 242 teachers specified from the population of upper-secondary school teachers working in Mentese, Mugla, Turkey. The data of the study were collected through the administration of the UF/EMI Critical Thinking Dispositions Assessment scale and the Teachers' Occupational Professionalism scale. In the analysis of the data, descriptive statistics, *t*-test, ANOVA and multiple regression analysis were employed. The results of the study revealed that: (1) Teachers have a high level of critical thinking disposition which does not significantly change for the variables of gender, school type or seniority, but it does for education level; (2) Teachers have a high level perception of their own professionalism within professional awareness and emotional labor dimensions of occupational professionalism. They have a moderate level perception of their own professionalism within contribution to organization and personal development dimensions of occupational professionalism. Their total perception scores do not significantly change for the variables of gender, education, school type or seniority. (3) The dimensions of critical thinking dispositions of teachers together predict a significant part of their occupational professionalism perceptions. In short teachers' critical thinking dispositions seem to be an important component of teacher professionalism.

**Keywords:** critical thinking, critical thinking dispositions, teacher professionalism, occupational professionalism, teachers



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## Introduction

Though the qualifications and functioning of all the elements of educational systems are of great importance in terms of the success of any system, it is not independent of teacher quality. There is a large amount of research in the literature supporting this view. For instance, Hattie (2009), in a comprehensive study exploring the factors affecting students' learning, found that teacher qualifications have a greater effect on student performance than curriculum, instructional methods, materials, equipment, school buildings and the role of parents. In a study, focused on the factors affecting student performance (Barber & Mourshed, 2007), the factor found to be most influential on student performance was teacher qualifications which was expressed as "The quality of an educational system cannot exceed the quality of its teachers" (p. 16). On the basis of these and similar findings, countries trying to develop their schools and education systems to meet increasing social and economic demands started to bring teacher development to the fore as a reform movement (OECD, 2016). What is meant here is not a restricted competence including content knowledge, attitudes, skills etc. but an occupational professionalism involving the conceptual development of a comprehensive union between individuals and education.

Professionalism within this sense requires teachers possessing some certain competencies to maintain their profession in a professional manner. One of these competency domains is believed to be critical thinking dispositions both triggering critical thinking and directing individuals towards using their critical thinking skills willingly and voluntarily (Facione, 1998; Facione, Giancarlo, Facione & Gainen, 1995; Paul, Binker & Weil, 1990). In this context, the purpose of the current study is to determine the relationships between teachers' critical thinking dispositions and occupational professionalism.

### *Teachers' Occupational Professionalism*

It was only in the mid-nineteenth century that a broadening of professional groups started to occur across Western Europe and North America and many occupational groups increasingly became engaged in efforts to be members of these groups (Gamble, 2010). One of these occupations is teaching. Preceding this change, professionalism of both teaching and other occupations claiming professionalism has long been addressed on the basis of whether or not they meet the idealized criteria specific to classical professions (e.g. doctors, lawyers, etc.) (Kim-Godwin, Baek & Wynd, 2010). In this understanding based on traditional and prestigious model profession-specific characteristics, while occupations that meet certain criteria were regarded as professional, those that do not satisfy can easily be excluded (Hoyle and John, 1995). Yet, today no modern profession can emulate the ideal-type traits of the classical professions – not even modern versions of those professions themselves (Gamble 2010).

This has led to a change and diversity in the conception of professionalism. As a result, while many common features have been protected, it has been increasingly accepted that each professional field should have its own conception of professionalism. This approach has also been reflected in the teaching profession. Thus, a new conception of professionalism started to develop in the profession of teaching claiming that instead of taking other professions as a reference to evaluate the professionalism of their own profession, teachers should make this evaluation on the basis of their own references made up of knowledge, skills, attitudes and practices necessary for the successful accomplishment of teaching task

(Sexton, 2007). This conception reflects the conception of professionalism grounded on the determination of which competences (knowledge, attitude, behavior) should be employed for the successful execution of a profession rather than the conception of professionalization based on the attempt made to achieve a certain status in the society. This conception also reflects a discourse of professionalism that focuses on how attitudes and behaviors can be influenced in order to enable teachers to behave more professionally (Evans, 2008; Evetts, 2013). Thus, it can be argued that the new teacher professionalism depends on a pedagogical rather than a sociological perspective.

In an understanding that reflects this perspective, Evans (2011) based teacher professionalism on three dimensions: *behavior*, *attitude* and *intellectuality*. Behavioral dimension refers to the degree to which teachers can fulfill the requirements of the profession. It is this dimension in which teachers plan, implement, evaluate and develop activities to ensure student learning. The second dimension refers to the teacher's perception of and assumptions about the profession. The intellectuality (knowledge) dimension involves having the knowledge and skills required by the profession, having mastered their fields and following developments in their fields. This dimension is more related to the knowledge base of teacher professionalism. Therefore, knowledge based competency is the focal point of professionalism which is expressed by (Freidson, 1994, p. 36), as "The authority of knowledge is central to professionalism". In this context, it has begun to be accepted by most scholars that a professional knowledge base is highly necessary and a knowledge base comparable with that of any other profession exists (Sexton, 2007).

Having conducted the first studies extensively revealing the knowledge base of the teaching profession, Shulman (1986, 1987) conceptualized the professional knowledge base of teaching as a comprehensive content knowledge and comprehensive pedagogical knowledge that could be used for the effective teaching of this content knowledge. According to Shulman (1987), teaching consists of the following professional knowledge-based dimensions: content knowledge, general pedagogical knowledge, curriculum knowledge, knowledge of learners, knowledge of educational settings, educational objectives, results, values and their philosophical and historical grounds. Then, new additions were made to these categories and they were converted into a set of knowledge to be possessed by the teachers (Bousted & Johnson, 2005; Gamble 2010; Turner-Bisset, 1999). Moreover, with the influence of the developments in the field of technology in recent years, it is seen that the knowledge of using technology is considered to be among teacher competences (Anderson, 2008; Kaleli Yilmaz, 2015).

While there is teacher professionalism based on a pedagogical perspective, this process may be influenced by the policies and standards set by governments (Ozga & Lawn, 1988). For this reason, due to its public dimension in practice, it can be maintained that the professionalization process of teachers works differently from that of other professions. This conception of professionalism anticipates that employees are more likely to act more professionally when doing their jobs, and that their efforts contribute to the accomplishment of organizational goals. In this conception, the conflicting principles of professionalism and business administration (such as autonomy and control or quality and efficiency) can be employed in cooperation (Noordegraaf, 2015). Thus, it is seen that the pedagogical discourse constituting the essence of teacher professionalism on the one hand,

and the basic elements of business administration; performance and accountability, on the other coexist in modern educational reforms of many countries (Nikel, & Lowe, 2010). This can also be seen as a reflection of global trends on teacher professionalism. In this new conception, unlike traditional professionalism, one can speak of a collective professionalism rather than individual professionalism. Yılmaz and Altinkurt (2014) defined this conception as the transformation of individual professionalism into organizational professionalism. In this conception, it is important to ensure both organizational performance and individual benefits through individual performance.

New demands expected from the labor force as a result of the competition caused by social, economic and technological developments (OECD, 2016; Orszag, 2015; Pithers & Soden, 2000) as well as the current inadequacies of traditional education and school systems (low achievement, undesirable behaviors, class repetitions, school drop-outs, etc.) force educational institutions to benefit more from the concept of professionalism in many countries (Anderson, 2012). For the success of reforms carried out to meet these new demands and to overcome the existing inadequacies, ensuring the professional development of teaching has been considered to be essential (Matzen and Edmunds, 2007; OECD 2016; Tutkun & Aksoyalp, 2010; Villegas-Reimers, 2003).

In this context, it is observed that discussions and efforts to meet these demands and to overcome these shortcomings that have been widely researched in recent years and also viewed to be problems in Turkey have concentrated on the issues of professionalization of teachers and the training of qualified teachers. In this connection, as a result of the works initiated in 2002, the Ministry of National Education published the General Competences of the Profession of Teaching in 2006 and the Special Competences in 2008. Within the framework of the teacher competency studies, the School Based Professional Development model was developed, its guide was prepared and its piloting was completed in 2011. Thus, the teacher qualifications were specified and a professional development model was designed to support the teachers in the framework of these qualifications (Eğitim Reformu Girişimi [Education Reform Initiative], 2013). However, it seems quite difficult to say that these developments have adequately found reflections in practice and that a systematic policy process that addresses the professionalization of teachers with its all dimensions is currently underway (TEDMEM, 2016).

In the current study, the professionalism of teachers was examined within the context of the four dimensions put forward by Altinkurt and Yılmaz (2014) as *personal development*, referring to teachers' voluntary endeavor for improving themselves; *contribution to organization*, referring to teachers' use of their skills and competences for the sake of the schools; *professional awareness*, referring to teachers' awareness of their responsibilities, being open to change and progress, trying to do their best for the sake their students, and *emotional labor*, referring to teachers' effort not to reflect their personal emotions to their work setting in order to exhibit behaviors suitable to their profession, management of emotions to produce appropriate work behaviors.

#### *Critical Thinking and Critical Thinking Dispositions*

Man has always made effort to make sense of his/her own actions, others' actions and thoughts and objects, events and phenomena. This effort relies on thinking to a great extent. Magnitude and complexity of the problems involved in this process require employing

different ways of thinking. One of these ways of thinking is critical thinking. Critical thinking, seen as a form of higher-order thinking beyond every day, casual thinking, is a concept that goes as far back as Socrates (Thayer-Bacon, 1998). Since then, critical thinking has become a problematic area that has been debated due to the complex nature of thinking processes as well as the interest in thinking itself (Ennis, 1987; Halpern, 1998). Today, though there are some common features, there seems to be no agreement on the definition, elements and formation of critical thinking in relation to the individual. The fact that critical thinking is a subject of different disciplines and that each discipline takes a different viewpoint of critical thinking seem to be reasons for such disputes to continue. It appears that the theoretical foundations of critical thinking are addressed by three academic disciplines: Philosophy, cognitive psychology and education (Lai, 2011). The criticism of the approaches set out by these disciplines that is beyond the scope of this paper is briefly discussed below.

The philosophical approach conceptualizes critical thinking based on the characteristics of the individual (Thayer-Bacon, 2000) and what he/she can do under the best conditions (Sternberg, 1986), rather than on the behaviors or actions that can be displayed by a critically thinking individual. Critical thinking is a particular quality of thinking and is a form of thinking that meets specified criteria of adequacy and accuracy (Bailin 2002). In this context, while Ennis (1985) defines critical thinking as “reflective and reasonable thinking that is focused on deciding what to believe or do” (p. 45), Bailin, Case, Coombs, and Daniels (1999) define it as “purposeful thinking directed towards forming a judgment meeting the criteria of adequacy and accuracy” (p. 287). Characteristics of a critical thinker can be listed as follows: A critical thinker is inherently curious, open-minded, flexible, reasonable, willing to learn, cautious in forming a judgment, willing to consider others’ view points and understands different viewpoints (Facione, 1990).

Contrary to philosophical tradition, the cognitive psychological approach focuses not on how people will or should think under ideal conditions but on how people actually think (Sternberg, 1986). In this framework, critical thinking is attempted to be defined based on the behaviors or actions of critical thinking individuals. Proponents of this approach, in a sense, reduce critical thinking to the observable products (behaviors or skills) of the thinking process as a reflection of the behavioral approach (Bailin, 2002; Sternberg, 1986). On the basis of this approach, various definitions of critical thinking have been offered such as “the use of those cognitive skills or strategies that increase the probability of desirable outcomes” (Halpern, 1998, p. 450), “mental processes, strategies and representations employed by people to solve problems, make decisions and learn new concepts” (Sternberg, 1986, p. 3); “seeing different aspects of a problem; individuals’ being open to new evidence not complying with their own opinions; reasoning without the influence of feelings; reaching conclusions on the basis of the existing knowledge and phenomena; problem solving etc. ” (Willingham, 2007, p. 8).

The educational approach conceptualizes critical thinking based on Bloom’s taxonomy (1956), which consists of six levels in the cognitive domain (Lai, 2011). In this taxonomy, there is a hierarchical structure at the bottom of which there is the “comprehension” level and at the top there is the “evaluation” level. The highest three levels here (analysis, synthesis and evaluation) are believed to represent critical thinking (Kennedy, Fisher, & Ennis, 1991). Unlike the other two traditions, this approach seems more advantageous in

terms of applicability to education as it relies on years of observations classroom experiences and student learning (Sternberg, 1986).

Despite the differences in the definitions of the three schools of thought, there is a common consensus on some factors that facilitate critical thinking and on three elements of critical thinking: skills, dispositions and knowledge (Lai, 2011).

Critical thinking skills represent the cognitive abilities that underlie critical thinking. Lai (2011) exemplifies the cognitive skills / abilities involved in critical thinking through references made to numerous studies: Analysis of discussions, arguments and evidence, by making inferences using inductive or deductive reasoning, making and evaluating decisions, problem solving, asking and answering questions to clarify a problem, defining concepts, determining hypotheses, interpretation and explaining and seeing both sides of a coin. The skills on which there is a consensus are (Fascione, 2015) interpretation, analysis, inference, evaluation, explanation and self-regulation. Though they are a pre-requisite for critical thinking, the existence and level of these skills are not adequate for critical thinking to occur. Research shows that though many people have these skills, they do not employ or are not eager to employ them in many cases. The fact that some of the dispositions required for critical thinking are not sufficiently developed in these people is shown as the reason for this situation (Tishman, Jay, & Perkins, 1993).

It can be argued that in a sense critical thinking is a combination of knowledge, cognitive skill/abilities and affective dispositions (Ennis, 1987; Halpern, 1998). As a complementary element of critical thinking, critical thinking dispositions are completely different from critical thinking skills. There are many definitions in the literature that have common points about critical thinking dispositions. While Facione (2000) defines critical thinking dispositions as "consistent internal motivations related to giving reactions to people, incidences and cases in a habitual manner" (p. 64), Zhang (2003) defines them as a desire directing the individual towards critical thinking. Norris (1989), on the other hand, defines critical thinking disposition as an attitude, a sense of responsibility directed towards critical thinking. Again, according to Facione (1990), critical thinking disposition is a mental habit oriented towards critical thinking and a kind of intellectual virtue. Critical thinking dispositions are defined by Irani et al. (2007) as "attitudes developed by individuals through interactions with elements (adults, peers or environmental factors) that allow them to form critical thinking activities" (p. 3). According to Nixon, Dam & Packard (2010) defining critical thinking dispositions specific to the profession of teaching, critical thinking dispositions are predictable behavioral patterns and orientations of teachers at certain time and in certain conditions.

Perkins, Jay, and Tishman (1993) propose a triadic conception of disposition, which consists of three elements: *inclinations*, *sensitivity*, and *ability*. Inclinations are defined as the impetus individuals feel to behave in a certain way, reflecting an urge, a desire, a motivation, or a habit/disposition (e.g. open-mindedness). Sensitivity is referred to as an awareness of the appropriateness of a behavior and alertness to occasions when a certain behavior (e.g. open-mindedness) is needed. Finally, ability means that one has the skills to follow through on the opportunity. These three elements are necessary conditions for behavior, but it is important to emphasize the key role of developing sensitivity in the classroom.

Critical thinking dispositions are thought to be more comprehensive than critical thinking skills. These dispositions are seen as the first step towards demonstrating critical

thinking skills. Therefore, individuals' critical thinking dispositions have the potential to influence their critical thinking capacity. Thus, for people to use their critical thinking skills, they need to have critical thinking dispositions. It can be argued that as the level of dispositions increases, the possibility of employing critical thinking skills/abilities also increases. Individuals with low level dispositions are not much interested in complex problems, do not seek different solutions to problems, do not question judgments or do not try to solve problems (Irani et al., 2007).

It is seen that different groupings having some common points have been made for the dimensions of critical thinking dispositions in the literature. The seven critical thinking dispositions identified by the Delphi Project supported by the American Philosophical Association are curiosity, open mindedness, systematicity, analyticality, maturity, self-confidence, and seeking truth (Facione, Facione & Sanchez, 1994). Halpern (1998) defined critical thinking dispositions as thinking and working in a planned manner, being open to new ideas, starting and completing a task in a comprehensive manner, not unconditionally accepting an idea, approach or ideology and one's adopting a critical approach to his/her own thinking process.

In the current study, the dimensions of critical thinking dispositions are restricted to the dimensions of the data collection tool UF/EMI scale (engagement, innovativeness and cognitive maturity). These dimensions are summarized below on the basis of the explanations of Ertaş Kılıç & Şen (2014) and Ricketts & Rudd (2005):

The *engagement* disposition refers to individuals' predisposition to look for opportunities to use reasoning; anticipating situations that require reasoning; and confidence in reasoning ability. It can explain the reasoning process conducted while trying to reach a judgment and to solve a problem.

The *cognitive maturity* (maturity) disposition refers to individuals' awareness of the complexity of real problems; being open to other points of view; and being aware of their own and others' biases and predispositions. Such individuals are aware of the fact that their opinions are affected by themselves, their surroundings and experiences. Cognitively mature individuals seek for different points of view and while reaching a judgment or finding a solution to a problem, they can objectively evaluate them.

The *innovativeness* disposition refers to individuals' predisposition to be intellectually curious and wanting to know the truth. They try to have new information by reading and questioning. They want to bring novelties to their jobs, positions and lives. Such people never give up searching the truth even if it contradicts their existing beliefs and thoughts.

Educators are aware of the importance of critical thinking as a learning product and educational quality for a long time. However, the importance of critical thinking has been increasing since the beginning of the 21st century as a result of the momentum gathered in social, economic, technological, etc. developments as well as extraordinary developments in relation to the amount, quality and function of knowledge. Thus, critical thinking started to be seen as one of the leading personal competence domains to be mastered to adapt to these developments and make effective use of them. As a result, critical thinking started to be an area of interest for both educators as a subject of learning-teaching and many other circles aside from educators due to its effects on areas such as life, business and citizenship.



In this regard, it seems that the efforts to provide an effective reflection of critical thinking in educational programs and practices have accelerated. For instance, the Partnership for 21st Century Skills (n.d.) identified critical thinking as one of the many learning and innovation skills (creativity, problem solving, communication and collaboration) needed to prepare students for their post-secondary education and workforce. Common Core State Standards (2009) identifies critical thinking as an interdisciplinary quality that is highly important for higher education and employment. Nurturing of higher level thinking started to be accepted as an essential by institutions setting the standards of teacher education (e.g. International Society for Technology in Education, National Education Technology Standards for Teachers and National Council for Accreditation of Teacher Education [NCATE] - The Standard of Excellence in Teacher Preparation). In the United States, Canada, Australia and many other countries, critical thinking and problem solving take first place among the skills deemed necessary for employment (Brungardt, 2011; Crawford, Lang, Fink, Dalton, & Fielitz, 2011). In short, it can be argued that the idea that a strong critical thinking is one of the foundations of a good education.

As in many countries, the aforementioned developments have reflected in the education system of Turkey and as a result of this, curricula developed on the basis of a new teaching-learning conception (constructivism) were put into effect as of 2005. In the curricula, critical thinking is included as one of the common learning outcomes. On the other hand, a course of thinking training for the lower-secondary school 6<sup>th</sup> grade students was added as an elective course in the 2006–2007 school year.

In order to ensure the inculcation of these skills in students, besides other things, teachers should have higher level thinking skills and also pedagogical knowledge and skills needed to impart critical thinking skills to students (Barak & Shakhman, 2008). Moreover, teachers should be willing to use these skills and knowledge in their classroom activities and to demonstrate them in their behaviors as role models. In other words, teachers' critical thinking dispositions should also be developed. Therefore, the development of critical thinking knowledge, skills and dispositions can be seen as a part of both pre-service teacher training and the professional development of teachers during in-service training. In this regard, while critical thinking knowledge and skills can be seen as a part of the knowledge base of teacher professionalism, critical thinking dispositions can be seen as attitudes stimulating this base with a different point of view.

Given the delineations above, a relationship between teachers' critical thinking dispositions and occupational professionalism levels can be anticipated. In the literature, there are a large number of studies that investigated teachers' critical thinking dispositions in both their pre-service education and in-service training in relation some variables such as age, gender, branch, academic achievement, problem solving skills, learning styles, professional values, self-efficacy beliefs, teacher leadership, creative thinking (e.g. Alkın-Şahin, Tunca & Ulubey, 2013; Alkın-Şahin, Tunca, Altinkurt & Yılmaz, 2016; Oğuz & Sarıçam, 2016; Ricketts, Williams, & Priest, 2009; Rudd, Baker, & Hoover, 2000). Similarly, though limited in number, some studies looked at teachers' professionalism and its relationships with some variables such as age, gender, branch, job satisfaction, organizational cynicism, organizational alienation, teacher burn-out, school structure (e.g. Altinkurt & Ekinci, 2016; Altinkurt & Yılmaz, 2014; Bayhan, 2011; Cerit, 2012; Çelik & Yılmaz, 2015; Noordin, Rashid, Ghani, Aripin, & Darus, 2010; Tschannen-Moran, 2009; Uzun, Palic, & Akdeniz, 2013; Wright

& Bottery, 1997; Yorulmaz, Altinkurt & Yilmaz, 2015). However, no studies addressing the relationship between critical thinking dispositions and occupational professionalism were found. Thus, the current study is believed to make important contributions to the literature.

The purpose of the current study is to determine the relationship between teachers' critical thinking dispositions and occupational professionalism levels. In this context, answers were sought to the following research questions.

- What is the level of teachers' perception of occupational professionalism?
- Does teachers' perception of occupational professionalism vary significantly depending on their gender, education level, type of school they are working in and experience?
- What is the level of teachers' critical thinking dispositions?
- Do teachers' critical thinking dispositions vary significantly depending on their gender, education level, type of school they are working in and experience?
- Are teachers' critical thinking dispositions a significant predictor of teacher professionalism?

## Methodology

This study was designed and conducted in the relational survey model. The population of the study is comprised of 511 teachers working in high schools located in the Mentese province of the city of Mugla, Turkey, during the semester of the 2015-2016 school year. The number of teachers that can represent this population with 95% reliability level was calculated to be 220. Due to the possibility of uncompleted and/or erroneously completed data collection tools, a greater number of teachers than the sample was decided to be reached. In this regard, each school was considered to be a cluster and the data collection tool was administered to 258 teachers working in schools randomly selected by using the disproportionate cluster sampling technique. As a result of this application, a total of 242 data collection tools suitable for analysis were returned and then analyses then conducted on the data obtained from these tools.

Of the participating teachers, 128 (52.9%) are female, 114 (47.1%) are male; 207 (85.5%) hold an undergraduate degree and 35 (14.5%) hold a graduate degree; 56 (23.1%) have been working as a teacher for 10 years or less; 103 (42.6%) for 11-20 years and 83 (34.3%) 21 years or more; 112 (50.4%) are working in academic high schools, 81 (33.5%) in vocational technical high schools and 39 (16.1%) in religious vocational high schools.

The data of the study were collected through the administration of the Teachers' Occupational Professionalism Scale and UF/EMI Critical Thinking Disposition Assessment.

*The Teachers' Occupational Professionalism Scale:* The scale was developed by Yilmaz and Altinkurt (2014). The scale consists of four dimensions that are *personal development*, *contribution to organization*, *professional awareness* and *emotional labor* and 24 Likert-type items. The scale items are given scores ranging from 1-strongly disagree to 5-strongly agree. A total score can be taken from the scale. The higher total score taken from the scale is, the higher the level of the person's occupational professionalism is. Sample items for each dimension are as follows.

Personal development	I follow the books about my subject area I continuously read books even if they are not related to my subject area
Contribution to organization	I am willing to take part in school development-management teams I actively participate in social, cultural and vocational activities
Professional awareness	I think that I am open to new ideas and changes I am aware of my professional needs
Emotional labor	Even if I have some personal problems, I try to teach my best Even if I have difficult time, I try not to reflect this to my students

The construct validity of the scale was determined through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). According to the results of EFA, the four-factor structure of the scale explains 52.2% of the total variance. The item loading values of the scale vary between .40 and .84, and of the item-total correlations between .35 and .73. The goodness of fit indices of the scale obtained with CFA are as follows:  $\chi^2/sd= 2.66$  GFI= .82, AGFI= .78, RMSEA= .08, RMR= .05, SRMR= .08, CFI= .80, NFI= 0.72, NNFI= .77, PGFI= .67. The Cronbach Alpha internal consistency coefficients were calculated to check the reliability of the scale and it was found to be .79 for personal development, .74 for professional awareness dimension, .86 for contribution to organization, .80 for emotional labor dimension and .90 for the whole scale (Yılmaz & Altinkurt, 2014). In the current study, Cronbach Alpha internal consistency coefficients were also calculated and found to be .75 for personal development dimension, .79 for professional awareness dimension, .79 for contribution to organization, .84 for emotional labor and .90 for the whole scale.

*University of Florida Engagement, Cognitive Maturity, Innovativeness (UF-EMI): Critical Thinking Disposition Assessment:* The scale was developed by Irani et al. (2007) on the basis of Facione's study (1990) and its adaptation to Turkish was performed by Ertaş Kılıç & Şen (2014). The scale consists of three dimensions that are *engagement*, *cognitive maturity* and *innovativeness* and 25 Likert-types items. The scale items are given scores ranging from 1-strongly disagree to 5-strongly agree). Sample items for each dimension are as follows.

Engagement	I keep on working on things until I get them right. I enjoy finding answers to challenging questions.
Cognitive Maturity	I consider how my own biases affect my opinions. I listen carefully to the opinions of others even when they disagree with me.
Innovativeness	I will go out of my way to find the right answers to a problem. I search for the truth even when it makes me uncomfortable.

The construct validity of the scale was tested with confirmatory factor analysis (CFA). The data of the analysis were obtained from the application conducted with 342 high school students (9<sup>th</sup>-10<sup>th</sup> grades). One item in the scale (I may change my ideas when information conflicting with my existing ideas is given,) was excluded from the scale as no significant *t*-test value was obtained for it and its variance is high (.99). The analysis results confirmed that the three-factor original structure of the scale is verified. The goodness of fit indices of

the scale obtained with confirmatory factor analysis (CFA) were as follows:  $\chi^2/sd= 2.99$  GFI=.84, AGFI=.81 RMSEA=.08, RMR=.06, SRMR=.06, CFI=.94, NFI=.91, NNFI=.94, and PGFI=.70. Cronbach Alpha internal consistency coefficients were calculated to establish reliability and found to be .88 for the engagement dimension, .70 for the cognitive maturity dimension, .73 for the innovativeness dimension and .91 for the whole scale (Ertaş Kılıç & Şen, 2014).

The adaptation of the scale was performed with the data collected from the high school students. The sample of the current study consists of high school teachers. In the literature, this scale has been frequently used in studies with different contents and conducted at different levels. In most of these studies, it was used with participants from an adult age group (undergraduate students, graduate students, teachers etc.) (e.g. Duncan, Haas & Ricketts, 2016; Stedman, & Andenoro, 2007). Though in the literature it is indicated that this scale is used with adult age groups, its adaptation to Turkish was performed by using the data collected from high school students, which was evaluated as a limitation to the current study; thus, the construct validity of the scale was tested with confirmatory factor analysis (CFA) and its reliability was tested with Cronbach Alpha internal consistency coefficient.

In this regard, first, Kaiser-Meyer-Olkin (KMO) value (.923) and Bartlett Sphericity Test value [ $\chi^2 = 5372,761$ ;  $sd= 741$ ,  $p<0.00$ ] were calculated in order to determine the suitability of the data for factor analysis. These values show that the data set is suitable for exploratory factor analysis. As a result of exploratory factor analysis, a three-factor structure with an eigenvalue higher than 1 and explaining 56.49% of the total variance emerged and all the items were gathered under the same dimensions as in the scale developed in the adaptation study. Factor loading values of the scale items were found to be ranging from .42 to .79 and item total correlations were found to be ranging from .44 to .71. In order to determine the reliability of the scale, Cronbach Alpha internal consistency values were calculated on the data of the current study: It was found to be .89 for the engagement dimension, .83 for the innovativeness dimension, .82 for the cognitive maturity dimension and .94 for the whole scale. Thus, the Turkish adaptation of the UF/EMI by Ertaş Kılıç & Şen (2014) was confirmed to be suitable for use with an adult age groups.

Before conducting any analysis on the data collected, the raw data itself was analyzed and some amendments were made. In this regard, first improperly completed data collection tools were excluded and outlier analysis was performed. In the determination of outliers, z values were calculated. As there was no data with a z value  $\pm 3$  and over ( $z < \pm 3$ ), all the data collected were included in the analyses. Whether the data display a normal distribution or not was determined by calculating skewness and kurtosis values. For all the variables, kurtosis coefficients were calculated to range from -.080 to -.525 and skewness coefficients were calculated to range from -.060 to -.796. As these coefficients were in the  $\pm 1$  range, the distribution was considered to be normal.

In the analysis of the research data, descriptive statistics, t-test, one-way variance analysis (ANOVA) were employed. These analyses were conducted on the mean scores. For F values found to be significant, Tukey test, one of the post-hoc tests, was used. to determine the source of the difference In order to determine the effect size of the difference for t and F values found to be significant,  $\eta^2$  (eta-squared) statistics was used.  $\eta^2$  shows the variance explained by independent variables in dependent variables. When  $\eta^2$  value is in the range of

.01–.05, it indicates a low effect; when it is in the range of .06–.13, it indicates a medium effect and when it is 14 or higher, it indicates a strong effect (Büyüköztürk, 2014). Multiple-regression analysis was run to determine the extent to which the teachers' critical thinking dispositions predict their occupational professionalism. Prior to the regression analysis, besides the data analysis operations mentioned, the data were tested for multicollinearity. This test was conducted with variance increase factor (VIF) analysis and standardized regression coefficients (B). As the highest VIF value was calculated to be 5.19 and the highest B value was found to be .36, it was decided that there is no multicollinearity problem. A VIF value higher than 10 (Myers, 1990) or B value higher than 2 (Çokluk, 2010) indicates the existence of multicollinearity problem. The findings are discussed in reference to the relevant literature.

## Results

The findings of the study are presented in the order specified by the sub-purposes of the study.

The first sub-purpose of the study is to determine the teachers' occupational professionalism perceptions and compare them according to some variables (teachers' gender, education level, school type, seniority). The teachers' general occupational professionalism perception is high (M= 3.83, SD= .50). While their perceptions of professional awareness (M= 4.21, SD = .60) and emotional labor (M= 4.12, SD= .59) are considerably high, their perceptions of contribution to organization (M= 3,58, SD= .60) and personal development (M= 3.41, SD= .74) are at the moderate level.

The teachers' occupational professionalism perceptions do not vary significantly depending on gender in terms of both the total score [ $t_{(240)} = 1.096$ ,  $p > .05$ ] and sub-dimension scores [personal development:  $t_{(240)} = .531$ ,  $p > .05$ ; professional awareness:  $t_{(240)} = 1.810$ ,  $p > .05$ ; contribution to organization:  $t_{(240)} = .532$ ,  $p > .05$  and emotional labor:  $t_{(240)} = .349$ ,  $p > .05$ ].

While the teachers' occupational professionalism perceptions do not vary significantly depending on the teachers' education (undergraduate and graduate) in the sub-dimensions of personal development, contribution to organization and emotional labor [ $t_{(240)} = 1.288$ ,  $p > .05$ ;  $t_{(240)} = 1.898$ ,  $p > .05$  and  $t_{(240)} = 1.374$ ,  $p > .05$ , respectively], they vary significantly in the sub-dimension of professional awareness [ $t_{(240)} = 2.635$ ,  $p < .05$ ] in favor of teachers with a graduate education (Undergraduate M= 4,17, S= ,62, Graduate M= 4,46, SD= ,42).  $\eta^2$  value showing the effect of the difference is .03.

The teachers' occupational professionalism perceptions do not vary significantly depending on the type of the school they are working in [personal development:  $F_{(2-237)} = .209$ ,  $p > .05$ ; professional awareness  $F_{(2-237)} = .688$ ,  $p > .05$ ; contribution to organization:  $F_{(2-237)} = .460$ ,  $p > .05$  and emotional labor  $F_{(2-237)} = .345$ ,  $p > .05$ ].

The teachers' occupational professionalism perceptions do not vary significantly depending on their seniority [personal development:  $F_{(2-237)} = .176$ ,  $p > .05$ ; professional awareness  $F_{(2-237)} = .024$ ,  $p > .05$ ; contribution to organization:  $F_{(2-237)} = .422$ ,  $p > .05$  and emotional labor  $F_{(2-237)} = 2.051$ ,  $p > .05$ ].

The second sub-purpose of the study is to determine the teachers' critical thinking dispositions and compare them according to some variables (teachers' gender, education, school type and seniority). The teachers' critical thinking dispositions are considerably high in terms of the general score ( $M= 4.05$ ,  $SD= .53$ ) and scores taken from the sub-dimensions (engagement  $M= 4.04$ ,  $SD=.55$ , cognitive maturity  $M= 4.06$ ,  $SD= .57$ , innovativeness  $M= 4.03$   $SD= .58$ ). The teachers' critical thinking dispositions do not vary significantly depending on gender in both the total score [ $t_{(240)}= .50$ ,  $p>.05$ ] and the scores taken for the sub-dimensions [engagement:  $t_{(240)}= .531$ ,  $p>.05$ ; cognitive maturity:  $t_{(240)}= .214$ ,  $p>.05$ ; innovativeness:  $t_{(240)}= .138$ ,  $p>.05$ ]. While the teachers' critical thinking dispositions do not vary significantly by education level in the sub-dimensions of cognitive maturity and innovativeness [ $t_{(240)}= 1.571$ ,  $p>.05$ ;  $t_{(240)}= 1.928$ ,  $p>.05$ , respectively], they vary significantly in the sub-dimension of engagement [ $t_{(240)}= 1.571$ ,  $p>.05$ ] and for the whole of the scale [ $t_{(240)}= 2.278$ ,  $p<.05$ ] in favor of the graduate students (Engagement: undergraduate  $M= 4.02$ ,  $SD= .57$ , graduate  $M= 4,19$ ,  $SD=.42$ ; General: undergraduate  $AO= 4.02$ ,  $SD= .55$ , graduate  $M= 4,20$ ,  $SD=.41$ ).  $\eta^2$  value showing the effect size is .02 for both of the dimensions.

The teachers' critical thinking dispositions do not vary significantly depending on the type of high school they are working in (academic high schools, vocational and technical high schools, or religious vocational high schools) [engagement:  $F_{(2-237)}= .051$ ,  $p>.05$ ; cognitive maturity:  $F_{(2-237)}= .527$ ,  $p>.05$ ; innovativeness:  $F_{(2-237)}= .151$ ,  $p>.05$ , respectively]. The teachers' critical thinking dispositions do not vary significantly depending on their experience [engagement:  $F_{(2-237)}= .970$ ,  $p>.05$ ; cognitive maturity:  $F_{(2-237)}= 2.360$ ,  $p>.05$ ; innovativeness:  $F_{(2-237)}= .778$ ,  $p>.05$ ].

The third sub-purpose of the current study is to determine the relationships between the teachers' critical thinking dispositions and occupational professionalism perceptions. The results of the regression analyses are presented in Table 1. There are medium and positive correlations between the teachers' occupational professionalism perceptions (predicted variable) and the sub-dimensions of critical thinking dispositions (predicting variable); engagement ( $r= .694$ ), innovativeness ( $r= .676$ ) and cognitive maturity ( $r= .606$ ). When the other variables were controlled, significant correlations were found between the teachers' occupational professionalism perceptions and the three sub-dimensions of critical thinking (engagement  $r= .235$ , innovativeness  $r= .138$  and cognitive maturity  $r= .124$ ).

**Table 1.** Regression Analysis Results Related to Prediction of Occupational Professionalism Perceptions

Variables	Unstandardized Coefficients		Standardize	T	p	Correlations	
	B	Std. Error	β			Zero-order	Partial
Constant	1.104	.180		6.142	.000		
Engagement	.357	.096	.389	3.728	.000	.694	.235
Cognitive Maturity	.126	.065	.141	1.928	.055	.606	.124
Innovativeness	.192	.089	.223	2.148	.033	.676	.138
$R= .71$ $R^2= .50$ $F_{(3-238)}= 81.183$ , $p=.000$							

All of the sub-dimensions of critical thinking dispositions together display a high level significant correlation with the teachers' occupational professionalism perceptions ( $R=.71$ ,  $R^2=.50$ ,  $p<.01$ ). All of these dimensions together explain 50% of the variance in the teachers' occupational professionalism perceptions. According to the standardized regression coefficient ( $\beta$ ), the predicting variables can be put into a descending order of importance in terms of their effect on the teachers' occupational professionalism perceptions as follows: engagement, innovativeness and cognitive maturity. When the results of the t-test related to significance of regression coefficients were examined, it was found that while engagement and innovativeness sub-dimensions of critical thinking are significantly influential on the teachers' occupational professionalism perceptions, the cognitive maturity sub-dimension is not.

### **Discussion and Conclusion**

The current study aimed to determine the relationship between the teachers' occupational professionalism perceptions and critical thinking dispositions. In this respect, first on the basis of the teachers' opinions, their occupational professionalism perceptions and critical thinking dispositions were determined and then they were compared in relation to some variables. Finally, it was attempted to determine the relationship between the teachers' occupational professionalism perceptions and critical thinking dispositions.

The findings related to the teachers' occupational professionalism perceptions revealed that while the teachers have considerably high levels of occupational professionalism perception in the sub-dimensions of professional awareness and emotional labor, they have relatively lower levels (close to medium level) of occupational professionalism perception in the sub-dimensions of personal development and contribution to organization. These findings concur with the findings reported in the literature on occupational professionalism (Altinkurt & Ekinci, 2016; Altinkurt, & Yilmaz, 2014; Çelik & Yilmaz, 2015; Yorulmaz et al., 2015). In light of these findings, it can be argued that teachers do not invest enough efforts to acquire up-to-date knowledge and skills required by their profession and their contribution to their organizations is relatively limited. Personal development; in terms of content, is largely related to the knowledge base of the teaching profession and constitutes the infrastructure for contribution to the institution. The knowledge base of the teaching profession consists of comprehensive content knowledge and pedagogical knowledge that can be used to teach this content knowledge effectively (Shulman, 1986, 1987). As pointed out by Freidson (1994), knowledge-based competence is the focal point of teacher professionalism and is largely the responsibility of teachers themselves. Taking this responsibility is one of the indicators of professionalism (Shantz & Prieur, 1996). Given the delineations above, it can be said that limitation of the teachers' efforts directed towards personal development can be seen as the limitation of their occupational professionalism.

In addition, continuous learning is important in ensuring and sustaining professional and personal development. There are a large number of studies in which teachers show continuous learning as the most important element of professional development (Bredeson, 2002; Day et al., 2007; Hargreaves, 2001; Webb et al, 2004). One of the basic elements of continuous learning, reading habit is at a considerably low level both among pre-service teachers (Elkatmış, 2015) and in-service teachers (Karaşahin, 2009). Therefore, the low individual effort of the teachers for their personal development is an expected result.

Another element that can affect teachers' personal development is organizational support. In Turkey, in-service training activities designed for the personal development of teachers are centrally organized by the Ministry of National Education (MoNE, or MEB in Turkish) and participation in these activities is largely voluntary. For instance, MoNE planned 526 different types of courses within the content of in-service training in 2017. Aside from few distance courses, the number of teachers planned to participate in these courses is nearly 40 000 (Milli Eğitim Bakanlığı (MEB) [Ministry of National Education], 2017). When these numbers are compared to the total number of teachers (about a million) in Turkey, they seem to be very small. Thus, it can be said that external efforts for the personal development of teachers are also limited.

The sub-dimensions of professional awareness and emotional labor seem to be more related to utilization of the competencies possessed by teachers. In this regard, it can be argued that high levels of professional awareness and emotional labor hold a potential for a higher level of professional performance. However, low level of personal development can be seen as a limitation for the utilization of this potential.

The teachers' occupational professionalism perceptions do not vary significantly depending on gender in total mean score and in the sub-dimension mean scores (personal development, professional awareness, contribution to organization and emotional labor). Thus, it can be maintained that regardless of their gender, teachers have similar occupational professionalism perceptions. When the literature on teachers' occupational professionalism (Altinkurt & Ekinci, 2016; Altinkurt, & Yilmaz, 2014; Bayhan 2011; Çelik & Yilmaz, 2015) is examined, findings similar to that of the current study can be seen. On the other hand, in some studies, some differences are observed in the sub-dimensions of occupational professionalism. For example, Yorulmaz et al. (2015) found that teachers' occupational professionalism perceptions vary significantly in the sub-dimensions of professional awareness and emotional labor in favor of female teachers. As there are few studies focusing on teachers' occupational professionalism in Turkey, it seems not to be possible to make a gender-based generalization.

While the teachers' occupational professionalism perceptions do not vary significantly depending on education level (undergraduate or graduate) in the sub-dimensions of professional development, contribution to organization and emotional labor, they vary significantly in the sub-dimension of professional awareness. Though the effect size is small, the teachers holding a graduate degree have a higher level of professional awareness. Thus, it can be said that the teachers holding a graduate degree are more aware of their responsibilities and more open to change and development. As no other study comparing teachers' occupational professionalism on the basis of education level has been found, the findings of the current study cannot be compared with other findings in the literature.

The teachers' occupational professionalism perceptions do not vary significantly depending on the type of school they are working in (academic, vocational, or religious). No study comparing teacher professionalism among the school types at the same level of schooling has been encountered. School administrations' efforts invested for the professional development of their teachers and autonomy provided for teachers may positively affect teacher professionalism (OECD, 2016). In the schools included in the current study, school administrations do not have responsibility for the professional development of teachers. Professional development activities are centrally organized and announced to



teachers. Teachers decide whether or not to participate in these activities on a volunteer basis. This is true for all schools. Therefore, the type of the school teachers is working in does not have a potential to affect teacher competences.

The teachers' occupational professionalism perceptions do not vary significantly depending on seniority. Thus, it can be argued that seniority does not contribute to teachers' professionalism. When teachers' professionalism is supported and a school system supportive to teachers' maintaining their profession professionally is established, then length of seniority can affect teachers' professionalism perceptions. In the schools included in the current study there is no such a school system and their school systems have very limited authorities and competences in this regard. When the research on teachers' occupational professionalism is examined (Altinkurt, & Yılmaz, 2014; Bayhan, 2011; Çelik & Yılmaz, 2015; Yorulmaz et al., 2015), it is seen that mostly it is emphasized that seniority does not lead to a difference in teachers' professionalism perceptions.

Findings related to teachers' critical thinking dispositions show that the teachers' critical thinking dispositions are considerably high both in total and in the sub-dimensions (engagement, cognitive maturity and innovativeness). When the research looking at critical thinking dispositions of teachers and pre-service teachers in Turkey is examined, it is seen that critical thinking dispositions in general are not as high as the critical thinking dispositions found in the current study; they were found to be medium in some studies (e.g. Coskun & Altinkurt, 2016; Koçak, Kurtlu & Epçaçan, 2015; Korkmaz, 2009; Kürüm, 2002;) and to be low in some other studies (e.g., Akgun & Duruk, 2016; Alkın-Şahin et al., 2013; Alkın-Şahin, et al., 2016; Alper, 2010; Bakır, 2015; Beşoluk & Önder, 2010; Çiçek-Sağlam & Büyükuysal, 2013; Korkmaz, 2009; Şen, 2009; Şengül & Üstündağ, 2009; Yakar, Altındağ & Kaya, 2010).

As known, though the existence and level of critical thinking skills/abilities are a prerequisite for thinking, they are not enough for the occurrence of critical thinking. Research shows that though many people have these skills, they do not employ or are not that willing to employ them in many cases. This might be because of the inadequate development of some dispositions in these people (Perkins et al., 1991; Tishman, et al., 1993) and with increasing level of critical thinking dispositions, critical thinking skills can be used to a greater extent (Irani et al., 2007). High level of critical thinking dispositions of the teachers participating in the current study; that is, their eagerness to think critically indicates a potential for the utilization of their critical thinking skills. For teachers' critical thinking dispositions to have a critical thinking potential, their critical thinking knowledge and skills and pedagogical competences necessary to employ these skills and knowledge for classroom activities should be developed. In a limited number of studies conducted on teachers' critical thinking skills in Turkey (e.g. Acun, Demir & Göz, 2010; Akar 2007; Narin & Aybek, 2010; Şendağ & Odabaşı, 2009;), it was found that teachers' critical thinking skills are at medium or low levels. In the curricula in effect in Turkey since 2005, critical thinking is among the common skills to be imparted in all the courses. Thus, critical thinking and reflecting it into classroom activities are viewed to be a part of teacher competences. Though in the current study it seems that the teachers can be more competent in terms of critical thinking, when evaluated together with the findings of other similar research, it is clear that there is a general inadequacy in terms of critical thinking.

The teachers' critical thinking dispositions both in general and in the sub-dimensions (engagement, cognitive maturity, and innovativeness) do not vary significantly depending on gender. Thus, gender-related characteristics seem to be not influential on critical thinking dispositions. Findings of a large number of studies conducted with in-service teachers or pre-service teachers (e.g. Bakır, 2015; Coşkun, 2013; Coskun & Altinkurt, 2016; Fırat Durdukoca & Arıbaş, 2010; Gök & Erdoğan, 2011; Koçak, et al. 2015; Kuvaç & Koç, 2014; Şen, 2009; Tural & Seçgin, 2012;), are consistent with the findings of the current study. A relatively smaller amount of research found that teachers' critical thinking dispositions vary significantly depending on gender. In some of these studies (e.g., Bilen, Ercan & Akçaozoglu, 2013), the difference is in favor of females and in very few of them (e.g., Oğuz & Sarıçam 2016; Yüksel & Alcı, 2012) it is in favor of males. Facione et al. (1995) found that female university students are more prone to cognitive maturity than male students.

While the teachers' critical thinking dispositions do not vary significantly depending on education level (undergraduate 85.5% and graduate 14.5%) in the sub-dimensions of cognitive maturity and innovativeness, they do vary in general and the sub-dimension of engagement. Though the effect size is not high, this difference is in favor of the teachers with a graduate degree. This result seems to be important as it shows the direction of the relationship between critical thinking and education level and provides insights into the benefits of graduate education. However, in Turkey, there is no regulation encouraging teachers to have graduate education. Therefore, there is almost no study using education level as a variable. For instance, the findings reported by Korkmaz (2009) support the findings of the current study. King, Wood & Mines (1990) studied 40 college seniors and 40 graduate students; they found significant main effects for educational level - graduate students scored higher than undergraduates.

The type of the school teachers is working in (academic high school, vocational and technical high school, and religious vocational high school) was found to have no effect on their critical thinking dispositions. The factors determining critical thinking dispositions seem to be more related to personal qualifications and the place of critical thinking in educational programs than the structure and functioning of the school. As no study comparing teacher professionalism among the school types at the same level of schooling was encountered, it is not possible to compare the findings of the current study in this regard with other studies.

The teachers' critical thinking dispositions do not vary significantly depending on seniority. This finding of the current study concurs with other studies (Alkın-Şahin et al., 2016; Korkmaz, 2009). Critical thinking dispositions and skills can be imparted through education to a large extent and they can be used in suitable environments. Utilization of critical thinking-based activities for longer times in classes might improve competences involved in critical thinking. On the basis of this assumption, teachers with more experience are expected to have higher level of critical thinking dispositions. However, this seems to be not true for the teachers participating in the current study.

When the findings of the current study related to relationships between the teachers' occupational professionalism perceptions and critical thinking dispositions are examined, it is seen that there are medium and positive correlations between the teachers' occupational professionalism perceptions (predicted variable) and the sub-dimensions of critical thinking (predicting variable) (engagement, innovativeness and cognitive maturity). All the dimensions of critical thinking together explain 50% of the variance concerning the teachers'

occupational professionalism perceptions. In light of this finding, it can be contended that with teachers' increasing dispositions to use their critical thinking knowledge and skills, the teachers' professionalism can also increase. In this regard, the level of teachers' critical thinking dispositions can be seen as an important element of their professional competences. Yet, as there is no study found in the literature exploring the relationship between teachers' critical thinking dispositions and occupational professionalism perceptions, it is not possible to compare these findings of the current study with other studies. Thus, it should be noted that the following evaluation is made within this limitation. There are some studies investigating the relationships between professionalism and critical thinking in fields other than education. The findings reported by these studies seem to support the finding of the current study. For instance, significant relationships were determined between the critical thinking skills and professionalism perceptions of students attending four different nursing undergraduate programs (Brooks & Shepherd, 1992;) between nursing professionalism and critical thinking dispositions (Park (2015), and between teachers' critical thinking dispositions and professional values (Alkın-Şahin et al., 2016).

As known, critical thinking dispositions are closely associated with the desire and tendency to use personal qualifications such as curiosity, open mindedness, systematicity, analyticality, maturity, self-confidence, and seeking truth (Facione et al., 1994). The results of the research show that the basic elements of teacher professionalism (knowledge, skills and professional dispositions) are not independent of the personal characteristics such as professional values, commitment, attitudes, beliefs, interest, and ethics, etc. Among these elements, professional dispositions correspond to teacher professionalism's sub-dimensions of professional awareness and emotional labor in the current study. For which reasons teachers will use their knowledge and skills are associated with the quality of their professional dispositions. Professional dispositions reflect an intentional pattern of behavior and mind that is oriented towards achieving professionalism (National Council for Accreditation of Teacher Education [NCATE], 2008). Therefore, teacher dispositions are as important as pedagogical skills and content knowledge in helping students learn (Beverly, Santos, & Kyger, 2006). The importance of teachers' professional dispositions arises from research findings showing a strong relationship between dispositions and the quality of student learning (Notar, Riley, Taylor, Thornburg, & Cargill, 2009). Furthermore, professional dispositions of teachers not only affect the behaviors related to effective classroom teaching but also professional interactions as well (Beverly et al., 2006). Given the delineations above, it can be argued that teachers critical thinking dispositions might have affected their professional dispositions.

Critical thinking dispositions also reflect an orientation towards how to use knowledge base of teaching (pedagogical and content knowledge). Hence, the extent of possessing the aforementioned personal characteristics can be seen as an indicator of how individuals will use their skills. In a sense, these characteristics bestow teachers with the freedom to use their pedagogical and content competences (knowledge and skills) as they wish. This autonomy provided by critical thinking dispositions for individuals also supports the formation of organizational autonomy (Hunter, 2009). When teacher autonomy supportive environments are generated, then teachers' critical thinking dispositions will be directed towards finding original solutions based on thinking rather than routine solutions to problems encountered. In other words, critical thinking disposition has the potential of

making teacher professionalism a thinking-based competence. Thus, the high level of critical thinking dispositions of the teachers involved in the current study should be evaluated from this perspective. Accordingly, rather than telling teachers what to do and how to do, they should be promoted to develop their professional dispositions related to what and how to do on the basis of critical thinking.

It is of great importance to convert the personal professionalism based on the aforementioned personal characteristics and dispositions (competences) into a collective professionalism serving the common objectives of the school. This conversion relies on both leadership-based efforts of education and school administrators and transformation of school systems from bureaucracy-based structures into teacher professionalism-based structures.

It can be concluded that: (a) The teachers' critical thinking dispositions are high. (b) While the teachers have a high level of professionalism perceptions in the sub-dimensions of occupational awareness and emotional labor, they have a medium level of professionalism perceptions in the sub-dimensions of contribution to organization and personal development; (c) The teachers' education level is influential both on their critical thinking dispositions and on their occupational professionalism perceptions; (d) The teachers' critical thinking dispositions are an important predictor of their occupational professionalism perceptions.

In light of the results of the study, the following recommendations can be made: (1) For teachers' personal and professional development to be turned into a professional disposition, the responsibility of professional development should be placed on teachers' shoulders and mechanisms to support teachers' attempts in this direction should be established; (2) By putting a greater emphasis on the development of teachers' critical thinking skills and dispositions during their pre-service education, critical thinking can be made a part of teachers' personal competences; (3) It is not possible to manage professional teachers with amateur school principals. Therefore, in order to obtain the expected benefits from the teacher professionalism, regulations should be introduced to turn education and school administration into a professional occupation; (4) For the provision of teacher professionalism and ensuring its development, first, education and school system should be constructed on the basis of teacher professionalism.

## Notes

Corresponding author: C. ERGIN EKINCI

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