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Turkish Undergraduate Supervisees' Views Regarding Supervisory Relationship

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A R T I C L E I N F O	A B S T R A C T
	Purpose: The supervisory relationship plays a pivotal role in clinical supervision. It is important for supervisors and researchers to identify factors regarding a strong supervisory relationship. In the international literature, research found that various factors influence the supervisory relationship. However, research is limited regarding supervisory relationship in undergraduate counselor education in Turkey. Therefore, the aim of this study was to examine Turkish undergraduate supervisees' views regarding supervisory relationship.

Research Methods: Case study design was used in this study. Participants were selected with maximum variation and extreme case sampling methods. Twelve undergraduate supervisees participated in individual semi-structured interviews. The data were analyzed by content analysis.

Findings: The content analysis indicated three main categories: the quality of the relationship, supervisee and supervisor characteristics that likely influence the relationship, and the outcomes of the relationship.

Implications for Research and Practice: Based on the findings of this study, the most obvious implication is that the supervisory relationship is one of the key components of supervision, and in order to improve the quality of this relationship, developmental needs and expectations of supervisees, as well as supervisors' own variables affecting the relationship, should be carefully taken into consideration by supervisors. We also hope that this attempt to explore the supervisory relationship in Turkey enterprises will encourage researchers for further studies, which will be intended to use different research designs that include collecting data at different sessions of supervision from different universities, thus indicating a way for supervisors to develop strong supervisory relationship with supervisees.

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Introduction

The supervisory relationship plays a pivotal role in clinical supervision (Bernard & Goodyear, 2004; Borders & Brown, 2005; Bordin, 1983). Research on clinical supervision has indicated that the supervisory relationship is one of the most important variables related to the effectiveness of supervision (Beinart, 2014; Nelson & Friedlander, 2001; Worthen & McNeill, 1996). Many researchers have claimed that a strong relationship, in which supervisees feel supported and safe, is essential for the personal and professional development of supervisees (Bernard & Goodyear, 2004; Campbell, 2000). In contrast, when supervisees feel unsupported and unsafe in weak relationships, they can lose self-confidence; be reluctant to engage in self-disclosure; and be unwilling to try new skills, techniques, and strategies (Ellis, 2010; Ladany, Hill, Corbett, & Nutt, 1996; Nelson & Friedlander, 2001). Therefore, identifying components of a strong supervisory relationship, along with factors related to such a relationship, is important for supervisors and researchers.

The supervisory relationship has become an important variable in the supervision literature since the studies of Bordin (e.g., 1979; 1983) in the beginning of the 1980s. Bordin (1983) conceptualized the supervisory relationship as a supervisory working alliance and highlighted the components of this alliance as goals, tasks, and emotional bond. Based on these components, a caring emotional bond between supervisee and supervisor is an inseparable part of a strong supervisory relationship. According to Bordin, establishing and strengthening the supervisory relationship is related to: a strong emotional bond, deciding and revising (if necessary) mutual supervisory goals during the supervisory relationship, and implementing the necessary tasks to achieve these supervisory goals. In pursuit of Bordin's studies regarding the components of the supervisory working alliance, later research has found that various factors affect the supervisory relationship. Ladany and Lehrman-Waterman (1999) reported that the frequency of supervisor's self-disclosure was positively related to the supervision working alliance. Magnuson, Wilcoxon, and Norem (2000) pointed out that supervisor's sensitivity to the supervisee's developmental level had a positive impact on the supervisory relationship. Similarly, Ramos-Sanchez et al. (2002) found a positive correlation between developmental levels of supervisees and the supervision working alliance. Ladany et al. (2012) defined effective supervisors as ones who support the autonomy of supervisees, develop the supervisory relationship, and facilitate discussion in supervision.

Researchers have also focused on the effects of the supervisory relationship. For example, Hutt, Scott, and King (1983) found that supervisees who defined their supervisory relationship as negative reported higher levels of intense negative emotions, such as anxiety, frustration, and anger. These emotions resulted in mistrust and disrespect in the supervisory relationship, reluctance to engage in honest self-disclosure in supervision, and less satisfaction in meeting developmental needs. Additionally, Horrocks and Smaby (2006) found that the supervision working alliance also predicted the personal and skill development of supervisees. In conclusion, research showed that the supervisory relationship explains much in defining supervision outcomes.

In Turkey, counselors are predominantly trained in four-year undergraduate programs, culminating in a bachelor's degree. Turkish universities also offer graduate programs at the master's and doctoral levels. Presently, there are 60 bachelor's programs (Atlas of Undergraduate Programs, 2017), 21 master's programs, and 15 doctoral programs (Yesilyaprak, 2012) in Turkey. It can be stated that Turkey is one of the few countries that trains counselors through both undergraduate and graduate counselor-education programs. Undergraduate counselor education is especially important in Turkey, since a bachelor's degree is enough to be employed in public and private institutions; the number of the counselors awarded a bachelor's degree each year is larger than those at other levels. In other words, practitioner counselors are mainly trained at the undergraduate level. For this reason, the supervision process during undergraduate education and practicum experiences is crucial.

Most counselor trainees receive supervision for the first time at the undergraduate level in Turkey before they practice or are employed. Since there is no obligatory internship for Turkish counselors, the supervision they receive during their undergraduate education could be the only formal supervision they receive before or during their practice, unless they enroll in a graduate program or some kind of further in-service training. Hence, many researchers have focused on clinical supervision in Turkey, since the role of supervision with undergraduate trainees is critical to training counselors in Turkey. Research related to supervision in Turkey includes such topics as supervision models (Koc, 2013; Meydan, 2015), supervision methods (Aladag & Bektas, 2009; Buyukgoze-Kavas, 2011; Denizli, Aladag, Bektas, Cihangir-Cankaya, & Ozeke-Kocabas, 2009), the effects of supervision (Aladag & Bektas, 2009; Buyukgoze-Kavas, 2011; Denizli et al., 2009; Koc, 2013; Meydan, 2015), and experiences of undergraduate counselor trainees (Aladag, 2014; Aladag & Kemer, 2016; Ilhan, Rahat, & Yontem, 2015; Ulker-Tumlu, Balkaya-Cetin, & Kurtyilmaz, 2015).

In our review, we found that some studies focusing on different aspects of supervision included findings related to the supervisory relationship in Turkey. For example, Aladag (2014) reported that first-time supervisees needed more positive and supportive supervisory relationships than advanced supervisees, and negative supervisor behaviors hindered the supervisory relationship at both the undergraduate and graduate levels. Ilhan et al. (2015) pointed out that positive and sincere supervisor behaviors facilitated the supervisory relationship according to undergraduate supervisees. Aladag and Kemer (2016) indicated that undergraduate supervisees defined the supervisory relationship as intimate, warm, sincere, and trustworthy. Briefly, these findings indicated that the supervisory relationship has an important role for Turkish undergraduate supervisees, particularly those who receive supervision for the first time.

Because research is limited regarding supervisory relationships in undergraduate counselor education in Turkey, and the supervision relationship is one of the most important factors contributing to the outcome of supervision, the purpose of the present study was to examine Turkish undergraduate supervisees' views regarding the supervisory relationship. In this context, the research question was: What are undergraduate supervisees' views regarding the supervisory relationship?

Investigating the supervisory relationship with Turkish undergraduate supervisees would give clues to supervisors about the nature of their supervision relationship, especially with first-time supervisees at similar ages and experience levels. It is also believed that findings of the present study about the factors related to supervisory relationships for first-time supervisees in Turkey will encourage researchers to further study the supervisory relationship, which is one of the most important variables for supervision outcome.

Method

Research Design

A case study design was used in this study. Case study design is used to investigate a new phenomenon within its real-life context (Yin, 2003). The case investigated in this study was the views of undergraduate supervisees concerning the supervisory relationship in the Individual Counseling Practice course. Within the Individual Counseling Practice course, supervision was provided in groups. Supervisees were assigned to 6 supervisors and consequently to 6 supervision groups (13-15 supervisees per group) during the fall semester of the 2015-2016 academic year. Each supervisor divided their group of supervisees into two subgroups, which included 6-8 supervisees, and then carried out supervision sessions with these two small groups. Supervisees were expected to provide counseling for at least 10 sessions with clients throughout the semester and to present one counseling session in each supervision session. Supervisees audio- or video-recorded all counseling sessions and (prior to the supervision session) completed a session-report form. They were also required to transcribe 5 of the 10 sessions. Prior to the supervision, supervisors read the forms and transcripts and (if necessary) listened to or watched the recordings. The semester lasted for 14 weeks; supervisees met with their supervisors once per week, and every supervision session lasted for 5 academic hours. During the group supervision meetings, each supervisee received 15-20 minutes on average of individual attention, but all supervisees stayed in the supervision group during the supervision session, and supervisees were encouraged to discuss cases or give feedback to other supervisees.

Participants

Maximum variation sampling method and extreme case sampling method were preferred for participant selection (Patton, 1990). The pool of participants from which interviewees were selected included 84 undergraduate supervisees (71 female, 13 male) enrolled in the Individual Counseling Practice course in the guidance and counseling undergraduate program of a state university located in western Turkey, during the fall semester of the 2015-2016 academic year. First, maximum variation sampling method was used to gather data from undergraduate supervisees who were in supervisory relationships with separate supervisors, who have separate supervisory-relationship characteristics. This method increases the reliability of the results obtained from various cases (Yildirim & Simsek, 2013). Thus, researchers

ensured the variety of undergraduate supervisees' opinions in terms of the supervisory relationship. Nevertheless, extreme cases sampling method, which provides an opportunity to learn from intense examples of phenomena (Yildirim & Simsek, 2013), was also used to obtain data from undergraduate supervisees. Extreme cases sampling was utilized by researchers, since it can be claimed that a strong supervisory relationship is highly desired by supervisors and that supervisors naturally avoid establishing weak relationships with supervisees. Therefore, supervisees with strong relationships with their supervisors were expected to reveal more information about the nature of a desired supervisory relationship, whereas supervisees with weak supervisory relationships may reveal information about undesired elements of a supervisory relationship. Hence, supervisees evaluated the effectiveness of their supervision with the Turkish form of the Supervision Questionnaire-Short Form (SQ-SF; Denizli, 2010) at the end of the semester, so that researchers could identify extreme cases based on their evaluations.

Briefly, the SQ-SF is a 14-item scale consisting of three subscales, named *Technical Help, Support*, and *Usage of the Supervision Process*. The *Support* subscale of the SQ-SF focuses partly on the supervisory relationship. Hence, SQ-SF scores provided both evaluations of supervision outcome based on the supervisee's perception as well as some aspects of the quality of the supervisory relationship based on the supervisee's perception. Researchers chose to use SQ-SF since no other instruments could evaluate good or poor supervisory relationships for the time that the study was in action. Thus, SQ-SF scores were used to identify extreme cases of both effective and ineffective supervisee evaluations about supervision, also including a supportive supervisory relationship. Two supervisees were selected from each supervision group; the supervisee with the highest score and the supervisee with the lowest score within their groups. As a result, a total of 10 female and 2 male undergraduate supervisees participated in the study. Their consent to participate in the study was obtained with a written informed-consent form. In addition, supervisors were informed about the study, and their consent was obtained before the interviews. Age of supervisees ranged from 22 to 24, and the mean age was 23.08 (SD=.51). Their counseling experience ranged from 9 to 14 counseling sessions under supervision, and none of them had prior counseling or supervision experience. Demographic characteristics of the participants are presented in Table 1.

Table 1

Demographic Characteristics of the Participants

Participants	Gender	Age	Number of Clients	Counseling Experience (Number of Sessions)	Supervision Experience (Number of Sessions)
S1	Male	23	1	9	9
S2	Female	23	2	10	9
S3	Female	23	1	10	10
S4	Female	22	1	11	11
S5	Male	23	1	12	12
S6	Female	24	1	14	14
S7	Female	23	1	11	10
S8	Female	23	1	12	12
S9	Female	23	2	11	11
S10	Female	24	2	14	14
S11	Female	23	1	11	11
S12	Female	23	1	11	11

Research Instruments and Procedures

The data were collected through semi-structured interviews. Following Patton's (1990) recommendations, we reviewed the existing supervision literature to create a question pool. The questions were evaluated by three experts who had doctoral degrees in counseling and were experienced in qualitative research methods. The researchers revised the questions on the basis of the experts' feedback. The interview form included questions such as "What do you think about the quality of the supervisory relationship with your supervisor?", "Could you mention the factors that contributed to or hindered your supervisory relationship? Could you give me some specific examples?", "In your opinion, what was the most effective/ineffective part of your supervision, and how did this affect your supervisory relationship?", "If you could define your supervisory relationship with only one word, which word would you choose? Why?", "What recommendations would you make for your supervisor for his/her future supervisees?"

Data Analysis

The data were analyzed by using content analysis. Following Schreier's (2014) recommendations, the specific steps used in this study are presented below.

Data preparation. All interviews were conducted by one of the authors, who had prior experience in qualitative research. Each interview was video recorded and lasted approximately 30-40 minutes. Subsequently, all interviews were transcribed with the interview questions asked by the researcher, and transcripts were identified with codes (e.g., "S1, S2…S12").

Building a coding frame. A concept-driven way was combined with a data-driven way for building a coding frame. First, in accordance with the concept-driven way, the researcher created categories based on supervision literature and developmental supervision models (Loganbill, Hardy, & Delworth, 1982; Ronnestad & Skovholt, 2003; Stoltenberg, 1981). Second, transcripts were continuously read and themes were added by using the data-driven way. Third, categories were named, such as "quality of the relationship", "supervisee and supervisor characteristics that likely influence the relationship", and "the outcomes of the relationship"; themes and codes were also named, and specific examples regarding these themes and codes were found by the researchers for the sake of definition. Finally, all categories, themes, and codes were revised, and the coding frame was finalized by the researchers.

Segmentation. In this step, the data set was divided into meaningful data units by thematic criteria (Rustemeyer, 1992, as cited in Schreier, 2014). In other words, the researcher read the transcripts twice without interruption, paid attention to topic changes within the transcripts, and tried to provide the best fit between the data units and the coding frame.

Trial coding. The researchers, and an auditor with a doctoral degree in counseling and experience with supervision and qualitative research, independently coded the transcripts. They entered all codings into a coding sheet.

Evaluating and modifying the coding frame. The researchers and the auditor discussed their own codings via the coding sheet. Next, the coding frame was finalized for the main analysis.

Main analysis. According to the coding frame, the researchers coded all interviews without making any changes on the coding frame. Subsequently, the authors checked and discussed the results of coding (via data matrix) as to whether the coding was suitable for answering the research question of the study. They made revisions (if necessary) before finalizing the analysis.

Presenting the findings. After the categories, themes, and codes were decided as suitable for answering the research question of the study, representative quotations were selected from the transcripts. To ensure variance in the representative quotations, contradictory statements of supervisees were also included. Representative quotations were translated from Turkish to English. To prevent minor errors in representing the participants' views, a native speaker was asked to provide his/her views on the translated quotations.

Trustworthiness

Trustworthiness was ensured in this study with certain precautions, based on the interpretivist paradigm (Merriam, 1998). For credibility (internal validity), the researchers: a) used open-ended interview questions and semi-structured interviews for *in-depth data collection and prolonged engagement in each interview*; b) revised the interview form and coding frame after consulting with several researchers, who were experts in clinical supervision and qualitative research, as *expert opinion* precaution; c) conducted *peer review* in conceptual discussions; d) audio-recorded all interviews and

made detailed transcriptions, which were checked by undergraduate supervisees for *member checking* process; and e) used *researcher triangulation* to confirm the persuasiveness and consistency of the results. For transferability (external validity), the researchers used: a) *purposive sampling methods*, such as maximum variation sampling method and extreme cases sampling method, to determine both the typical events and the different characteristics among these events; b) detailed descriptions of supervisees' characteristics and the theoretical framework of the study, as *thick description* precaution; and c) *direct quotations* without making any comments. For dependability (internal reliability), researchers spent sufficient time in *in-depth data coding*, and expert feedback was sought out to ensure the consistency of the data coding. Lastly, for confirmability (external reliability), the researchers described the theoretical framework of the study, supervisees' characteristics, data collection process, data analysis, and results in detail.

Results

The content analysis of the study indicated three main categories: (a) the quality of the relationship, (b) supervisee and supervisor characteristics that likely influence the relationship, and (c) the outcomes of the relationship. The summary of categories, themes, codes, and frequencies of the study are presented in Table 2.

Table 2

Summary of Categories, Themes, Codes, and Frequencies

Categories, Themes, and Codes	Respondents
Quality of the relationship	
Strong	7
Weak	5
Supervisee and supervisor characteristics that likely influence the relationship	
Supervisee's characteristics	
Basic developmental needs	10
Intermediate developmental needs	3
Supervisor's characteristics	
Roles	2
Attitudes	3
Personal characteristics	11
Interventions	12
Feedback	11
Time management	8
The outcomes of the relationship	
Attitudes	6
Feelings	5

Note. N=12. Respondents indicate the number of cases.

The Quality of the Relationship

Two themes emerged that described the quality of the relationship. The supervisees who stated that they had developed a *strong* (*n*=7) supervisory relationship described their supervisor as warm, friendly, sincere, relaxed, supportive, secure, confrontational (when necessary), and instructive. One supervisee expressed his/her opinions this way: "What does my supervisor mean to me? For instance, while I was riding my bicycle, my father used to hold me… my supervisor might be him. I mean, my supervisor supported me while I was learning to ride a two-wheel bicycle."

Those who reported a *weak* (*n*=5) supervisory relationship described their supervisors as formal, distant, ineffective, insincere, disruptive, extremely instructive, hard, unstable, disappointing, and irritating. One of these supervisees pointed out that: "I define my supervision as a course… To me, it didn't mean anything to me except a course. Our relationship was irritating. I would never feel relaxed and peaceful in that relationship".

Supervisee and Supervisor Characteristics that Likely İnfluence the Relationship

Supervisee characteristics. Supervisee's developmental needs were readily classified as *basic* (*n*=10) and *intermediate* (*n*=3). *Basic developmental needs* were observed as: needing active listening and minimal encouragers from the supervisor, connecting the case to theoretical orientation, applying skills learned in counseling skills class, and presenting alternatives for the next counseling session. One supervisee expressed his/her needs with these statements:

> We used to have some problems, like what could I do at that point; I mean they were all related to guidance. ... In such situations, there was some distress. And there were also times in which we really looked for raw information in supervision for our next counseling session. I needed my supervisor's direct guidance when we were expected to do long readings and to internalize what we read.

Another supervisee expressed his/her opinions this way:

> During initial supervision sessions, s/he found our faulty sides and explained them to us so explicitly that s/he guided us substantially. I mean s/he always smoothed us over. Image it like a tree… I mean we grew by becoming greener and greener… s/he also provided us with academic knowledge in many issues. Here, I saw which theory was better than another, or which theory we could do better.

Some supervisees mentioned their *intermediate developmental needs*, such as determining professional orientation, providing personal development, examining professional proficiency, not being able to get guidance, and increasing self-awareness. One supervisee mentioned his/her needs like this:

> I expected to draw a professional pathway for myself in our relationship. I was a bit indecisive in that matter. Through our supervision sessions and supervisory relationship, I realized which path I should take, I could determine a clearer way for myself. It is a pleasing thing for me. Since it cleared the ambiguity, I could say it met my supervisory relationship expectations.

Supervisor characteristics. Under the supervisor characteristics, six codes emerged: (a) *roles* (*n*=2), (b) *attitudes* (*n*=3), (c) *personal characteristics* (*n*=11), (d) *interventions* (*n* =12), (e) *feedback* (*n*=11), and (f) *time management* (*n*=8). On the basis of supervisor's *roles* code, some supervisees had asked supervisors to take the consultant role. One supervisee said that: "Well, the things affecting our relationship were basically the respect s/he showed to us and that s/he saw us as his/her colleagues. S/he behaved like a consultant towards me. I felt good in this relationship."

The supervisees indicated that supervisors' *attitudes* towards supervision affected the relationship. In this sense, one supervisee mentioned that:

To begin with, s/he attended class vivaciously. S/he used to reflect his/her positive energy on us. S/he would behave more like a friend rather than just a supervisor…upon seeing these behaviors, I liked the supervision sessions more, and I liked this kind of relationship, since it was a different relationship. It was more sincere than a teacher-student relationship.

In terms of the *personal characteristics* code, a supervisor's dealing with supervisees as polite, relieving, caring, humorous, supportive/encouraging, sincere, understanding, soothing, fair, helpful, and respectful was among the factors that affect the relationship. One supervisee expressed his/her opinions on this code this way: "We had never done a counseling session before; of course, it was going to cause performance anxiety. S/he could have talked about our anxiety more. S/he was not soothing or relaxing enough."

Another supervisee mentioned that:

The things which strengthen the supervisory relationship between us might be his/her style of dealing with fears. For instance, in one week, I felt so bad and went to his/her office after I left the counseling session. S/he hugged me, which was really important for me. S/he was sincere, which strengthen our supervision relationship. I think sincerity might be the most important thing in the supervisory relationship.

Supervisees noted a variety of *interventions* used by supervisors. These included self-disclosure, asking exploratory questions, active listening, using of awareness-raising interventions and confrontations, examining session reports, listening/watching to session records, making use of role-playing techniques during supervision, suggesting books/articles, and structuring the supervision process. For example, one supervisee expressed that: "S/he shared examples with us from his/her own life and even from counseling sessions…also, in every case that we presented, s/he expressed his/her point of view about the case."

Another supervisee stated that:

S/he used supportive confrontations for our lacks. Because all of us had personal problems, and we used to reflect on them in counseling and the supervision relationship. S/he used to emphasize this point… It was kind of weird at the beginning of our relationship, but then I thought that our awareness in this sense

contributed to both the supervision relationship and the counseling process. S/he helped us with his/her confrontations.

Another code related to supervisor characteristics was found to be *feedback*. Following this code, the features of feedback that affected the relationship include adequacy and/or inadequacy, its style, the reinforcing/constructive features, its written and/or verbal form, being personal, or about session features of the feedback. One supervisee mentioned that: "S/he had little but personal observations about everybody; s/he gave feedback to all of us and they were really precious…s/he had a good sense of observation. I liked his/her feedback and reinforcements."

Another supervisee indicated his/her negative opinions regarding his/her supervisor's feedback this way:

> Well, I did not think that my supervisor cared about us that much. I did not even think that s/he listened to audio-recordings of counseling sessions, because s/he never gave feedback in this sense… Well, it left a bad impact on me and our relationship.

Time management was found to be the last code. In examination of this code, it is clear that equal amount of supervision time and more time for supervision were important for supervisees, and accessibility of the supervisor also affected the supervisory relationship. One supervisee suggested that:

> S/he might dedicate equal time to everybody. Some spoke too much. S/he couldn't manage the time well. Time could have been managed better… I had to express myself in less time. There were even times I couldn't express myself at all. It affected our relationship.

The Outcomes of the Relationship

Under this category, two themes emerged: (a) *attitudes* (*n*=6) and (b) *feelings* (*n*=5). It was ascertained that supervisors' attitudes affected supervisees' *attitudes* towards supervision. For example, supervisees mentioned that they had different attitudes towards supervision, such as reluctance, commitment, willingness, or regression. One supervisee expressed that:

> We couldn't get in return what we labored for, that probably influenced us negatively. I gradually started to become uninterested. I had started the supervision process with enthusiasm, but throughout the semester, I kind of lost it. It is like the enthusiasm in me cooled.

In terms of the *feelings* theme, supervisees mentioned that they had intense feelings based on the quality of the relationship, such as anger, self-confidence, comfort, (un)happiness, anxiety, satisfaction, injustice, admiration, and irritation. One supervisee indicated that: "In the beginning, s/he was very remote. I did really feel anger against the supervisor for some time."

Discussion, Conclusion and Recommendations

The purpose of the present study was to examine Turkish undergraduate supervisees' views regarding the supervisory relationship. The study findings show that supervisees' descriptions of the supervisory relationship generally fit the categories of strong or weak. Additionally, the relationship was impacted by supervisees' developmental needs as well as supervisor's attitudes, interventions, feedback, roles, personal characteristics, and time management. Moreover, the supervisory relationship had an intense effect on supervisees' attitudes and feelings towards supervision.

When the existing literature was reviewed in terms of supervisory relationship quality, most research claimed that a strong relationship strengthened the personal and professional development of supervisees (e.g. Ellis, 2010; Ladany et al., 2005; Nelson & Friedlander, 2001) and made significant contributions to the effectiveness of supervision (e.g. Nelson & Friedlander, 2001; Worthen & McNeill, 1996). In a study by Worthen and McNeill (1996), supervisees defined the satisfaction with supervision experiences according to their experiences within the supervisory relationship. For instance, supervisees reported that the supervision was effective when their supervisors were empathic, nonjudgmental, and encouraging. Similarly, in Ellis's (2010) study, some dos and don'ts related to supervision were identified. Ellis (2010) emphasized that establishing and maintaining a respectful and supportive supervisory relationship was the first step for fostering the professional development of the supervisees and supervision outcomes. Based on the findings of the present study and existing research, it is believed that quality of the supervisory relationship is one of the critical factors in achieving supervision outcomes.

The other key finding of this study was that supervisees' *developmental needs* were crucial factors affecting the supervisory relationship. In terms of developmental supervision models (Loganbill, Hardy, & Delworth, 1982; Ronnestad & Skovholt, 2003; Stoltenberg, 1981), it is known that beginning supervisees have different professional characteristics when compared to experienced supervisees. In other words, these models (Loganbill, Hardy, & Delworth, 1982; Ronnestad & Skovholt, 2003; Stoltenberg, 1981) indicate that supervisees' supervisory needs and expectations differ in accordance with their professional developmental level; beginning supervisees have more basic needs and expectations from supervision, whereas advanced supervisees have more advanced needs and expectations from supervision. In parallel with this information, the findings of this study show that most supervisees' specific *basic developmental needs* included needing active listening and minimal encouragers from the supervisor, connecting the case to theoretical orientation, applying skills learned in counseling skills classes, and presenting alternatives/solutions for the next counseling session. Other supervisees, despite have the same experience and educational level as the others, reported having *intermediate developmental needs*, such as determining the profession orientation, placing importance on personal development, understanding professional competence, and personal awareness; this situation can be attributed to individual differences among supervisees.

To sum up, our study also supported developmental supervision models (Loganbill, Hardy, & Delworth, 1982; Ronnestad & Skovholt, 2003; Stoltenberg, 1981); it indicates that supervisees who are newly exposed to counseling/helping interactions and the supervision process mainly seek direct instruction and structure. Regardless of the level of supervisees' developmental needs, it was found that meeting these needs within the supervisory relationship is a strengthening component for the supervisory relationship. A study by Frost (2004, as cited in Beinart, 2014) supports the findings of this study. Frost (2004, as cited in Beinart, 2014) found that unmet expectations about the supervision process and the supervisory relationship led supervisees to difficulties that were challenging to resolve in their supervisory relationships.

The literature makes it clear that beginning supervisees do not know what exactly to do regarding the counseling/therapy process (Loganbill, Hardy, & Delworth, 1982; Ronnestad & Skovholt, 2003; Stoltenberg, 1981; Worthington, 2006). For example, first-time supervisees expected their supervisors to be more instructive and directive (Ronnestad & Skovholt, 2003; Stoltenberg, 1981; Worthington, 2006), and perceived direct guidance and support as helpful (Jacobsen & Tanggard, 2009). However, as undergraduate supervisees gained more experience in supervision, the supervisee became a more active participant in the experience and was less reliant on the supervisor for instruction and direction (Aladag, 2014). In a general review of developmental supervision models, it is emphasized that supervisees' developmental levels should be taken into consideration when developing and sustaining the supervisory relationship (Borders & Brown, 2005; Loganbill et al., 1982; Magnuson et al., 2000; Ramos-Sanchez et. al., 2002).

In the present study, a relatively small group of the supervisees reported intermediate developmental supervision needs. These supervisees seemed to expect their supervisors to adopt a *consultant role.* Similarly, in the related literature, it is clear that supervisees who have intermediate developmental needs prominently want to become independent from their supervisors, and expect less instruction and structured supervision settings (Stoltenberg, 1981). Thus, these expectations are parallel with the consultant roles defined in the discrimination supervision model, where the supervisor guides less, mostly focuses on personal development, and adopts a more explorative supervisory relationship. Findings from our study suggested that the supervisees with intermediate developmental needs developed a stronger and more constructive supervisory relationship, which allowed the supervisors to adopt a consultant role. Our finding is consistent with Ronnestad and Skovholt (2003), who stated that counselors/therapists go through different professional developmental stages, although not necessarily in the same order. Although our findings indicated that many novice counselors had basic developmental needs, we suggest that supervisors should plan to also have supervisees who are ready for more advanced feedback. In brief, the findings of our study support the other research findings conducted on this topic: being aware of the developmental levels and expectations of supervisees plays an important role in empowering the supervisory relationship, which is a critical characteristic of an effective supervisor. Additionally, the findings

indicate that while working with novice supervisees, supervisors should not expect that all supervisees have the same developmental needs and expectations.

Moreover, supervisors' attitudes towards supervision, interventions, feedback, personal characteristics, and roles influenced the supervisory relationship. Among these variables, supervisor's personal characteristics, interventions, and feedback stood out. In the existing literature, developmental supervision models emphasize the significance of supervisors' personal and professional characteristics in developing and sustaining a high-quality supervisory relationship (Loganbill et al., 1982; Stoltenberg, 1981). For example, supervisors' support, openness, encouragement, acceptance, openness to criticism, respect, trust, empathy, open-mindedness, humor, reliability, ability to soothe, sensitivity, thoughtfulness, optimism, and sincerity all contributed to the strong relationship (Aladag, 2014; Buyukgoze-Kavas, 2011; Denizli et al., 2009; Ladany et al., 2013; Loganbill et al., 1982). Additionally, supervisors' support and openness, which were defined as supervisory relationship factors, predicted effectiveness of supervision (Lizzio, Wilson, & Que, 2013). In addition to these findings, it is reasonable to state that a supervisor's personal characteristics, as mentioned by supervisees, are also interpersonal relationship skills that are accepted as prerequisites to developing strong relationship (Campbell, 2000). Thus, it is thought that supervisors who possess effective interpersonal relationship skills would effectively relieve supervisees' anxieties and precipitate the improvement of their self-competencies.

Interventions were another critical variable that influence the supervisory relationship in this study. Supervisees reported that self-disclosure, asking exploratory questions, active listening, using awareness-raising interventions and confrontations, examining session reports, listening to/watching session records, making use of role-playing techniques during supervision, suggesting books/articles, and structuring the supervision process all positively affect the supervisory relationship. In this context, it can be inferred that supervisees expect empathic interventions from their supervisors that consider their developmental needs. Indeed, in the literature, Loganbill et al. (1982) categorized supervisory interventions broadly as facilitative, confrontational, conceptual, prescriptive, and catalytic. The researchers expressed that interventions based on the facilitative conditions—such as being sincere, respectful, and having unconditional acceptance and empathy, as defined by Rogers (1957/2007)—are necessary for the development of the supervisory relationship in the first supervision sessions; however, these conditions alone are not sufficient to sustain and improve the supervisory relationship. Loganbill et al. (1982) indicated that in order to improve the supervisory relationship, not only confrontational interventions but also other interventions should be employed, which in turn develop the supervisory relationship. Similarly, Borders et al. (1991) suggested using supportive interventions during the development of a supervisory relationship, and to integrate these interventions with collaborative skills over time.

Another variable affecting the supervisory relationship in this study was *feedback*. The supervisees reported that sufficient, constructive, supportive, verbal or written feedback influence the supervisory relationship positively, while insufficient and

inappropriate feedback have negative effect on the supervisory relationship. In the literature, parallel findings suggest that sufficient, supportive, and instructive feedback is of vital importance for supervisees (Buyukgoze-Kavas, 2011; Denizli et al., 2009; Worthington, 2006); and is generally the most important component of a supportive and trusting supervisory relationship (Hughes, 2012). Moreover, the quality of the supervisory relationship can be fostered or hindered by the accuracy of the supervisors' feedback (Karpenko & Gidycz, 2012). Campbell (2000) emphasized the critical significance of feedback in developing a high-quality supervisory relationship. In one study (Aladag, 2014), it was found that feedback was the most commonly-mentioned factor in a high-quality supervisory process for undergraduate supervisees. Within the developmental supervision models, it is known that supervisees who receive supervision for the first time might be more anxious and have a lower sense of self-competence (Loganbill et al., 1982; Ronnestad & Skovholt, 2003; Stoltenberg, 1981). Hence, it is quite understandable that such supervisees need more supportive feedback during the supervision process. In addition, another study finding that can be discussed within the code of feedback is *time management*. Within this code, supervisees indicated that they should receive longer periods of feedback and that each supervisee should receive an equal amount of feedback. This finding is consistent with the literature suggesting that sufficient time of feedback during supervision is crucial for supervisees who receive supervision for the first time (Aladag & Bektas, 2009; Meydan, 2015). In accordance with the findings of both the current study and the research findings in the literature, it can be inferred that feedback is an inseparable part of supervision, and adequate amounts of feedback have a direct effect on both the efficiency and the quality of supervision and the supervisory relationship.

The final category of this study was the *outcomes of supervisory relationship*. This category consisted of two themes: *attitudes* and *feelings* towards supervision. In a general overview of supervisees' attitudes and feelings towards supervision, it was discovered that these variables influence supervisees' motivation and willingness in supervision, based on the quality of the supervisory relationship. However, it was found that the quality of the supervisory relationship might result in experiencing intense feelings in supervisees, such as anger, rage, withdrawal, relief, joy, sadness, indignity, and admiration towards supervision or the supervisor. In the literature, studies were found that suggest that the supervisory relationship affects the supervisee's satisfaction (e.g. Ladany, Ellis, & Friedlander, 1999), feelings (e.g. Hutt et al., 1983), and personal and professional development (e.g. Horrocks & Smaby, 2006). According to Hutt et al. (1983), a negative supervisory relationship resulted in feeling intense negative emotions, such as anxiety, disappointment, and anger, and it prevented supervisees from disclosing themselves fully in supervision, hindering their professional growth. Aladag (2014) asserted that supervisors who were not supportive and unable to raise their awareness of the needs of the supervisory process might lead to their supervisees experiencing a sense of worthlessness, anxiety, and sadness, which in turn negatively effects supervisory satisfaction. In this sense, a weak supervisory relationship may undermine the emotional bond that is one of the key components of the supervisory relationship (Bordin, 1983). In terms of developmental supervision

models (Ronnestad & Skovholt, 2003; Stoltenberg, 1981), it is emphasized that the supervisees who receive supervision for the first time may experience intense feelings within the supervisory relationship; this intensity is likely correlated with their novice level of development.

Limitations

Although this study is one of the initial studies in supervision literature in Turkey, it has some limitations. Researchers (Beinart, 2014; Holloway, 1995) indicate that the supervisory relationship is a kind of interpersonal relationship, and can be developed in an ongoing supervision process. For example, Holloway (1995) described the supervisory relationship with three phases: the early phase, the mature phase, and the termination phase. This study is limited because the data regarding the quality of the supervisory relationship, the affective variables on the supervisory relationship, and its effects on supervisees were collected after the termination of the supervision process, and do not provide information about different phases of supervision. Moreover, some researchers suggested focusing on both supervisors' and supervisees' perspectives, to comprehend the full supervisory relationship (Beinart, 2014; Nelson, Barnes, Evans, & Triggiano, 2008). However, data in our study regarding the supervisory relationship were solely collected from the supervisees. Another limitation of the study was related to the supervision method that was used in the study. Participants were supervised in a group supervision setting, including peers, and they interacted with each other during supervision sessions. The effect of the inter-supervisee interaction on supervisees' relationship with supervisors is unclear. Moreover, this study was conducted with supervisees who received supervision only at one university. In terms of data analysis and trustworthiness of the study, collecting data from one university limits the transferability (external validity) of the results.

Implications for Research and Practice

When the findings of this study are considered, of the effects of the supervisory relationship on supervisees' personal and professional development, the most obvious implication is that the supervisory relationship is one of the key components of supervision, and in order to improve the quality of this relationship, variables affecting the relationship should be carefully taken into consideration by supervisors. In other words, we believed that supervisors should be pay attention to developing strong supervisory relationships with undergraduate supervisees. Thus, the developmental needs and expectations of supervisees should be taken into consideration for establishing a strong supervisory relationship, as previously proposed by developmental supervision models (Loganbill, Hardy, & Delworth, 1982; Ronnestad & Skovholt, 2003; Stoltenberg, 1981). It is also expected that our findings will illuminate a path for supervisors when supervising first-time supervisees with beginning developmental supervision needs, on how to establish a strong supervisory relationship with them.

Furthermore, the findings of the study reveal that supervisor variables, such as attitudes, interventions, feedback, roles, personal characteristics, and time management, have effects on the supervisory relationship, and it is thought that supervisors should pay attention to their own variables affecting the relationship. Keeping in mind undergraduate supervisees' professional developmental characteristics and the effects of supervisor variables on the relationship, supervisors should engage in initiator and facilitator roles to establish a supervisory relationship with undergraduate supervisees. Unfortunately, few research findings exist that investigate supervisory relationships in Turkey. Therefore, further explorations are needed of the variables affecting the supervisory relationship. Finally, we hope that this attempt to explore the supervisory relationship and the variables affecting this relationship in Turkey will encourage other researchers to conduct further studies that will use different research designs, which include collecting data at different sessions of supervision from different universities, and to include supervisors in the study process, showing a clearer way for supervisors to develop strong supervisory relationships with undergraduate supervisees.

References

Aladag, M. (2014). Psikolojik danisman egitiminin farkli duzeylerinde bireyle psikolojik danisma uygulamasi supervizyonunda kritik olaylar [Critical incidents in individual counseling practicum supervision across different levels of counselor education]. *Ege Education Journal, 15*(2), 428–475.

Aladag, M., & Kemer, G. (2016). *Psikolojik danisman egitiminde bireyle psikolojik danisma uygulamasi ve supervizyonunun incelenmesi [The examination of individual counseling practicum and its supervision in counselor education].* Izmir, Turkey: Ege University, Directorate of Scientific Research Projects.

Atlas of Undergraduate Programs. (2017). *Rehberlik ve psikolojik danismanlik programi bulunan tum universiteler [Universities where have guidance and counseling undergraduate programs].* Retrieved July 12, 2017, from https://yokatlas.yok.gov.tr/lisans-bolum.php?b=10172

Beinart, H. (2014). Building and sustaining the supervisory relationship. In C. E. Watkins & D. L. Milne (Eds.), *Wiley international handbook of clinical supervision* (p. 257-281), doi: 10.1002/9781118846363.ch11

Bernard, J. M., & Goodyear, R. K. (2004). *Fundamentals of clinical supervision.* MA: Pearson.

Borders, L. D., Bernard, J. M., Dye, H. A., Fong, M. L., Henderson, P., & Nance, D. W. (1991). Curriculum guide for training counseling supervisors: Rationale, development, and implementation. *Counselor Education and Supervision, 31*(1), 61-78, doi: 10.1002/j.1556-6978.1991.tb00371.x

Borders, L. D., & Brown, L. L. (2005). *The new handbook of counseling supervision.* NY: Lawrence Erlbaum.

Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research & Practice*, *16*(3), 252-260, doi: 10.1037/h0085885

Bordin, E. S. (1983). A working alliance based model of supervision. *The Counseling Psychologist, 11*(1), 35- 4,. doi: 10.1177/0011000083111007

Buyukgoze-Kavas, A. (2011). Bireysel ve grupla psikolojik danisma uygulamalarina yonelik bir degerlendirme [An evaluation regarding individual and group counseling practicums]. *Turkish Educational Sciences Journal, 9*(2), 411-432.

Campbell, J. M. (2000). *Becoming an effective supervisor: A workbook for counselor and psychotherapist*. USA: Routledge.

Denizli, S. (2010). *Danisanlarin algiladiklari terapotik calisma uyumu ve oturum etkisi duzeylerinin bazi degiskenlere gore yordanmasi*: *Ege Universitesi ornegi* [Prediction of client perceived working alliance and session impact levels regarding some variables: The example of Ege University] (Unpublished doctoral dissertation). Ege University, İzmir, Turkey.

Denizli, S., Aladag, M., Bektas, D. Y., Cihangir-Cankaya, Z., & Ozeke Kocabas, E. (2009, October). *Psikolojik danisman egitiminde bireyle psikolojik danisma uygulamasi ve supervizyonu: Ege Universitesi ornegi* [Individual counseling practicum and supervision in counselor education: The example of Ege University]. Paper presented at the annual National Conference of Guidance and Counseling, Adana, Turkey.

Ellis, M. V. (2010). Bridging the science and practice of clinical supervision: Some discoveries, some misconceptions. *The Clinical Supervisor, 29*(1), 95-116, doi: 10.1080/07325221003741910

Holloway, E. L. (1995). *Clinical supervision: A systems approach*. Thousand Oaks, CA: Sage Publications.

Horrocks, S., & Smaby, M. H. (2006). The supervisory relationship: Its impact on trainee personal and skills development. *Compelling Perspectives on Counselling: VİSTAS*, 173-176.

Hughes, J. (2012). Practical aspects of supervision: All you ever wanted to know but were too afraid to ask. In I. Fleming & L. Steen (Eds.), *Supervision and clinical psychology: Theory, practice and perspectives* (p. 184–206). Hove, UK: Routledge.

Hutt, C. H., Scott, J., & King, M. (1983). A phenomenological study of supervisees' positive and negative experiences in supervision. *Psychotherapy: Theory, Research and Practice, 20*(1), 118, doi: 10.1037/h0088471

Ilhan, T., Rahat, E., & Yontem, M. K. (2015, October). *Psikolojik danisman adaylarinin supervizyon surecinde yasadiklari danisma kaygisina ve supervizyon egitimine yonelik deneyimlerinin incelenmesi [*Investigating the experiences of counselor candidates regarding counseling anxiety and supervision training in

supervision *process]*. Paper presented at the annual National Conference of Guidance and Counseling, Mersin, Turkey.

Jacobsen, C. H., & Tanggaard, L. (2009). Beginning therapists' experiences of what constitutes good and bad psychotherapy supervision: With a special focus on individual differences. *Nordic Psychology, 61*, 59-84, doi: 10.1027/1901-2276.61.4.59

Karpenko, V., & Gidycz, C. A. (2012). The supervisory relationship and the process of evaluation: Recommendations for supervisors. *The Clinical Supervisor, 31*(2), 138-158, doi: 10.1080/07325223.2013.730014

Koc, I. (2013). *Kisiler arasi sureci hatirlama teknigine dayali supervizyonun psikolojik danisman adaylarinin psikolojik danisma becerilerine, ozyeterlik ve kaygi duzeylerine etkisi* [The effect of supervision with interpersonal process recall on the counseling skills, self-efficacy and anxiety levels of counselor trainees*]* (Unpublished doctoral dissertation). Ege University, Izmir, Turkey.

Ladany, N., Ellis, M. V., & Friedlander, M. L. (1999). The supervisory working alliance, trainee self-efficacy, and satisfaction. *Journal of Counseling and Development, 77*(4), 447-455, doi: 10.1002/j.1556-6676.1999.tb02472.x

Ladany, N., Hill, C. E., Corbett, M. M., & Nutt, E. A. (1996). Nature, extent, and importance of what psychotherapy trainees do not disclose to their supervisors. *Journal of Counseling Psychology, 43*(1), 10-24, doi: 10.1037/0022-0167.43.1.10

Ladany, N., & Lehrman-Waterman, D. E. (1999). The content and frequency of supervisor self-disclosures and their relationship to supervisor style and the supervisory working alliance. *Counselor Education and Supervision, 38*(3), 143-160, doi: 10.1002/j.1556-6978.1999.tb00567.x

Ladany, N., Walker, J. A., & Melincoff, D. S. (2001). Supervisory style: Its relation to the supervisory working alliance and supervisor self-disclosure. *Counselor Education and Supervision, 40*(4), 263-27, doi: 10.1002/j.1556-6978.2001.tb01259.x

Loganbill, C., Hardy, E., & Delworth, U. (1982). Supervision: A conceptual model. *The Counseling Psychologist, 10*(1), 3-42, doi: 10.1177/0011000082101002

Lizzio, A., Wilson, K., & Que, J. (2009). Relationship dimensions in the professional supervision of psychology graduates: Supervisee perceptions of processes and outcome. *Studies in Continuing Education, 31*(2), 127-140, doi: 10.1080/01580370902927451

Magnuson, S., Wilcoxon, S. A., & Norem, K. (2000). A profile of lousy supervision: Experienced counselors' perspectives. *Counselor Education and Supervision, 39*(3), 189-202, doi: 10.1002/j.1556-6978.2000.tb01231.x

Merriam, S. B. (1998). *Qualitative research and case study applications in education. Revised and expanded from "case study research in education"*. San Francisco: Jossey-Bass Publishers.

Meydan, B. (2015). Bireyle psikolojik danisma uygulamasinda Mikro Beceri Supervizyon Modeli'nin etkililiginin incelenmesi [Examining the effectiveness of Microcounseling Supervision Model in individual counseling practice]. *Turkish Psychological Counseling and Guidance Journal, 5*(43), 55-68.

Nelson, M. L., Barnes, K. L., Evans, A. L., & Triggiano, P. J. (2008). Working with conflict in clinical supervision: Wise supervisors' perspectives. *Journal of Counseling Psychology*, *55*(2), 172-184, doi: 10.1037/0022-0167.55.2.172

Nelson, M. L., & Friedlander, M. L. (2001). A close look at conflictual supervisory relationships: The trainee's perspective. *Journal of Counseling Psychology, 48*(4), 384-395, doi: 10.1037/0022-0167.48.4.384

Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Sage Publictions, Inc.

Ramos-Sanchez, L., Esnil, E., Goodwin, A., Riggs, S., Touster, L. O., Wright, L. K., & Rodolfa, E. (2002). Negative supervisory events: Effects on supervision and supervisory alliance. *Professional Psychology: Research and Practice, 33*(2), 197-202, doi: 10.1037/0735-7028.33.2.197

Rogers, C. R. (2007). The necessary and sufficient conditions of therapeutic personality change. *Psychotherapy: Theory, Research, Practice, and Training, 44*(3), 240-248, doi: 10.1037/0033-3204.44.3.240

Ronnestad, M. H., & Skovholt. T. M. (2003). The journey of the counselor and therapist: research findings and perspectives on professional development. *Journal of Career Development, 30*(1), 5-44, doi: 10.1023/A:1025173508081

Schreier, M. (2014). Qualitative content analysis. In U. Flick (Eds.), *The Sage Handbook of Qualitative Data Analysis* (p. 170-183). Sage Publications. Retrieved November 25, 2017, from

http://www.ewipsy.fuberlin.de/einrichtungen/arbeitsbereiche/qualitative_sozial_bildungsforschung/Medien/58869_Flick__The_SAGE_HB_of_Qualitative_Data_Analysis_Chapter1_mapping-the-field.pdf

Stoltenberg, C. (1981). Approaching supervision from a developmental perspective: The counselor complexity model. *Journal of Counseling Psychology, 28*, 59–65, doi: 10.1037/0022-0167.28.1.59

Ulker-Tumlu, G., Balkaya-Cetin, A., & Kurtyilmaz, Y. (2015, October*). Psikolojik danisman adaylarinin bireyle psikolojik danisma oturumlarinin degerlendirilmesi [*Assessing individual counseling sessions of counselor candidates*]. Paper presented at the annual National Conference of Guidance and Counseling, Mersin, Turkey.

Yesilyaprak, B. (2012). The paradigm shift of vocational guidance and career counseling and its implications for Turkey: An evaluation from past to future. *Educational Sciences: Theory and Practice, 12*(1), 97–118.

Yildirim, A., & Simsek, H. (2013). *Sosyal bilimlerde nitel arastirma yontemleri* [Qualitative research methods in the social sciences]. Ankara, Turkey: Seckin Yayincilik.

Yin, R. K. (2003). *Case study research: Design and methods*. Thousand Oaks, CA: Sage Publications.

Worthen, V., & McNeill, B. W. (1996). A phenomenological investigation of good supervision events. *Journal of Counseling Psychology, 43*(1), 25-34, doi: 10.1037/0022-0167.43.1.25

Worthington, E. L. (2006). Changes in supervision as counselors and supervisors gain experience: A review. *Training and Education in Professional Psychology, 18*(3), 133-160, doi: 10.1037/0735-7028.18.3.189

Türkiye'de Lisans Düzeyinde Süpervizyon Alan Adayların Süpervizyon İlişkisine Yönelik Görüşleri

Atıf:

Özet

Problem Durumu: Nitelikli süpervizyon ilişkisi etkili bir süpervizyon süreci yürütülmesinde kritik öneme sahiptir. Süpervizyon alanyazını incelendiğinde, süpervizyon ilişkisinin süpervizyonun etkililiği üzerinde önemli bir rolü olduğu görülmektedir. Pek çok araştırmacı nitelikli süpervizyon ilişkisinin süpervizyon alan adayların kişisel ve profesyonel gelişiminde temel bir rolü olduğunu belirtmektedir. Bu nedenlerle, nitelikli süpervizyon ilişkisinin bileşenlerini ve süpervizyon ilişkisinin kurulmasında ve geliştirilmesinde hangi faktörlerin rol oynadığını belirlemek önem taşımaktadır. Yurtdışındaki süpervizyon ilişkisine dair alanyazın incelendiğinde, etkili süpervizyon sürecinde süpervizyon ilişkisinin rolünü ve önemini incelemeye, süpervizyon ilişkisini etkileyen faktörleri belirlemeye ve süpervizyon ilişkisinin etkilediği boyutları ortaya çıkarmaya yönelik pek çok araştırma yapıldığı görülmektedir. Bu araştırmaların sonuçları, etkili süpervizyonun önemli bileşenlerinden birinin süpervizyon ilişkisi olduğunu; süpervizyon alan adayın gelişimsel düzeyinin, bilişsel yapısının, bağlanma stillerinin ve kaygısının ve süpervizörün kaygısının, bağlanma stillerinin, kişisel özelliklerinin ve müdahalelerinin süpervizyon ilişkisinin kurulmasını ve geliştirilmesini etkilediğini göstermektedir. Bununla birlikte, süpervizyon ilişkisinin süpervizyon alan adayların

süpervizyona yönelik duyguları, tutumları, kişisel ve mesleki gelişimleri, beceri kazanımları ve süpervizyon memnuniyetleri üzerinde önemli bir rol oynadığı görülmektedir. Türkiye'de alanyazın incelendiğinde ise süpervizyon modelleri, süpervizyon yöntem ve teknikleri, süpervizor özellikleri ve süpervizor geribildirimi, süpervizyonun psikolojik danışma becerilerine ve özyeterliğine etkisi, lisans düzeyinde süpervizyon alan adayların süpervizyon yaşantıları, etkili süpervizyon uygulamaları ve akran süpervizyonu gibi konularda yapılan araştırmaların son yıllarda artış gösterdiği dikkat çekmektedir. Bu araştırmaların sonuçları incelendiğinde ise süpervizyon ilişkisine dair bulguları olan araştırmalar olduğu görülmüş; ancak, süpervizyon ilişkisini doğrudan inceleyen bir araştırmaya rastlanmamıştır.

Araştırmanın Amacı: Alanyazın incelendiğinde, Türkiye'de süpervizyon konusunda yapılan araştırmalar son yıllarda artış gösterse de hala sınırlı sayıda olduğu söylenebilir. Bununla birlikte, etkili süpervizyonun önemli bileşenlerinden biri kabul edilen süpervizyon ilişkisi konusunun henüz keşfedilmeyi bekleyen bir alan olduğu görülmektedir. Bu bağlamda, bu araştırmanın amacı Türkiye'de lisans düzeyinde süpervizyon alan adayların süpervizyon ilişkisine yönelik görüşlerini incelemektir.

Araştırmanın Yöntemi: Bu araştırmada nitel araştırma desenlerinden durum çalışması kullanılmıştır. Araştırma, 2015-2016 öğretim yılı güz döneminde Türkiye'nin batısında bulunan bir üniversitenin Eğitim Fakültesi Rehberlik ve Psikolojik Danışmanlık lisans programında Bireyle Psikolojik Danışma Uygulaması dersini alan 84 (71 kadın, 13 erkek) kişi arasından maksimum çeşitlilik örneklemesi ve aykırı aşırı durum örneklemesi yöntemleri kullanılarak seçilen 12 süpervizyon alan aday (10 kadın, 2 erkek) ile gerçekleştirilmiştir. Adayların Bireyle Psikolojik Danışma Uygulaması dersinde süpervizörleriyle kurdukları ilişkiye yönelik görüşlerinin elde edilmesi amacıyla, araştırmacılar tarafından hazırlanan yarı yapılandırılmış bireysel görüşme formu kullanılmıştır. Araştırmanın katılımcısı olarak belirlenen 12 aday araştırmanın amacına ve veri toplama sürecine ilişkin araştırmacılar tarafından bilgilendirilmiştir. Görüşmeler başlamadan önce adayların ve süpervizörlerinin yazılı onayları bilgilendirilmiş onay formu kullanılarak alınmıştır. Görüşmeler 30-40 dakika sürmüştür. Görüşmeler sırasında görüntü kayıt aracı kullanılmıştır. Araştırma kapsamında toplanan veriler içerik analizi aşamaları takip edilerek çözümlenmiştir.

Araştırmanın Bulguları: Araştırma verilerinin çözümlenmesi amacıyla yapılan içerik analizi sonucunda üç temaya ulaşılmıştır: a) süpervizyon ilişkisinin niteliği, b) süpervizyon ilişkisini etkileyen süpervizyon alan adaya ve süpervizore ilişkin özellikler ve c) süpervizyon ilişkisinin etkileri. Süpervizyon ilişkisinin niteliği teması güçlü ve zayıf olmak üzere iki koddan oluşmuştur. Süpervizyon ilişkisini etkileyen süpervizyon alan adaya ve süpervizöre ilişkin özellikler teması incelendiğinde, süpervizyon alan adayların temel mesleki gelişim ihtiyaçlarının ve ileri mesleki gelişim ihtiyaçlarının süpervizyon ilişkisini etkilediği görülmüştür. Temel mesleki gelişim ihtiyaçlarının süpervizyon alan adayların süpervizörün etkili dinlemesine, asgari düzeyde teşvik kullanmasına, kuramsal bilgiler ile vakalar arasında bag kurmasına, öğrenilen becerilerinin uygulanışını göstermesine ve bir sonraki psikolojik danışma oturumuna yönelik plan yapmasına ilişkin duydukları ihtiyaçlardan; ileri

mesleki gelişim ihtiyaçlarının ise profesyonel yönelimin belirlenmesi, kişisel gelişim sağlaması, kişisel farkındalığın artırılması gibi ihtiyaçlardan meydana geldiği görülmüştür. Bununla birlikte, süpervizörlerin olumlu tutumlarının, ihtiyaç duyulan müdahaleleri kullanmalarının, yeterli ve yapıcı geribildirimler vermelerinin, kibar, esprili, destekleyici, anlayışlı, yardımsever, saygılı olmak gibi kişisel özelliklere sahip olmalarının, gerektiğinde müşavir rolü üstlenmelerinin ve süpervizyon süresini etkili kullanabilmelerinin de süpervizyon ilişkisini etkilediği ortaya çıkmıştır. Son olarak, süpervizyon ilişkisinin süpervizyon alan adayın süpervizyona yönelik tutumunu ve süpervizyonda yaşadığı duyguları etkilediği bulunmuştur.

Araştırmanın Sonuçları ve Önerileri: Bu araştırmada Türkiye'de lisans düzeyinde süpervizyon alan adayların süpervizyon ilişkisine yönelik görüşleri incelenmiştir. Araştırma sonuçları, süpervizyon alan adayların süpervizyon ilişkisinin niteliğini güçlü ve zayıf olarak sınıfladıklarını; süpervizyon alan adayların gelişimsel düzeylerinin, süpervizörün süpervizyona yönelik tutumunun, süpervizyonda kullandığı müdahalelerin, geribildirimlerinin, kişisel özelliklerinin ve süpervizyon süresini etkili kullanıp kullanamamasının süpervizyon ilişkisini etkileyen faktörler olduğu ve süpervizyon ilişkisinin süpervizyon alan adayların süpervizyona yönelik tutumları ve duyguları üzerinde etkileri olduğunu göstermiştir. Bu sonuçlar göz önüne alındığında, güçlü süpervizyon ilişkisi kurulabilmesi ve geliştirilebilmesi için süpervizörlerin öncelikle süpervizyon alan adayların gelişimsel düzeylerinin ve süpervizyondan beklentilerinin farkında olmaları ve bu doğrultuda süpervizyon amaçlarını adayların gelişimsel düzeylerine uygun şekilde belirleyerek uygun müdahaleler kullanmaları önemli görülmektedir. Bununla birlikte, güçlü süpervizyon ilişkisi kurulabilmesi için süpervizörlerin süpervizyon alan adayların süpervizyondaki kaygılarını ele almalarının, etkili kişilerarası becerileri kullanmalarının ve yeterli geribildirim vermelerinin önemli olduğu görülmüştür. Bu araştırma Türkiye'de lisans düzeyinde süpervizyon alan adayların süpervizyon ilişkisine yönelik görüşlerinin incelendiği ilk araştırmalardan biri olmakla birlikte bazı sınırlılıkları bulunmaktadır. Bu araştırmada veriler süpervizyon süreci tamamlandıktan sonra sadece süpervizyon alan adaylardan toplanmıştır. Gelecek araştırmalarda süpervizyon sürecinin farklı oturumlarında ve süpervizörlerden de veri toplanarak farklı araştırma desenleri kullanılması önerilmektedir. Bununla birlikte, bu araştırma sadece tek bir üniversitede süpervizyon alan adaylarla gerçekleştirilmiştir. Araştırma sonuçlarının genellenebilirliğinin artırılması amacıyla ileride yürütülecek araştırmalarda farklı üniversitelerde süpervizyon alan adayların araştırmaya dâhil edilmesinin yararlı olacağı düşünülmektedir.

Anahtar Sözcükler: Psikolojik danışman eğitimi, klinik süpervizyon, süpervizyon süreci, psikolojik danışman adayı.

An Integrated Curriculum at an Islamic University: Perceptions of Students and Lecturers

Bambang SURYADI[1], Fika EKAYANTI[2], Euis AMALIA[3]

A R T I C L E I N F O	A B S T R A C T

Purpose: The aim of our study was to identify the perceptions of students and lecturers at Syarif Hidayatullah State Islamic University Jakarta (UIN Jakarta) regarding the concept of an integrated curriculum implemented at the university, differences in perceptions between the two groups, and problems encountered during the curriculum's implementation.

Methods: A descriptive quantitative research study was conducted with 670 students and 90 lecturers from 11 faculties at UIN Jakarta. The student samples consisted of 270 men and 400 women, while lecturer samples consisted of 44 men and 46 women. Data were collected via interviews and a perceptual questionnaire consisting of 54 items scored on a 4-point Likert scale. Data were analyzed with descriptive statistics, a *t* test, and confirmatory factor analysis.

Findings: Although both students and lecturers had positive perceptions of the concept of the integrated curriculum, the students' perceptions were more favorable than the lecturers'. Problems encountered during the implementation of the integrated curriculum included the absence of clear guidelines for implementing the integrated curriculum, the lack of lecturers' competencies to implement the integration in learning processes, the lack of specific nomenclature about the integration concept, and limited time allotted to learning Islamic studies in the natural sciences program.

Implications for Research and Practice: Few obstacles have hindered the successful implementation of the integrated curriculum throughout the faculties at UIN Jakarta. The findings have informed the development of a blueprint and clear guidelines for implementing an integrated curriculum that other Islamic institutions of higher education in Indonesia and other countries can use to deliver integrated studies.

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Introduction

A curriculum plays numerous important roles in any education system as a framework that states the goals, expectations, and means of not only supporting education but also cultural reproduction. According to Cushion and Jones (2012), a curriculum contributes to the formation of social identities and human values, including religion. In higher education, the focus of a curriculum is moreover the production of measurable outcomes of global competitiveness (Hall & Smyth, 2016) and globalization, the processes of which contribute to the complexities of social life and underscore the importance of values and ethics. In our research, the values and ethics that guide human behavior (Rennie, 2007) were also viewed to relate to religion, and integrating a curriculum with religion was thus conceived to play an important role in preparing students to live in today's complex global society. In our research context, Islamic higher education has integrated religion into the curricula, including for students of science.

Lecturers and students of science at Islamic universities engage in integrating Islam and science in their teaching and learning experiences. Despite nearly two centuries of dialogue between religion and science (Seng, 2006), differences in science and religion can generate conflict or conformity depending on people's stances from the two perspectives. According to Guessoum (2010), science and religion can inter-relate in four different ways: in conflict, in mutual independence, in dialogue, and in integration. Therefore, to understand the overlap and interaction of Islam and science, it is important to understand the differences between the concepts. By extension, curriculum integration merging science and religion becomes an important concept to understand in light of different perspectives on its implementation. According to Beane (2016), curriculum integration should not only affect the arrangement of lesson plans but also serve as a curriculum design that enhances the possibility of personal and social interactions related to significant topics and problems. Therefore, to empower lecturers and students to achieve the goals of an integrated curriculum, it is important to understand their perspectives on its conceptualization and implementation.

Among the leading Islamic institutions of higher education in Indonesia representing curriculum integration, Syarif Hidayatullah State Islamic University Jakarta (UIN Jakarta), formerly known as the State Institute of Islamic Studies (IAIN), once focused solely on Islamic studies. Since 2002, however, UIN Jakarta has transformed due to the unprecedented increase in enrollment by international students, particularly from Malaysia, Thailand, Somalia, East Timor, South Africa, and Singapore (Rodha & Suryadi, 2010). As a flagship school of Islamic higher institutions, UIN Jakarta has thus become an outstanding choice for international students, particularly given its implementation of an integrated curriculum.

According to Boyd (2015), an *integrated curriculum* is a curriculum that connects different areas of study by cutting across lines of subject content and by emphasizing unifying concepts. Recently, Beane (2016) has shown that curriculum integration also involves applying knowledge to questions and concerns with personal and social significance. With its emphasis on participatory planning, contextual knowledge, real-

life issues, and unified organization, curriculum integration provides diverse students with broad access to knowledge and thus affords more of them with opportunities to achieve success.

According to Drake and Burns (2004), an integrated curriculum can follow four approaches: fusion, multidisciplinarity, interdisciplinarity, and transdisciplinarity. First, the fusion approach involves infusing an external element or external elements into a pre-existing curriculum. The infusion of a content area, thinking skills, or artistic technique, for example, would mean its inclusion in the content of every course or class. Second, by contrast, the multidisciplinary approach is additive, not integrative; the disciplinary perspective does not change but is merely contrasted, often in team-taught courses in which faculty provide serial lectures. Third, the interdisciplinary approach involves the gathering of students and instructors to analyze differences in disciplinary approaches to solving problems and results in new, more comprehensive views than allowed by the vision of any one field. Fourth and finally, the transdisciplinary approach provides holistic schemes that subordinate disciplines in order to view the dynamics of the whole system (i.e., place-based education).

At UIN Jakarta, the interdisciplinary approach was applied given its primary concern for common concepts and skills across the programs of study and branches of knowledge. The integration of Islamic studies and sciences has been identified in the stated vision of the university and further elaborated in its mission since 2002. The university aims to be a world-class institution excelling in the integration of knowledge, Islamic teachings, and Indonesian values. To that end, it seeks to implement relevant, high-quality programs of higher education in order to cultivate knowledge, social transformation, and the improvement of national competitiveness and to activate higher education according to a solid structure with a strong, accountable organizational culture full of integrity (UIN Jakarta, 2012).

Indonesia currently has 55 state institutions of Islamic higher education, including 11 universities, 25 institutes, and 19 state higher schools of Islamic studies (MORA, 2015). Like UIN Jakarta, other institutions of higher education have visions and missions for knowledge integration; however, unlike UIN Jakarta, each institution has applied specific concepts to the integration of knowledge. UIN Sunan Kali Jaga in Yogyakarta, for instance, interconnects the scientific method with Islamic sciences, while UIN Gunung Jati in Bandung, West Java, has introduced the concept of revealed knowledge in guiding scientific study. By contrast, UIN Maulana Malik Ibrahim in Malang, East Java, has introduced the concept of the science tree, while UIN Sunan Ampel in Surabaya, East Java, has introduced the concept of twin towers of knowledge (Azra, 2005).

The shift of IAIN to UIN has affected the public's estimation of studying at UIN Jakarta, and according to Suryadi (2011), the concept of the curriculum integration at the university has neither been a point of merit nor the chief reason for students to enroll there. In Suryadi's (2011) study with 265 students, only 26.6% reported choosing UIN Jakarta because it integrated religion and the natural sciences. That same year, Amalia (2011) demonstrated that the integrated curriculum has not been fully implemented in many sharia-cum-economics programs at Islamic institutions of

higher education in Indonesia despite that the sharia-guided financial industry urgently needs human resources with competencies in integrative paradigms.

The transformation of IAIN to UIN Jakarta has taken nearly one and a half decades. Its emphasis during 2012–2016 was to strengthen its internal capacity by empowering and strengthening the institution's character, its research culture, and its framework for integrating religion with the sciences. By 2026, UIN Jakarta aims to achieve global recognition by fulfilling all criteria of world-class universities (UIN Jakarta, 2012). To achieve that goal, UIN Jakarta needs to highlight its uniqueness, particularly its implementation of an integrated curriculum.

Although the implementation of an integrated curriculum at UIN Jakarta has continued since 2002, no study has identified the perceptions of university students and lecturers about the concept or its implementation. For the purposes of our study, *integrated curriculum* is operationally defined as a curricular structure and its content that encompasses the knowledge, skills, and attitudes that reflect the integration of Islamic studies and sciences in all subjects and in all faculties, especially at UIN Jakarta. In the study, the following research questions were addressed:

1. What are students' perceptions of the integrated curriculum at UIN Jakarta?
2. What are lecturers' perceptions of the integrated curriculum at UIN Jakarta?
3. What are the differences, if any, between students and lecturers' perceptions of the integrated curriculum at UIN Jakarta?
4. What problems were encountered during the implementation of the integrated curriculum at UIN Jakarta?
5. Does UIN Jakarta's strategic plan include a process to better implement an integrated curriculum in the future?

The findings of the study can contribute to the implementation of integrated curricula at other Islamic institutions of higher education, especially in Indonesia and other Muslim countries seeking to implement integrated curricula. At the same time, because UIN Jakarta will face additional challenges in the future, the findings can also assist UIN Jakarta and other Islamic institutions of higher education to anticipate those challenges.

Methods

Research Design

A descriptive quantitative research design was applied in the study. The chief purpose of the design was to better define opinions, attitudes, and behaviors held by a group of people on a given subject. The key to any descriptive study is measuring and recording variables accurately (Mitchell & Jolly, 2010). The research design was applied in accordance with the aim of the study: to describe students' and lecturers' perceptions of the implementation of an integrated curriculum.

Research Sample

A total of 670 students and 90 lecturers from 11 faculties at UIN Jakarta participated in the study. The samples were designed and determined using a nonprobability sampling technique (i.e., purposive sampling technique). The faculties represented

were Islamic studies, the social sciences, and the natural sciences. Whereas 400 students (59.7%) were women and 270 (40.2%) were men, all aged 20–25 years, 44 (48.8%) lecturers were men and 46 (51.1%) were women, all aged 36–40 years. In terms of teaching experience, 39 (43.3%) lecturers had 5–10 years of teaching experience, 28 (31.3%) had less than 5 years, 16 (17.7%) had 11–15 years, five had 16–20 years, and two (2.2%) had more than 20 years of teaching experience.

Instruments and Procedures

A perceptual questionnaire (PQ) was developed to collect data via 54 items scored on a 4-point Likert scale (1 = *strongly disagree*, 4 = *strongly agree*). The perception scale had two subscales—integrated curriculum and curriculum structure—determined based on a review of literature related to integrated curricula. The integrated curriculum subscale was divided into five dimensions—nomenclature, ontology, epistemology, axiology, and distinction of integration—with a total of 25 items. The curriculum structure subscale was divided into six dimensions—social attitudes, knowledge, skills, study course, spiritual attitudes, and time allocation—with a total of 29 items. The blueprint of the PQ for students and lecturers is shown in Table 1.

Table 1

Blueprint of the Perceptual Questionnaire for Students and Lecturers

Dimension	Indicator	Item (students)	Item (lecturers)
Integrated curriculum	Nomenclature of the integration model	4	4
	Philosophical indicators of integration:		
	a. Ontology	4	4
	b. Epistemology	5	5
	c. Axiology	6	6
	d. Distinction of integration	6	6
Curriculum structure	Competencies:		
	a. Spiritual attitudes	3	3
	b. Social attitudes	6	6
	c. Knowledge	5	5
	d. Skills	5	5
	e. Coursework	6	6
	f. Time allocation	4	4
	Total	54	54

In addition to the PQ, interviews were conducted with 22 students, 11 lecturers, and prominent figures specializing in Islamic institutions of higher education. The purpose of the interviews was to obtain in-depth information related to the concept of integrated curriculum and its implementation. Interview guidelines reflecting the dimensions of the subscales of the PQ was used during interviews.

The research procedure began with preparation, during which the research proposal, the problem statement, and variables were formulated. Subsequently, the

results of a literature review conducted to explore theories related to the study informed the development of a research framework and instruments. During data collection, the PQ was administered to 677 students and 115 lecturers in all faculties at UIN Jakarta; the questionnaire return rate for students was 99% and for lecturers was 78%. Last, data analysis, including coding, screening, and analysis, was performed.

Validity and Reliability

The construct validity of the scale was tested with confirmatory factor analysis using Lisrel 8.80, which was also used to gauge the validity of the two subscales of the PQ. Because results revealed that using a single-factor model was unfit (chi-square = 22.47, *df* = 2, *p* = .00001, RMSEA = 0.124), the model was modified by excluding inter-related items, which ensured its fitness (chi-square = 0.07, *df* = 1, *p* = .78809, RMSEA= 0.000) and allowed the acceptance of the model with a unidimensional factor. Last, the examination of the internal consistency of the subscales returned Cronbach's alpha coefficients of 0.85 for the integrated curriculum subscale and 0.86 for the curriculum structure subscale.

Data Analysis

Descriptive statistics (i.e., frequency, percentage, mean, and standard deviation) were used to describe respondents' demographic data and perceptions of the concept of the integrated curriculum. To analyze differences in perceptions between the students and lecturers, a *t* test was applied using the Statistical Package for the Social Sciences version 17. Qualitative data obtained from interviews were analyzed via content analysis, which involved organizing, quantifying, and explaining the data (Cohen, Manion, & Morrison, 2007).

Results

Students' Perceptions

The findings indicated that students generally have a positive perception of the integrated curriculum at UIN Jakarta (Table 2).

Table 2

Distribution of Students' Scores for Perceptions of the Concept of the Integrated Curriculum

Dimension	Category	Score	Frequency	%
Nomenclature	High	9–12	248	37.0%
	Low	5–8	422	62.9%
	Total		670	100.0%
Ontology	High	6–8	490	73.1%
	Low	2–5	180	26.8%
	Total		670	100.0%
Epistemology	High	12–16	395	58.9%
	Low	6–11	275	41.0%
	Total		670	100.0%
Axiology	High	19–24	219	32.6%
	Low	7–18	457	68.2%
	Total		670	100.0%
Distinction of integration	High	18–24	403	60.1%
	Low	8–17	267	39.8%
	Total		670	100%

Table 2 shows that students perceived three of the five dimensions of the integrated curriculum (i.e., ontological, epistemological, and distinction of integration) to be high ($X \geq M$) and two (i.e., nomenclature and axiological) to be low ($X < M$). The distribution of students' scores for their perceptions appears in Table 3.

Table 3

Distribution of Students' Scores for Perceptions of the Structure of the Integrated Curriculum

Dimension	Category	Score	Frequency	%
Spiritual attitudes	High	9–12	392	58.5%
	Low	4–8	278	41.4%
	Total		670	100.0%
Social attitudes	High	20–24	320	47.7%
	Low	11–19	350	52.2%
	Total		670	100.0%
Knowledge	High	16–20	258	38.5%
	Low	8–15	412	61.4%
	Total		670	100.0%
Skills	High	13–16	208	31.0%
	Low	7–12	462	68.9%
	Total		670	100.0%
Coursework	High	16–20	235	35.0%
	Low	7–15	435	64.9%
	Total		670	100.0%
Time allocation	High	6–8	479	71.4%
	Low	2–5	191	28.5%
	Total		670	100.0%

Table 3 reveals that students perceived four of the six dimensions of the curriculum structure (i.e., social attitudes, knowledge, skills, and coursework) at UIN Jakarta to be low ($X < M$) and the other two dimensions (i.e., spiritual attitudes and time allocation) to be high ($X \geq M$).

In addition to quantitative data, qualitative data from interviews were also gathered, as represented by the following two comments of students:

> [I] decided to study at UIN Jakarta because the university offers not only religious studies but also general studies as reflected in the curriculum structure. (student interview, May 8, 2014)

> [I] feel that the implementation of the integrated curriculum will certainly produce competent graduates with a balanced comprehension of knowledge from both Islamic studies and general studies. (student interview, May 20, 2014)

Such comments suggest that students consider the concept of the integrated curriculum to be an added value of enrolling at UIN Jakarta, which has been depicted as a campus that does not separate religious studies and general sciences.

Lecturers' Perceptions

The second research question addressed lecturers' perceptions of the integrated curriculum at UIN Jakarta. Like the students, lecturers also indicated positive perceptions of the university's integrated curriculum, as results in Table 4 suggest.

Table 4

Distribution of Lecturers' Scores for Perceptions of the Integrated Curriculum

Dimension	Category	Score	Frequency	%
Nomenclature	High	7–12	53	58.8%
	Low	6–9	37	41.1%
	Total		90	100.0%
Ontology	High	3–4	67	74.4%
	Low	2	23	25.5%
	Total		90	100.0%
Epistemology	High	6–8	52	57.7%
	Low	2–5	38	42.2%
	Total		90	100.0%
Axiology	High	16–20	33	36.6%
	Low	12–15	57	63.3%
	Total		90	100.0%
Distinction of integration	High	19–24	30	33.3%
	Low	13–18	60	66.6%
	Total		90	100.0%

Table 4 indicates that lecturers perceived three of the five dimensions (i.e., nomenclature, ontology, and epistemology) to be high ($X \geq M$) and the other two (i.e., axiology and distinction of integration) to be low ($X < M$).

Table 5 presents results regarding lecturers' perceptions of the structure of the integrated curriculum. They perceived four of the six dimensions (i.e., spiritual attitudes, knowledge, skills, and time allocation) to be low ($X < M$) and two (i.e., social attitudes and coursework) to be high ($X \geq M$).

Table 5

Distribution of Lecturers' Scores for Perceptions of the Structure of the Integrated Curriculum

Dimension	Category	Score	Frequency	%
Spiritual attitudes	High	7–8	37	41.1%
	Low	4–6	53	58.8%
	Total		90	100.0%
Social attitudes	High	21–24	45	50.0%
	Low	15–20	45	50.0%
	Total		90	100.0%
Knowledge	High	17–20	44	48.8%
	Low	12–16	46	51.1%
	Total		90	100.0%
Skills	High	17–20	32	35.5%
	Low	12–16	58	64.4%
	Total		90	100.0%
Coursework	High	12–16	50	55.5%
	Low	7–11	40	44.4%
	Total		90	100.0%
Time allocation	High	8–11	44	48.8%
	Low	5–7	46	51.1%
	Total		90	100.0%

Interview data also show that lecturers had both favorable and unfavorable perceptions of the integrated curriculum at UIN Jakarta:

> [I] believe that the implementation of the integrated curriculum will prepare students to become scientists on the one hand in one side and to have deep thought in Islamic studies on the other. (lecturer interview, June 10, 2014)

> [I] feel that the implementation of the integrated curriculum, by providing only a conceptual framework, is not enough. It also needs a guidebook and a clear map with measurable indicators. That way, its achievement can be measured and evaluated periodically. (lecturer interview, June 15, 2014)

The results of interviews with prominent figures and experts revealed that the implementation of the integrated curriculum was viewed as a distinctive feature of UIN Jakarta:

> [A]s an icon and flagship of Islamic higher education in Indonesia, UIN Jakarta has an effective way to instill an Islamic worldview and understanding through its learning process with a well-designed, structured curriculum. The greatest

challenge for UIN Jakarta's leaders is to prepare a complete document related to the concept of the integrated curriculum as a reference for both lecturers and students. (expert interview, June 25, 2014)

Differences in Perceptions Between Students and Lecturers

Results of the analysis of differences in perceptions between students and lecturers regarding an integrated curriculum and curriculum structure appear in Table 6.

Table 6

Distribution of Mean (M), Standard Deviation (SD), and Standard Error of the Mean (SEM) of Students' and Lecturers' Responses

	Respondent	*n*	*M*	*SD*	*SEM*
		Group Statistics			
Integrated curriculum	Lecturers	90	51.5778	5.42151	0.57148
	Students	670	62.4313	6.20458	0.23970
Curriculum structure	Lecturers	90	78.7222	7.09332	0.74770
	Students	670	76.2955	6.46544	0.24978

Table 6 reveals that the mean scores of students for both the integrated curriculum and the curriculum structure were higher than those of lecturers. To examine whether those scores were significantly different, an independent sample *t* test was administered, the results of which appear in Table 7.

Table 7

Results of the Independent Sample t *Test*

| | | Levene's test for equality of variances | | *t* test for equality of means | | | | | 95% confidence interval of the difference | |
		F	*p*	*t*	*df*	*p* (2-tailed)	*M* differ.	*SE* of differ.	Lower	Upper
Integrated curriculum	Equal variances assumed	0.238	.626	15.803	78.000	.0001	-10.85357	0.68682	12.20187	9.50526
	Equal variances not assumed			17.514	122.567	.0001	-10.85357	0.61971	12.08029	9.62684
Curriculum structure	Equal variances assumed	3.404	.065	3.304	758.000	.001	2.42670	0.73448	0.98485	3.86855
	Equal variances not assumed			3.078	109.791	.003	2.42670	0.78832	0.86440	3.98900

Table 7 shows a significant difference (p = .0001) between the mean scores of students and lecturers regarding their perceptions of the concept of the integrated curriculum. There was also a significant difference (p = .001) in the mean scores of their perceptions of the curriculum structure. It can thus be concluded that students' perceptions significantly differed from lecturers regarding both the integrated curriculum and the curriculum structure.

Problems Encountered in Implementing the Integrated Curriculum

Findings show that respondents identified five important problems in the implementation of the integrated curriculum at UIN Jakarta (Table 8): lack of guidelines for implementing the integrated curriculum (54.44% of lecturers, 22.83% of students), lack of competencies among lecturers to implement the integration concept in learning processes (53.33% of lecturers, 30.00% of students), inadequate socialization for integration concept (52.22% of lecturers, 42.68% of students), lack of specific nomenclature about integration (47.77% of lecturers, 18.35% of students), and limited time allocated to Islamic studies coursework in the Faculty of Natural Sciences (30.00% of lecturers, 29.70% of students).

Table 8

Problems Encountered During the Implementation of the Integrated Curriculum

Statement	Number of respondents	
	Students (n = 670)	Lecturers (n = 90)
No specific nomenclature about the integration concept	123 (18.35%)	43 (47.77%)
No written guidance for the implementation of the integration concept in the curriculum structure	153 (22.83%)	49 (54.44%)
Inadequate socialization for integration	286 (42.68%)	47 (52.22%)
Lack of competencies of lecturers to implement the integration concept in learning processes	201 (30%)	48 (53.33%)
Limited time allocated for the integration of the integrated curriculum in the coursework of natural sciences program	199 (29.70%)	27 (30%)

Discussion, Conclusion, and Recommendations

In general, the results of the study indicate that both students and lecturers at UIN Jakarta regard the concept of the integrated curriculum and curriculum structure at the university in a positive light. Such results support the findings of Kahveci and Atalay (2015), who reported favorable views of students on the integrated curriculum model and the instruction that it informed in a differentiated social studies unit. Kaewsaiha et al. (2015) reported similar findings that, overall, students achieved tasks and showed satisfactory attitudes toward the integration of mathematics and science in relation to the curricular goal of supporting critical thinking and collaboration skills.

The difference between those studies and ours is the context; our study was conducted in the context of Islamic higher education, whereas Kahveci and Atalay's (2015) was conducted in the context of the integrated curriculum model's implementation in social studies among gifted and talented students in Turkey, and Kaewsaiha et al.'s (2015) was conducted in the context of integrated learning in mathematics and science in terms of Thai students' critical thinking and collaboration skills. The culture, norms, and situations in Turkey and Thailand differ from those in Indonesia, even though those studies' results support the idea of integration as a curriculum model in the 21st century.

Our findings also indicate that there is no specific nomenclature used for the integrated curriculum at UIN Jakarta. The respondents viewed that shortcoming in relation to other universities in Indonesia, including UIN Bandung, which has adopted the nomenclature "Revelation guides the sciences," and UIN Malang, which has adopted the nomenclature of "Knowledge tree." Arguably, the use of nomenclature is not a significant issue, because a recent study by Yao Fu and Sibert (2017) indicates that there is no consensus on the meaning of *integrated curriculum*, which has often been used interchangeably with "interdisciplinarity," "transdisciplinarity," and "thematic curriculum" (Czerniak, Weber, Sandmann, & Abhern, 1999; Hough & Clair, 1995). According to Azra (2005), a former rector of UIN Jakarta, the primary reason for not having a specific nomenclature of integrated curriculum at UIN Jakarta is the idea that having a nomenclature would erode the separation of the Islamic sciences and general sciences. Azra (2005) added that with the use of the term *integration*, the impression of that separation would disappear. Consequently, UIN Jakarta has no specific nomenclature for the concept of its integrated curriculum.

Another consideration is that UIN Jakarta uses the term *integration of knowledge* instead of *Islamization of knowledge* as the International Islamic University Malaysia does (Hashim, 2015). Suryadi (2015) has shown that of 267 students surveyed in UIN Jakarta, 77.9% preferred the term *integration of knowledge*, whereas only 20.2% preferred *Islamization of knowledge*. The term *integration* seems more inclusive because Indonesia is a multicultural country, as 74.2% of students confirmed, whereas 19.1% felt that *Islamization of knowledge* seemed more assertive due to the Muslim majority in Indonesia. Arguably, the term *Islamization* might cause discomfort among non-Muslims, if not also Muslims themselves, in Indonesia due to the current trend of Islamophobia and prompt the disintegration of the country, even if Indonesia's Muslim majority is based on the Pancasila ideology. The term *integration* has broad support from various parties, both inside and outside Indonesia, and, in the Indonesian context, the term gives a positive impression of mixture, equality, unity, togetherness, and peace compared to *Islamization*, which suggests hostility toward the general sciences of the Western world.

Our study shows that the lecturers had less favorable perceptions of integration than students did, possibly because were not involved in planning the integrated curriculum or the curriculum structure. University leaders should consider those less favorable perceptions when considering future strategic planning for UIN Jakarta. Obstacles encountered while implementing the integrated curriculum were fivefold: the lack of guidance on implementing integration in the curriculum structure, the lack of lecturers' competencies to implement the integration concept in learning processes,

inadequate socialization for integration, the lack of specific nomenclature at UIN Jakarta about the integration concept, and the limited time allotted to Islamic studies in the natural sciences program. Such barriers aligns with obstacles detected by Saint-Louis et al. (2015), who found that the greatest challenges in implementing an integrated curriculum were philosophical or logistical, if not both, while working collaboratively to create a single, uniform curriculum with team members from various disciplines presented its own challenges. Saint-Louis et al. (2015) consider each institution to be unique and likely to have its own institutional and organizational challenges (e.g., legacy, policy, politics, and entropy). Nevertheless, by recognizing the problems and obstacles that UIN Jakarta has faced during the process of integrating the curriculum, other institutions interested in applying an integrated curriculum model can benefit from the lessons learned from our study and be better able to implement the model in their specific contexts.

According to the results of interviews with students and lecturers, university leaders need to consider various critical elements in designing and implementing an integrated curriculum, including faculty members' involvement, clear guidelines, leadership, curriculum content, and the perspectives of all stakeholders. According to Khan and Law (2015), curriculum development in higher education also needs to consider various elements of institutional leadership, social trends, industry factors, and the role of the government. Moreover, at UIN Jakarta in particular, at least from students' perspectives, students choose to attend UIN Jakarta because they want to deepen both their Islamic knowledge and general knowledge. Therefore, the development of curriculum integration at UIN Jakarta needs to be evaluated regarding how it can support students' competences, knowledge, and skills, not only in terms of the university's goals as an Islamic university. That thinking relates to Khan and Law's (2015) assertion that designing appropriate curriculum is crucial to providing such knowledge and skills. In contexts such UIN Jakarta, the integration of religion and science needs to be deeply explored in order to provide comprehensive perspectives of curriculum integration in teaching and learning.

To implement integrated curriculum effectively, UIN Jakarta's leaders should provide guidelines to lecturers about implementing the curriculum integration in their courses and classrooms. The lecturers should be involved in the curriculum planning, development, and implementation both in content and its technical aspects because their involvement can activate their felt responsibility for implementing the curriculum integration. According to Alsubaie (2016), curriculum development should involve individuals directly involved in student instruction, and the involvement of lecturers and stakeholders needs to be orchestrated by university leaders. At the same time, the university also needs to recognize and act upon the idea that curriculum development needs continual review and revision (Johnson, 2001).

Our study was limited by the number of lecturers who participated and by the fact that it focused only on students and lecturers' perceptions. Future studies should consider larger samples of lecturers and other stakeholders involved in the outcomes of implementing integrated curricula (e.g., employees and alumni of the university) to provide more comprehensive information on such implementation.

Our study produced three major recommendations for institutions considering implementing integrated curricula. First, the concept of integration needs to be explored more deeply so that it can be established in a systematic, integrative, and comprehensive way. Second, training and workshops are necessary for lecturers to improve their competencies in implementing the concept of integrated curriculum with a relevant assessment system. Third, a blueprint and clear guidelines need to be developed for implementing integrated curricula, especially for lecturers tasked with implementing the concept throughout their faculties.

References

Alsubaie, M.A. (2016). Curriculum development: Teacher involvement in curriculum development. *Journal of Education and Practice*, 7(9), 106-107.

Amalia, E. (2011). *Potret pendidikan ekonomi Islam di Indonesia: Analisis kurikulum ekonomi Islam dan kebutuhan SDM di industri keuangan syariah.* Jakarta: Gramata.

Azra, A. (2005). Kata pengantar. In Abuddin Nata, Suwito, Masykuri Abdillah, dan Armai Arief. *Integrasi ilmu agama dan ilmu umum*. Jakarta: PT Raja Grafindo Persama.

Beane, J.A., (2016). *Curriculum integration designing the core of democratic education*. New York: Teachers College Press, Columbia University.

Boyd, S. (2015). *Integrated Curriculum: Definition, Benefits & Examples*. Available from: http://study.com/academy/lesson/integrated-curriculum-definition-benefits-examples.html. Retrieved on November 29, 2017.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. New York: Routledge.

Cushion, C.J. & Jones, R.L. (2012) A Bourdieusian analysis of cultural reproduction: socialisation and the 'hidden curriculum' in professional football. *Sport, Education and Society*, *19*(3),276-298, DOI: 10.1080/13573322.2012.666966

Czerniak, C. M., Weber, W. B., Sandmann, A., & Abhern, J. (1999). A literature review of science and mathematics integration. *School Science and Mathematics, 99*(8). 421-430.

Drake, S. M. & Burns, R. C. (2004). *Meeting standards through integrated curriculum*. Alexandria, VA: ASCD.

Guessoum, N. (2010). Science, religion, and the quest for knowledge and truth: An Islamic perspective. *Cultural Studies of Science Education, 5*, 55-69.

Hall, R & Smyth, K. 2016. Dismantling the curriculum in higher education. *Open Library of Humanities*, 2(1), 1–28, DOI: http://dx.doi.org/10.16995/olh.66

Hashim, R. (2015). Internationalisation of contemporary muslim higher education and ummatic development: A case study of the International Islamic University

Malaysia. In: R. Hashim & M. Hattori (Eds.). *Critical ıssues and reform in muslim higher education.* Gombak: IIUM Press.

Hough, D. L., & Clair, B. (1995). The effects of integrated curricula on young adolescent problem-solving. *Research in Middle Level Education Quarterly, 19*(1), 1-25.

Johnson, J. A. (2001, August 28). Prıncıples of effectıve change: Curriculum revision that works. *The Journal of Research for Educational Leaders*, *1*(1), 5-18.

Kaewsaiha, C., Leelawatthanapan, N., Bumrungpon, P., Rungtrak, T., Wangthaphun, T., Thatho, Y., Jangjumpa, C., & Omaha, P. (2015). *The effect of integrated learning in mathematics and science on student's critical thinking and collaboration skills.* Retrieved February, 16th, 2017, from http://atcm.mathandtech.org/EP2016/contributed/ 4052016_221116.pdf.

Kahveci, N. G., & Atalay, Ö. (2015). Use of integrated curriculum model (ICM) in social studies: Gifted and talented students' conceptions. *Eurasian Journal of Educational Research*, 59, 91-112.

Khan, M. A. & Law, L.S. (2015). An Integrative approach to curriculum development in higher education in the USA: A theoretical framework. *International Education Studies*, *8*(3), 66-76.

Mitchel, M.L., & Jolly, J.M. (2010). *Research design explained.* Wadsworth: Cengage Learning.

MORA. (2015). *Ministry of Religious Affairs Report.* Speech presented at the 15th International Conference on Islamic Studies (AICIS), September 3, 2015, Manado, Indonesia.

Rennie, L. (2007). Values of science portrayed in out-of-school contexts. In D. Corrigan, J. Dillon & R. Gunstone (Eds.), *The re-emergence of values in science education* (pp. 197-212). Rotterdam, The Netherlands: Sense Publishers.

Rodha, F., & Suryadi, B. (2010). *Adjustment and loneliness amongst international students: A study at Syarif Hidayatullah State Islamic University Jakarta Indonesia.* Germany: VDM Verlag Dr. Müller.

Saint-Louis, N., Seth, N., & Fuller, K. S. (2015). Curriculum integration: The experience of three founding faculties at a new community college. *International Journal of Teaching and Learning in Higher Education, 27*(3). 423-43.

Suryadi, B. (2011). Islamization and integration of knowledge: Indonesian experience, a case study at Syarif Hidayatullah State Islamic University Jakarta. *Proceedings of International Conference on Creativity and Innovation for Sustainable Development.* Presented at International Islamic University Malaysia, September 14, 2011.

Suryadi, B. (2015). The role of Islamic higher education in harmonizing religion and sciences: A case study in UIN Syarif Hidayatullah Jakarta, Indonesia. In: R. Hashim & M. Hattori (Eds.). *Critical Issues and Reform in Muslim Higher Education.* Gombak: IIUM Press, p. 209.

Seng, K. P. (2006). Bridging science and religion in China: Emerging opportunities for global dialogue. *Theology and Science, 4*(2), 183-192.

UIN Jakarta. (2012). *Strategic planning of Syarif Hidayatullah State Islamic University Jakarta (Rencana strategis 2012-2016 Universitas Islam Negeri (UIN) Syarif Hidayatullah Jakarta.* Jakarta: UIN Press.

Yao Fu, & Sibert, S. (2017). Teachers' perspectives: Factors that impact implementation of integrated curriculum in K-3 Classrooms. *International Journal of Instruction, 10*(1), 169-186.

Analysis of EFL Teachers' Use of Digital Components: Evidence from Self-Report and Classroom Observation*

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A B S T R A C T

Purpose: A coursebook is ranked among the fundamentals of language teaching, which directly affects the success of classroom activities. Therefore, investigations into the nature and efficiency of this relationship should yield invaluable insights to improving language teaching. In this regard, this study aims to investigate EFL teachers' views regarding the necessity of such software, its actual use in teaching, and its perceived advantages. **Methods**: In this study, a mixed research design was used, in which qualitative and quantitative research methods were used together.

For these purposes, three different data collection tools were employed throughout this study: a) a survey, b) classroom observations, and c) post-observation interviews. First, a total of 74 participants were surveyed, and then 14 of them were observed while teaching and were interviewed afterwards. **Findings**: Coursebook software was most commonly utilized within listening tasks and least commonly utilized in writing tasks. Active use time was observed to be 143 minutes, which is 20% of the total teaching time. The passive use time of the tool was calculated to be 511 minutes (73.5%), and the digital tool was turned off for a duration of 46 minutes (6.5%). Semi-structured interviews revealed three main themes: attractive presentation of the content, effective teaching, and classroom management. **Implications for Research and Practice:** It is crucial to equip EFL teachers with the skills needed to employ the digital components of coursebooks effectively. The availability of classrooms equipped with ICT tools—including a computer with internet connection, a projector, and speakers for audio, as well as in-service training on the effective use of ICT tools at the host institution—promote positive attitudes towards ICT among the teachers; therefore, these facilities should be made available to EFL teachers.

Introduction

Language teaching around the world, especially in foreign language contexts, continues to incorporate textbooks as a primary mode of instruction. It has been well documented that textbooks regulate classroom teaching as well as out-of-class learning (Mahadii & Shahrill, 2014). Serving a variety of purposes, these books are viewed as standardized and accessible learning resources that supply the basic content of a lesson (J. Richards, 1993). Moreover, they reveal syllabus and content organization to teachers and students, therefore guiding the learning process. Another advantage of textbook use, specific to language classrooms, is balanced skill-teaching through a variety of activities. Specifically, major language skills such as reading, listening, writing, and speaking are presented proportionally throughout a textbook. Textbooks play a significant role not only in providing effective language input but also in maintaining the quality of language (O'neill, 1982; J. C. Richards & Renandya, 2002).

In addition to the above-mentioned benefits of textbook use, O'Neill spells out the following benefits that support the use of textbooks (O'neill, 1982). First, textbooks provide a framework for grammar and vocabulary instruction, giving learners the opportunity to study in advance and to catch up if they miss a class. Similarly, textbooks support teachers by standardizing instruction, thus supporting the deliverance of quality lessons by relatively-inexperienced teachers. In cases in which a teacher lacks the required teaching experience or content knowledge, the textbook might serve as a training opportunity by providing "ideas on how to plan and teach lessons as well as formats that teachers can use" (J. C. Richards & Renandya, 2002, p. 65). Finally, textbooks replace the otherwise time-consuming process of designing level-specific materials (Sheldon, 1988). All these features mean, however, that textbooks can be seen as 'dictatorial': the provision of tightly structured materials implies that a specific teaching strategy and pedagogy must be used. In addition, the preparation of standardized instructions and additional content can limit teachers' choice and learners' exposure to authentic, culturally-appropriate materials.

Digital Enrichment of Textbooks

As one of the most basic components of EFL classrooms, coursebooks have continued to adapt to meet the needs of modernized language-teaching practices. Current technological developments have also affected the nature of coursebooks and accompanying materials, although most contemporary coursebooks provided by well-known publishers lack both digital versions and software designed for use on interactive whiteboards or smartboards. Those coursebooks that incorporate digital components are referred to as digital coursebooks. Mozejko and Krajka (2011) elaborate that digital coursebooks involve interactive software components designed to be used on an interactive whiteboard or on a computer with a projector device.

Digital coursebooks further include "student book pages, listening tape-scripts, animations, and videos with additional functionalities of multimedia courseware such as interactive activities, on-demand grammar reference and dictionary" (Mozejko & Krajka 2011, p.168). Digital enrichment in ELT is generally considered in relation to digital materials development and adaptation (Mitsikopoulou, 2014). The additional

materials of coursebooks are referred to by another term—a coursebook package. Allen (2015) notes that the term 'coursebook package' refers to "all elements related to a coursebook and produced in-house by a publisher, including associated websites and digital resources" (p.250). The broader term ICT (as mentioned above) can be used to refer to these elements of a coursebook package as well as to other relevant educational materials, such as computer software, CD-ROMs, films, the internet, television, e-mail, chat, blogs, wikis, podcasts, and smart phones (Andrews, 2000). In accordance with recent developments in technology, the definition can be also be revised to include tools such as "the internet, computers, social media, mobile technology and broadcasting technologies" (Jose, Jafre, & Abidin, 2015, p. 52).

Alongside the development of digital aids for educational purposes, digital literacy has gained importance as a teaching and learning skill; such literacy is defined as "the ability to employ a wide range of cognitive and emotional skills in using digital technology" (Eshet-Alkalai & Chajut, 2009, p. 1). Regarding studies of language-teaching textbooks and technological aids, some scholars have reported that incorporating digital literacies into textbook packages might result in enriched textbooks as well as the improvement of learners' digital literacies (Warschauer, 2000). Nevertheless, the successful integration of technology into textbooks and its efficient use is, to a great extent, determined by the attitudes and views that teachers hold toward these technologies (Glover & Miller, 2001). In their investigation of 33 peer-reviewed articles published between 2000 and 2015, Mâță, Lazăr and Lazăr (2015) discovered that a variety of pedagogical, instructional, psychological, social, economic, and technological factors were documented as playing a significant role in the use of new technologies in classrooms.

The popular use of computers, projectors, and interactive smartboards in modern classrooms has necessitated that textbooks possess digital forms that can be explored interactively on these smartboards (Mitsikopoulou, 2016). Therefore, in some cases, textbooks are presented with computer applications. A great number of studies have indicated that interactive whiteboards have a positive and motivating effect on learners, as they as they assist students in focusing more on content, thus enabling teachers to prepare and present materials in a more effective way (Mâță et al., 2015). Moreover, owing to the aid of remote controls, teachers are able to move more freely around the classroom and interact with students for longer periods of time in comparison with traditional whiteboard use (Clyde & A., 2004; Gillen, Staarman, Littleton, Mercer, & Twiner, 2007; Kelley, Underwood, Potter, Hunter, & Beveridge, 2007; Kennewell & Beauchamp, 2007).

Since it is not possible to evaluate digitalized coursebooks according to the same criteria as printed coursebooks, Mozejko and Krakja (2011) have provided comprehensive evaluation criteria by referring to a number of issues, such as features and interface of the software, content, methodology, language skills, and subsystems. Apart from this study, research is limited in evaluating the effectiveness and application of supplementary visual and auditory software for coursebooks. The following sections provide research background related to other digital components of coursebooks, such as integrated online tools. Although previous studies deal with

the problems in integration of technology, specific issues concerning the use of digitalized textbooks have not dealt with thoroughly by researchers.

Digital Components and Language Teaching & Learning

Several studies have demonstrated that the use of computer software as a teaching tool in foreign language education facilitates acquisition of the four primary language skills (Gunduz, 2005; Tzortzidou & Hassapis, 2001; Yilmaz, 2015). This improvement in achievement has been linked to a sophisticated and motivating classroom environment, rich in content and opportunities, which can appeal to different types of learners by increasing the efficiency of perception, practice, and recollection of information (Korkmaz & Basaran, 2016).

Hismanoglu (2011) is one researcher who conducted a study on the integration of ICT tools into ELT coursebooks. The purpose of the research was to determine which ICT tools were utilized and which were ignored in teaching and learning processes. In his study, Hismanoglu discovered that the tools utilized were Audio CDs, CD-Roms, DVDs, E-portfolio, and the internet, while those ignored were Chat, E-mail, and Social Software. He concluded that most digital components of coursebooks are limited to CD-ROMs, Internet, DVD, and several audio materials. He also reported that the other tools were ignored mainly because they were "stand-alone" materials, supplementary to coursebooks yet not included in lessons. Hismanoglu determined that ICT offers a variety of benefits to educators and students; however, a better understanding of the technologies and teacher trainings are necessary to integrate these more efficiently into classroom activities.

A more recent study, conducted by Korkmaz and Basaran (2016), studied the effects of Oxford iTools and iTutor software (digital components of Oxford New English File coursebook package) on students' academic achievement. The aim of the study was to determine, via pre- and post-test analysis, the progress of students utilizing the software, as well as their attitudes towards this use. They concluded that iTools and iTutor software contributed to the academic achievement of learners when compared to the control group, and that the levels of achievement obtained by those who used the software were higher than those of learners who used the coursebook alone. The researchers also noted that learners and instructors had positive attitudes towards the use of such digital components in the classroom. They finally proposed that printed materials should be supported with computer software, to achieve better results in terms of academic achievement.

Most research related to the digital components of coursebooks has focused more on hardware, such as interactive whiteboards; research focusing on software, together with its content and related issues, seems to be scant. More studies should be conducted examining the content, interface, and methodological aspects of software versions of coursebooks; as O'Hagan (1999) suggests, it is neither technological tools nor devices that make learning possible, but rather the methodological background and theories behind their uses.

In terms of specific language skills, the majority of existing research has revealed positive teacher and student views on the effectiveness of ICT. In general, ICT has the potential to fully enhance all language skills: listening, speaking, writing, and reading (Warschauer, 2000). Balanskat et al. (2006) investigated the views of teachers on the effectiveness of ICT, and discovered that students' reading and writing skills in particular develop better with ICT, as materials developed and delivered through ICT can easily be spread and repeated (Idrees, 2010). Similarly, Hismanoglu (2011) investigated the effectiveness of ICT tools in EFL classrooms, and suggested that these tools are efficient in "grammar practice activities and listening and reading materials for the learners yet they are less effective for speaking practice as it is difficult to go beyond a 'listen and repeat' model, which means lack of real interaction" (p. 40). Similarly, the potential difficulty of ICT use in writing has been reported among students, owing to the fact that typing on keyboards is not equivalent to writing by hand (Elaziz, 2008).

Significance of the Study and Research Questions

The use of ICT in classrooms has been studied extensively, with studies indicating that it enriches classroom activities and improves the efficiency of these activities (Cuban, 2001; Dudeney & Hockly, 2012; Gillen et al., 2007; O'Hagan, 1999). However, most research has employed data collection tools of a self-report nature, such as questionnaires and interviews (Rollins, 2011). The self-report data might be misleading, as participants often have a tendency to overstate the use of technology in such tools (Cuban, 2001). Teachers might also be influenced by the convenience of having ready-made materials as add-ons to their preferred coursebooks, and thus may describe their technology use uncritically. A careful investigation of the status quo needs to be undertaken that uses other-report evidence and that takes account of teachers' views and real-life experiences and constraints.

This study investigates the phenomenon by collecting self-report data regarding teachers' opinions, along with classroom observation data concerning the actual use of digital components. Therefore, both self-report and other-report data (in the form of surveys and classroom observations) lay a strong foundation for the outcomes of this study. The significance of this study arises from the fact that, despite research suggesting the effectiveness of the digital components of coursebooks, research is needed that critically weighs the benefits of using ready-made materials versus relying on teachers' pedagogic expertise in selecting and adapting appropriate materials for specific teaching goals—in other words, to weigh convenience versus autonomy in the use of course materials for language teachers in the field.

To achieve these outcomes, the following research questions have been formulated to guide this study:

1. What are the views of tertiary-level Turkish EFL teachers regarding the digital components of coursebooks?

2. What is the use time of the digital components of coursebooks in the classroom?

3. What are the reasons behind the classroom use of the digital components of coursebooks?

Method

Research Design

Both qualitative and quantitative research designs were used to investigate both EFL teachers' perceptions regarding the digital components of coursebooks and the actual use of these components in classrooms. For the quantitative part of this study, a survey was administered to 67 EFL teachers; for the qualitative part, 12 classroom observations were conducted, followed by individual interviews with the teachers.

Research Context

This study was conducted in the School of Foreign Languages (SFL) at a state university in southeast Turkey. The school admits students from all regions of Turkey and from around the world, with a 10% international student ratio from around 70 countries. The medium of instruction in this university is English; thus, students must complete a one-year intensive English program at the SFL prior to study in their field of choice. After taking a placement test, around 1600 students enroll in the SFL each year to improve their English language skills. Based on the placement test results, students are placed in A1, A2, or B1 entry level modules. Each module lasts for eight weeks, and students must successfully complete the B2 module in order to take a proficiency exam to exit the program. 84 instructors in the SFL cater to the general and field-specific needs of students.

Research Sample

The SFL employs 88 EFL teachers, all of whom were invited to participate in this study; 74 EFL teachers completed the survey. All of the voluntary participants received the Teacher Opinion on the Digital Components of Coursebooks Survey (TODCC) regarding attitudes toward the use of digital components of English coursebooks. Then, 14 of these teacher were observed in the classroom by the researcher, to collect data on the use of digital components in class. The participant demographics are presented in Table 1 below.

Table 1

Participant Demographics

	Female	Male	Total	Mean experience (months)
Survey	54	20	74	86
Observation	9	5	14	82

As Table 1 illustrates, of the 74 participants who completed the TODCC Survey, 54 were female and 20 were male. The average teaching experience was 86 months. 14 of

these survey participants—9 females and 5 males, with an average of 82 months of teaching experience—were included in observations sessions.

Research Instruments and Procedures

Teacher Opinion on the Digital Components of Coursebooks Survey

EFL teachers' attitudes and opinions on ICT and technology in their classrooms have been concisely investigated (Balanskat, Blamire, & Kefala, 2006; Cox, Cox, & Preston, 2000; Dudeney & Hockly, 2012). After reviewing existing research, the researcher constructed 25 statements questioning teachers' opinions regarding the digital components of textbooks. The items were edited and proofread by two ELT scholars with PhD degrees in language teaching, which provided the survey's foundation in terms of content validity and language use. After these expert opinions, a total of 20 statements were included in the TODCC survey. The first fifteen statements were designed to investigate teachers' views concerning the significance of digital components, while the remaining five statements inquired about the frequency of use of these tools. To ensure reliability of the instrument, a Cronbach's Alpha statistical test was conducted, which it determined that the TODCC survey was a reliable instrument (r=.79).

Classroom Observation

Self-report data, such as surveys and questionnaires, might yield biased data, as participants tend to overestimate their technology use while answering questions (Cuban, 2001); on the other hand, other-report data, such as classroom observations, produce more objective data when compared to self-report instruments (Cinkara, 2016; Cuban, 2001). For this reason, EFL teachers' actual use of digital components in their lessons were investigated via a classroom observation protocol. Following a comprehensive literature review, the Classroom Observation Form (COF) (Appendix 1) was constructed, based on the work of Rollins (2011), to collect data in classroom observations. The COF included the fields of active and passive use of digital components as well as the skill being taught in which these components were utilized.

Post-observation Interview

Immediately following classroom observations, the participants were invited to a one-on-one interview with the researcher to discuss their use of digital components in the classroom. An informal interview protocol was followed, as this approach reduces the pressure of being interviewed and allows participants to speak more freely and openly (Opdenakker, 2006). The researcher took a neutral position and only asked questions investigating the use of coursebook software, including specific examples from the lesson. Key points and quotes from the participant were recorded in the form of field notes. The questions concerned teacher reasoning for using the tool in teaching (Appendix 2). Each interview lasted five to fifteen minutes. The content of the notes was analyzed, and themes were extracted.

Data Collection and Analysis Procedure

First, the TODCC surveys were distributed to 74 EFL teachers, and the answers were entered into the SPSS program for descriptive analysis. Then, 20 participants were contacted for classroom observation; 14 teachers were willing, and gave written consent to be observed while teaching and subsequently interviewed. After the observations, 14 post-observation interview sessions were conducted to determine teachers' opinions regarding their use of digital components. An inductive content analysis method was used to identify teachers' rationale for using digital enrichment tools in their classrooms. To ensure the reliability of the findings, the content analysis was performed by two raters, and only the examples and themes which were mutually agreed upon were included in the study. The raters were the researcher and an external rater with a PhD in language teaching.

Results

The data collected by each of the three research instruments were analyzed and the findings are presented below, followed by discussion. First, the results from the TODCC survey are presented, followed by the results of classroom observations and post-observation interviews.

EFL Teachers' Views on the Use of the Digital Components of Coursebooks

In order to determine teachers' views concerning their use of digital components in the classroom, the TODCC survey was distributed. According to the results of the survey, the mean scores for each statement ranged from 3.03 to 4.79 out of 5.00. The mean score from the TODCC was 4.03 for the first fifteen items and 3.30 for the last five items. This shows that they have favorable views of digital components in the classroom. The highest mean was observed in the 15th statement, which expressed the importance of digital enrichment in terms of supporting content with visuals, audio, and/or video files (M=4.79); the lowest mean was observed in the 13th statement, which states that smartboard applications are indispensable for writing (M=3.03). Items 16 through 20 concern the frequency of digital component use, and the results indicate that these tools are most frequently used in listening activities (M=4.21) and least frequently used in writing activities (M=2.10).

The first fifteen items in the survey were categorised into two categories, pertaining to the digital components of coursebooks: overall views and skills-based views (listening, speaking, reading, and writing). The mean scores for the subcategories are presented in Table 2 below.

Table 2

Skills-Based TODCC Means and Active Use Time

	Skill based TODCC means	Active use time (in mins.)
Listening	4.25	57
Reading	3.43	38
Speaking	3.40	25
Writing	2.77	0
Total	4.43	143

The results of the TODCC survey indicate that participants were aware of the importance of the digital components of EFL coursebooks for their teaching (M=4.43). For skills-based views, listening (M=4.25) was the most common skill in which digital components were utilized by teachers, while writing (M=2.77) was the least common skill.

Existing literature suggests that ICT and digital enrichment tools prove an attractive presentation tool for content (Cox et al., 2000; Elaziz, 2008; Idrees, 2010; Jose et al., 2015; Toscu, 2013; Turel & Johnson, 2012). The EFL teachers in this study held congruent views of digital enrichment tools and ICT. When the skill-specific uses of these tools are considered, these tools were found to be more effective in listening and reading, which might be attributed to the receptive nature of these skills (Allen, 2015; Wen-Cheng, Chien-Hung, & Chung-Chieh, 2011). In contrast, speaking is productive and requires interaction. Research suggests that ICT and digital enrichment tools that lack interactivity are insufficient to support learner development (Dudeney & Hockly, 2012; Hismanoglu, 2011).

EFL Teachers' Actual Use of the Digital Components of Coursebooks

One major purpose of this study was to investigate the actual use of digital components in EFL classes. For this purpose, 14 teachers were observed by the researcher for 50-minute lessons. The observation data was collected via the COF for later analysis. The results of this analysis revealed the duration of use (in minutes), skills, and interactivity. The results of this analysis are presented in Figure 1.
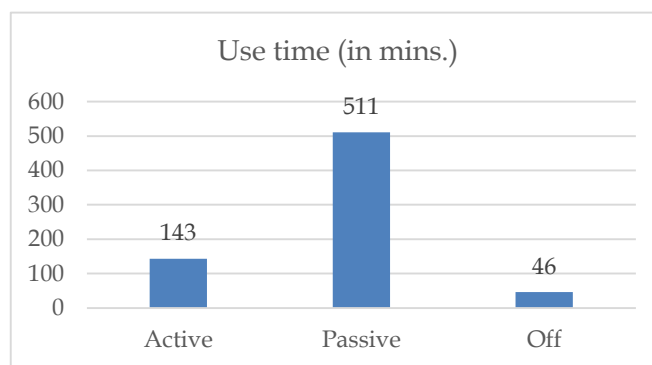
Figure 1. Use time in minutes

Figure 1 and Table 2 present the results of 14 classroom observations regarding teachers' actual use of digital components in their teaching. The total observation duration was 700 mins. Within this total time, active use time was observed to be 143 minutes, which is 20% of the total teaching time. The passive use time of the tool was calculated to be 511 minutes (73.5%), and the digital tool was turned off for a total duration of 46 minutes (6.5%). When language skills are considered, the tool was most frequently used in listening (57 mins.) and reading activities (38 mins.). The most striking result was that no teacher used the tool for writing activities. The tasks conducted with the tool included: a survey, matching sentences, reading comprehension questions, picture-cued speaking, noticing, explanation, completing cloze texts, guessing the story from headings and/or picture, picture reading, detailed reading, and text analysis. As mentioned previously in this paper, most research investigating the use of digital enrichment tools is based on self-report, survey, and interview data; therefore, classroom observations that reveal actual use of these tools in teaching language skills are of great significance (Rollins, 2011). Confirming findings from the self-report survey data, the classroom observations in this study revealed that EFL teachers used the iTools more frequently when teaching listening and reading skills.

Rationale for using the digital enrichment tool

14 participants who were observed while teaching were also interviewed after the observations, in order to gather data on their rationale for using the digital component in their teaching. The interviews were done in Turkish and recorded in the form of field notes. The interview data were then analyzed to determine teachers' views on their use of digital components in language teaching. The results of the content analysis revealed 63 cases for rationale, 60 of which could be categorized under three main themes; the remaining three were excluded. Table 3 below illustrates the three main reasons detected after the inductive content analysis.

Table 3

Reasons for Using the Digital Component in Classroom

Underlying reason	# of statements detected	Example
Attractive presentation of the content	27	It gives a more colorful teaching opportunity.
Effective teaching	18	This (the tool) improves students' participation in the activity.
Management	15	Easy to follow and manage activities and find answers.

Attractive presentation of the content (N=27): The first underlying reason derived from the content analysis relates to presentation of content. Participants stated that with the use of these tools, content is presented in a more attractive and effective way; they gave 27 examples in total of the tool's ability to present the content attractively. The characteristics of course content and information, as well as their presentation, are

among the key factors determining the effectiveness of the teaching and learning process. This aligns with findings from Garrison et al. (2000), who argued that teachers have the primary responsibility of designing an effective presentation of course content. The presentation of course content and information involves "developing and organizing course materials in an integrated, intuitive manner" (Rovai, 2004, p. 84). The following excerpts, derived from interview data, indicate that participants in this study were well aware of the importance of digital tools in presenting content in an attractive manner:

"It (iTools) is more visual, attractive, and motivating. Students sometimes forget to use their hard copy textbooks as they do the task that is already projected on the board." (Kerim, all names are pseudonyms)

"When I use the iTools, students are more attracted to what I am saying rather than focusing on their books on the desk. Their heads are always up and I can make eye-contact with them. However, if they are looking at their book, I cannot see their faces." (Seyma)

Effective teaching (N=18): ICT and tools have been comprehensively investigated in education and language teaching, and have been reported as positively affecting teaching and learning processes (Allen, 2015; Balanskat et al., 2006; Bax, 2003; Cox et al., 2000; Jose et al., 2015). Experimental analysis also revealed that specific digital enrichment tools like iTools and iTutor increase students' academic achievement (Korkmaz & Basaran, 2016). Participants in our study made comparable comments regarding the positive effect of iTools in aiding learning activities presented with the coursebook. The following excerpts are taken from participant statements in the post-observation interviews:

"I use it for all kind of activities. Video and listening activities are especially more effective with this tool. Plus, it is time-saving and easy-to-follow for the students." (Fatma)

"Using iTools in the classroom is a lifesaver for me. First of all, I don't have to carry my CD player to every class. By just clicking on the listening icon, the track plays. You can also show the script, and whenever my students have a hard time understanding the listening track, I play it with the script on so that they can listen and follow the written script of the dialogue. It is great." (Ali)

Management (N=15): Common definitions of ICT involve information management (Jose et al., 2015). These tools provide opportunities to manage information, content, and activities during the teaching and learning process (Balanskat et al., 2006; Bax, 2003; Hismanoglu, 2011). Our participants recognized this function of digital enrichment tools. Therefore, another important result drawn from the interview data is that teachers view digital components as a tool to efficiently manage classroom activities and content, as indicated by the following:

"Even sometimes students might not find which activity I am talking about. Giving instructions in English with a smartboard component is a lot easier. I click on the

page and point to the activity we are doing. I can magnify and focus on the part I am trying to emphasize." (Mustafa)

"Then they can follow the instructions a lot easier with it (iTools on)." (Mehmet)

The interview data showed that all participants have positive statements towards the use of digital enrichment tools in their classrooms. The analysis of their statements revealed three basic underlying reasons for using these tools: attractive presentation, effective teaching, and management.

Discussion and Conclusion

Coursebooks are one of the main components of language classrooms, and they have continued to adapt alongside modernized teaching strategies and technological developments. One of these improvements is the addition of digital components within coursebook packages. Thus, this study aimed to investigate EFL teachers' perspectives regarding the value of such software and their actual uses in teaching. Self-report results in this study suggested that EFL teachers possessed highly positive attitudes toward using ICT tools provided by coursebooks in their teaching. This positive attitude complies with existing research concerning the use of ICT in language teaching (Balanskat et al., 2006; Cuban, 2001; Dudeney & Hockly, 2012; Gillen et al., 2007). The availability of classrooms equipped with ICT tools—including a computer with internet connection, a projector, and speakers for audio — as well as in-service training on the effective use of ICT tools at the host institution, have promoted positive attitudes towards ICT among the teachers in this study.

This study further analyzed in detail participants' skills-specific views regarding the effectiveness of ICT. Results indicated that listening and reading were the skills for which ICT was used most frequently, which is also supported by research suggesting that teachers see students' success and performance in reading improved by ICT use (Balanskat et al., 2006). It is therefore crucial to equip EFL teachers with the skills needed to employ the digital components of coursebooks effectively. This should be realized initially at teacher-education institutions or through in-service training. Another important conclusion drawn from this study regards methodology. Self-report data might be viewed as limited in determining the actual behavior of participants (Cuban, 2001). However, the present results suggest that self-report data can reveal findings correlating with classroom observation. Therefore, a methodological implication drawn from this study is that other-report data can be utilized to verify self-report data. Therefore, the use of mixed data collection tools as confirmatory methodology clearly provided valid and reliable findings in this study.

Although ICT tools improve language learning in many aspects, there are also some drawbacks regarding the use of ICT by teachers and learners. The findings of this study also suggest that the skills for which ICT is least commonly used are writing and speaking, which were expressed as being difficult for enabling interaction through ICT. For writing, learners and teachers need to possess basic ICT skills such as typing quickly and accurately; therefore, its use in writing activities places an extra burden

on teachers and students who want to use these tools. Elaziz (2008), among others, has stated that traditional pen-and-paper writing is easier for students than typing on a keyboard. Similarly, teachers in the present study reported that they used ICT tools less frequently when teaching speaking in EFL classes. The reciprocal nature of speaking might be one of the factors that make it a difficult skill to acquire via ICT. As Hismanoglu (2011) states, teaching grammar, listening, and reading through ICT is effective, yet speaking necessitates more interaction that is not provided by these tools.

The data regarding the actual use of digital components was gathered through classroom observations, and results were similar to those of self-report data. The participants were observed to use the digital components of coursebooks most frequently in listening and reading activities. This parallel result of self-report and classroom-observation data contradicts the proposition that participants might overstate their use of ICT and that self-report is thus unreliable as a method of data collection (Cuban, 2001). In terms of methodology employed, a mix of observation, self-report, and interview allows for multiple perspectives. This original standpoint is new, as compared to other studies reported in the literature review; it therefore provides a more critical perspective, more reliable outcomes, and a richer insight into teachers' views and on-the-ground experiences of using digital components of coursebooks.

Despite the significance of this study, it nevertheless has some limitations, the first regarding location. As this study was conducted at a state university in southeast Turkey, the participants recruited for the study were limited to the specific institution. Furthermore, the investigation was limited to the coursebook package selected and used by the institution. This study could be replicated somewhere else, using the same combination of methods, to confirm its generalizability. Therefore, future studies might be conducted with participants from different institutions and/or using different coursebook packages, which would produce a variety of data on EFL teachers' views and use of the digital components of coursebooks. Another limitation was the nature of classroom observations. The researcher's presence as a visitor observing classrooms for 50 minutes might have affected the behaviors of teachers as well as students. Further studies might employ video recordings to collect data pertaining to the use of digital components in EFL classrooms. Finally, inclusion of learners' views on the use of digital tools might yield valuable results in future research.

References

Allen, C. (2015). Marriages of convenience? Teachers and coursebooks in the digital age. *ELT Journal*, *69*(3), 249–263.

https://doi.org/10.1093/elt/ccv005

Andrews, R. (2000). Learning, literacy and ICT: What's the connection? *English in Education*, *34*(3), 3–18.

https://doi.org/10.1111/j.1754-8845.2000.tb00580.x

Balanskat, A., Blamire, R., & Kefala, S. (2006). The ICT impact report a review of studies of ICT impact on schools in Europe.

Bax, S. (2003). CALL—past, present and future. *System*, *31*(1), 13–28. https://doi.org/10.1016/S0346-251X(02)00071-4

Cinkara, E. (2016). An ethnographic investigation of activity modifications in EFL classrooms. *International Online Journal of Educational Sciences*, *8*(1), 107–117. https://doi.org/10.15345/iojes.2016.01.010

Clyde, & A., L. (2004). Electronic whiteboards. *Teacher Librarian*, *32*(1), 43–44.

Cox, M., Cox, K., & Preston, C. (2000). What motivates teachers to use ICT? In *British Educational Research Association Annual Conference*. Education-line.

Cuban, L. (2001). *Oversold and underused: Computers in the classroom*. Cambridge, MA: Harvard University Press.

Dudeney, G., & Hockly, N. (2012). ICT in ELT: how did we get here and where are we going? *ELT Journal*, *66*(4), 533–542.

https://doi.org/10.1093/elt/ccs050

Elaziz, M. (2008). *Attitudes of students and teachers towards the use of interactive whiteboards in EFL classrooms*. Retrieved from http://www.thesis.bilkent.edu.tr/0003608.pdf

Eshet-Alkalai, Y., & Chajut, E. (2009). Changes over time in digital literacy. *Cyber Psychology & Behavior*, *12*(6), 713–715.

https://doi.org/10.1089/cpb.2008.0264

Garrison, D., Anderson, T., & Archer, W. (2000). Critical Inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, *2–3*, 87–105.

https://doi.org/10.1016/S1096-7516(00)00016-6

Gillen, J., Staarman, J. K., Littleton, K., Mercer, N., & Twiner, A. (2007). A "learning revolution"? Investigating pedagogic practice around interactive whiteboards in British primary classrooms. *Learning, Media and Technology*,

32(3), 243–256.

https://doi.org/10.1080/17439880701511099

Glover, D., & Miller, D. (2001). Running with technology: the pedagogic impact of the large-scale introduction of interactive whiteboards in one secondary school. *Journal of Information Techology for Teacher Education*, *10*(3), 257–278. https://doi.org/10.1080/14759390100200115

Gunduz, N. (2005). Computer assisted language learning. *Journal of Language and Linguistic Studies*, *1*(2), 193–214.

https://doi.org/10.17263/jlls.24391

Hismanoglu, M. (2011). The integration of information and communication technology into current ELT coursebooks: A critical analysis. *Procedia - Social and Behavioral Sciences*, *15*, 37–45.

https://doi.org/10.1016/j.sbspro.2011.03.048

Idrees, I. A. (2010). Information & communication technologies in ELT. *Journal of Language Teaching and Research*, *1*(3), 211–214. https://doi.org/10.4304/jltr.1.3.211-214

Jose, J., Jafre, M., & Abidin, Z. (2015). Application of information and communication technology tools for English language teaching in an Omani context. *Arab World English Journal (AWEJ) Special Issue on CALL*, (22), 51–67. Retrieved from www.awej.org

Kelley, P., Underwood, G., Potter, F., Hunter, J., & Beveridge, S. (2007). Viewpoints. *Learning, Media and Technology*, *32*(3), 333–347. https://doi.org/10.1080/17439880701511164

Kennewell, S., & Beauchamp, G. (2007). The features of interactive whiteboards and their influence on learning. *Learning, Media and Technology*, *32*(3), 227–241. https://doi.org/10.1080/17439880701511073

Korkmaz, G., & Basaran, S. D. (2016). İngilizce ogretiminde oxford itools ve itutor yazilimlari kullaniminin hazirlik sinifi ogrencilerinin akademik basarisina etkisi [Using oxford itools and itutor software in English language teaching and its effect on preparatory class students' academic achievement]. *International Journal of Curriculum and Instructional Studies*, *6*(11), 55–70.

Mahadii, M. A., & Shahrill, M. (2014). In pursuit of teachers' views on the use of textbooks in their classroom practice. *International Journal of Education*, *6*(2), 149.

https://doi.org/10.5296/ije.v6i2.5637

Mâţă, L., Lazăr, I., & Lazăr, G. (2015). A literature review of studies based on investigating attitudes towards interactive boards. *Journal of Innovation in*

Psychology, Education and Didactics, *19*(1), 91–100.

Mitsikopoulou, B. (2014). Materials design for the digital enrichment of the Greek EFL textbooks. *Research Papers in Language Teaching and Learning*, *5*(1), 48–69.

Mitsikopoulou, B. (2016). Digital enrichment of EFL textbooks. In Psaltou-Joycey A., Agathopoulou E. & Mattheoudakis M. (Eds.), *Cross-curricular Approaches to Language Education* (404-430). London: Cambridge Scholars Publishing.

Mozejko, Z. P., & Krajka, J. (2011). A Framework for evaluating digital coursebooks. *Academic Exchange Quarterly, 15(1), 167*-173.

O'Hagan, C. (1999). Embedding ubiquitous use of educational technology: Is it possible, do we want it and, if so, how do we achieve it? *Journal of Educational Technology & Society*, *2*(4), 19–22.

O'neill, R. (1982). Why use textbooks? *ELT Journal*, *36*(2), 104–111. https://doi.org/10.1093/elt/36.2.104

Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, *7*(4), 1-13.

Richards, J. (1993). Beyond the text book: The role of commercial materials in language teaching. *RELC Journal*, *24*(1), 1–14. https://doi.org/10.1177/003368829302400101

Richards, J. C., & Renandya, W. A. (2002). *Methodology in Language Teaching: An Anthology of Current Practice*. London: Cambridge University Press.

Rollins, K. B. (2011). *Classroom observations of instructional practices and technology use by elementary school teachers and students in an ethnically-and economically-diverse school district*. Texas A&M University.

Rovai, A. P. (2004). A constructivist approach to online college learning. *Internet and Higher Education*, *7*(2), 79–93.

https://doi.org/10.1016/j.iheduc.2003.10.002

Sheldon, L. E. (1988). Evaluating ELT textbooks and materials. *ELT Journal*, *42*(4), 237–246. https://doi.org/10.1093/elt/42.4.237

Toscu, S. (2013). *The impact of interactive whiteboards on classroom interaction in tertiary level English as a foreign langauge classes. Unpublished thesis.*

Turel, Y. K., & Johnson, T. E. (2012). Teachers' belief and use of interactive whiteboards for teaching and learning. *Educational Technology and Society*, *15*(1), 381–394. https://doi.org/10.1111/j.1467-8535.2005.00508.x

Tzortzidou, S., & Hassapis, G. (2001). Assessment of the reading skill improvement in the computer-assisted teaching of a foreign language. *Education and Information Technologies*, *6*(3), 177–191.

https://doi.org/10.1023/A:1012558107689

Warschauer, M. (2000). An electronic literacy approach to networkbased language teaching. In M. Warschauer & R. G. Kern (Eds.), N*etwork-based language teaching: concepts and practice* (pp. 171–185). London: Cambridge University Press.

Wen-Cheng, W., Chien-Hung, L., & Chung-Chieh, L. (2011). Thinking of the textbook in the ESL/EFL classroom. *English Language Teaching*, 4(2), 91-97. https://doi.org/10.5539/elt.v4n2p91

Yilmaz, Y. Y. (2015). Learning vocabulary in a foreign language : A computer software based model attempt. *Journal of Language and Linguistics Studies*, *11*(2), 23–38.

İngilizce Öğretmenlerinin Dijital Bileşen Kullanımının İncelenmesi: Özbildirim ve Sınıf Gözlemi Kanıtları

Atıf:

Özet

Problem Durumu: Dünya genelinde kullanılan yabancı dil öğretimi programları, ders kitaplarını birincil öğretim aracı olarak görmeye devam ediyor. Ders kitaplarının kullanım amaçları arasında sınıf içi öğrenme ve öğretmen etkinlikleri ve sınıf dışı öğrenmeyi düzenlemeyi, bir dersin temel içeriğini sağlayan standart ve kolay erişilebilir öğrenme kaynakları olmalarını ve öğretmenler ve öğrenciler için eğitim programını düzenlediğini sıralayabiliriz. Ders kitapları dil öğreniminde önemli bir rol oynamaktadır ve bu sebeple İngilizcenin Yabancı Dil olarak öğretilmesi araştırmalarına sıklıkla konu olmuştur. Teknolojinin de gün geçtikçe gelişmesi ile birlikte, ders kitapları ve ders kitabı paketleri yeni teknolojilerin ortaya çıkarttığı imkanları da kapsayacak şekilde gelişmiştir. Bunun sonucu olarak, İngilizce kitapları paketlerine önemli bir ilave de bilgisayarla donatılmış sınıflar için ders kitabı yazılımlarının geliştirilmesi ve öğretmenlerin kullanımına sunulması olmuştur.

Araştırmanın Amacı: Bu çalışmayı güdüleyen iki temel amaç vardır: birincisi İngilizce öğretmenlerinin bu yazılımların gerekliliği ile ilgili tutumlarını ve düşüncelerini araştırmak; ikincisi de öğretmenlerin bu yazılımları ders anlatımlarında ne kadar sıklıkla ve hangi sebeplerden dolayı kullandıklarını belirlemektir.

Araştırmanın Yöntemi: Bu çalışmada nitel ve nicel araştırma yöntemlerinin bir arada kullanıldığı bir karma araştırma deseni kullanılmıştır. Yukarda verilen amaçları gerçekleştirebilmek için üç farklı veri toplama aracı kullanılmıştır: a) anket, b) sınıf içi

gözlem formu ve c) gözlem sonrası yarı yapılandırılmış görüşme. Araştırma 2016-2017 akademik yılı içerisinde Güneydoğu Anadolu bölgesindeki bir devlet üniversitesinin Yabancı Diller yüksekokulu bünyesinde görevli İngilizce okutmanları ile yapılmıştır. İlk olarak anket çalışması için 74 İngilizce öğretmeni katılımcı olarak çalışmaya dahil olmuştur ve bunlar arasından 14 gönüllü sınıf içi gözlem aşamasına dahil edilmiştir. Gözlemler araştırmacı tarafından gerçekleştirilmiş ve bu çalışma kapsamında hazırlanan gözlem formu doldurulmuştur. Gözlemlerden sonra ger bir öğretmen bireysel olarak yarı yapılandırılmış görüşmeye alınmıştır.

Araştırmanın Bulguları: Bu araştırma sonrasında elde edilen bulgular öğretmenlerin genel olarak bu yazılımların sınıf içerisinde ve dışarısında kullanımlarına karşı olumlu bir tutumlarının olduğu belirlenmiştir. Bunun yanında beceri temelli dil öğretiminde bu tarz yazılımların kullanılması ile ilgili tutumları incelendiğinde, dinleme becerisinin öğretilmesinde bu yazılımların kullanılmasına karşı tutumlarının en yüksek seviyede olduğu ve yazma becerisinde kullanılmasına karşı tutumlarının da en düşük seviyede olduğu belirlenmiştir. Sınıf içi gözlem formu sonuçları incelendiğinde öğretmenlerin 700 dakika içerisinde ilgili yazılımı 143 dakika aktif bir şekilde kullandıkları; 511 dakika yazılımın pasif olarak tahtaya yansıdığı ve 46 dakika da yazılımın ve/veya bilgisayarın kapalı konumda olduğu tespit edilmiştir. Gözlem verisinin dil becerileri açısında değerlendirilmesi sonucunda, bu yazılımın en yoğun şekilde kullanıldığı beceri dinleme (57 dakika) ve okuma (38 dakika) becerileri etkinlikleri, en az kullanıldığı beceri de yazma olarak belirlenmiştir (0 dakika). Yarı yapılandırılmış görüşmeler içerik analizi ile incelenmiş ve öğretmenlerin bu yazılımı kullanma sebepleri üç temel tema altında sıralanmıştır: İçeriğin etkin sunulması, dersin verimli işlenmesi ve sınıf yönetimi.

Araştırmanın Sonuçları ve Önerileri: Bu çalışmada elde edilen öz-rapor sonuçları, EFL öğretmenlerinin, ders kitapları tarafından sağlanan yazılım araçlarını kullanarak öğretim faaliyetlerini gerçekleştirme konusunda oldukça olumlu tutumlara sahip olduklarını ortaya koymuştur. İnternet bağlantısı olan bilgisayarlar, projeksiyon cihazları ve hoparlör sistemleri gibi birçok bilgi ve iletişim teknolojisi araçlarıyla donatılmış sınıfların yanı sıra, ev sahibi kurumda verilen teknolojik araçlarının etkin kullanımı ile ilgili hizmet içi eğitimler öğretmenlerin olumlu tutumları teşvik etmektedir. Bu çalışmada ayrıca, ilgili yazılımın etkinliği ile ilgili becerilere özel görüşleri ayrıntılı olarak analiz edilmiştir. Dinleme ve okuma becerileri öğretiminde bu yazılımın en sık kullanıldığı belirlenmiştir. Bunun yanında öğretmenlerin bilgi ve iletişim teknolojileri kullanımıyla öğrencilerin okuma başarısını ve performansını artırdığını ortaya koyan araştırmalar da bu bulguyu desteklemektedir. Dolaysıyla öğretmen yetiştiren eğitim fakültelerinde ve hizmet içi eğitim faaliyetlerinde bu durum göz önünde bulundurulmalı ve öğretmenlere bu teknolojileri en etkin bir şekilde kullanabilecekleri beceriler kazandırılmalıdır. Bu çalışmanın bulguları, en az yaygın kullanılan becerilerin bilgi ve iletişim teknolojileri kullanımı yoluyla etkileşimli bir şekilde etkinlik gerçekleştrmenin zor olduğu yazma becerisi olduğunu ortaya koymaktadır. Yazma becerisi etkinlikleri için, öğrencilerin ve öğretmenlerin, hızlı ve doğru bir şekilde yazma gibi temel bilgi ve iletişim teknolojisi becerilerine sahip olmaları gerekmektedir. Dolayısıyla, yazma etkinliklerinde bu tarz yazılımların

kullanılması, bu araçları kullanmak isteyen öğretmenler ve öğrencilere ek bir yük getirerek kullanımını zorlaştırmaktadır.

Yazılımın sınıf içerisinde kullanımı ile ilgili veriler sınıf gözlemleri ile ve öz raporlama (anket) ile toplanmış ve birbirleri ile karşılaştırılmıştır. Elde edilen veriler bu iki yöntemin benzer sonuçlar ortaya çıkardığını göstermiştir. Öz raporlama ve sınıf gözlemi verilerinin benzer sonuçlar ortaya çıkartması öz raporlamanın veri toplama yöntemi olarak bilgi ve iletişim teknolojileri kullanımını gereğinden fazla gösterebileceği iddiasıyla çelişmektedir.

Anahtar Sözcükler: Sınıf içi etkinilikler, kitapların dijital destekleri, etkileşim, dil öğretimi, öğretmen tutumları.

Appendix 1. The Classroom Observation Form (COF)

Digital Components of EFL Textbooks Classroom Observation Form		Focus of observation: ………………………………………………………………		
Level: ………	Room: ………	Number of students: ………………	Date: ………………	Duration: ………………
Coursebook: ……………………………………… **Digital component (DC):** ……………………………			**Unit: …………………………………..**	
Page #	**Activity Skill**	**DC Start – Finish Time**	**Details**	

Appendix 2. Interview Structure

Warm up:
Short discussion about the observed lesson and teacher performance.
Questions:
Do you typically use the tool in listening activities?
Do you typically use the tool in speaking activities?
Do you typically use the tool in reading activities?
Do you typically use the tool in writing activities?
Why do you use it in general and for specific skills?
Is there any aspect of the tool you would like to change?
Cooling down:
Talking about the students: their profile and overall performance.

Socioeconomic Profile of Early Childhood Education Preservice Teachers

Merve UNAL[1], Gokce KURT[2]

ARTICLE INFO	ABSTRACT
	Purpose: Teachers are key determiners of quality education, and regarding young children in particular, the quality of teachers can have a remarkable influence on the quality of education. However, research on the socioeconomic profile of preservice teachers at university remains rare in Turkey, especially eastern Turkey, where living conditions are below of the national average. In our study, the socioeconomic profile of 2,115 early childhood teacher candidates in faculties of education at state universities in the Eastern and Southeastern Anatolian Regions of Turkey was examined. The study aimed to determine the rank order of students' preferred early childhood education bachelor programs and the reasons for their preferences.

Methods: The descriptive profile research sought to identify the socioeconomic profile of preservice early childhood teachers recruited from 11 state universities. Participating students were asked several questions concerning the socioeconomic aspects of their university life in four domains: demographic and economic characteristics, education budget, family socioeconomic composition, and educational and sociocultural background. Descriptive analyses were performed to analyze the data. **Results:** The findings revealed that the students were mostly from low-income families. Most students ranked an early childhood education bachelor program among their top five choices on university selection exams. The top three reasons for their choosing early childhood education as a profession were love for children and the profession, the convenience of teacher appointment and satisfactory wage levels at state preschools, and the convenience and enjoyment of preschool teaching. **Implications for Research and Practice**: Most students were members of low-income families, for whom social, cultural, and sportive activities need to be more accessible. Similar studies should be repeated in other geographical regions of Turkey with students from other university departments and faculties in order to clarify the socioeconomic composition of university students, develop more effective bachelor programs, and improve student life at Turkish universities.

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Introduction

Early Childhood Teacher Education in the Context of Turkey

Given the importance of the first 7 years of life for a person's overall development, investing in early childhood education (ECE) can result in positive gains for not only the person but also the society (Bakken, Brown, & Downing, 2017; Daglioglu, 2014; Haktanir, 2014; Reynolds, Ou, Mondi, & Hayakawa, 2017; UNESCO, 2016; UNICEF, 2015). During the past three decades, enrollment in ECE in Turkey has increased significantly. The preschool enrollment rate in the 1980–1981 academic year was only 1.90% for all ages, whereas by the 2016–2017 academic year, the rates of preschool enrollment were 35.52% for 3–5-year-olds, 45.70% for 4–5-year-olds, and 58.79% for 5-year-olds (Ministry of National Education [MoNE], 2010, 2017). Despite significantly increased preschool enrollment rates in Turkey during recent decades, such rates remain below the 95% preschool enrollment target of the European Union (UNICEF, 2013).

At the same time, the increased rates have required more preschool teachers who have graduated from Turkish universities to work as preschool teachers. Since 1981, higher education programs in Turkey have been supervised by the Council of Higher Education (CoHE), which is responsible for the planning, coordination, and governance of higher education institutions in Turkey (CoHE, 2014), and the first preschool teachers with bachelor's degrees from 4-year preschool teacher education programs in Turkey graduated in 2002 (Daglioglu, 2014). Acceptance to such bachelor programs depends upon the composite score of the applicant's secondary-school grade point average (GPA) and centralized university Student Selection Exams (SSE) score, which determine the placement of applicants at higher education institutions. According to the Student Selection and Placement Centre (SSPC, 2014), Turkey has 54 state universities and nine private universities that offer undergraduate programs in ECE, and 25 of those state universities offer daytime and evening classes. Students who have graduated from four-year ECE programs are appointed to public preschools and kindergartens depending on their Public Personnel Selection Examination (PPSE) results or employed by private preschools and kindergartens. The PPSE is a centralized examination in Turkey administered by the Student Selection and Placement Centre to appoint state officials; teacher candidates who take the PPSE are assessed in four subjects: general culture (i.e., history, geography, citizenship, and contemporary topics in Turkey and worldwide), general ability (i.e., verbal and mathematical reasoning), educational sciences, and knowledge in specific teaching professions (SSPC, 2013).

Quality of Preschool Teaching Training

Because a major factor in educating a quality labor force is teachers (Erkan et al., 2002; World Bank, 2011), the background of teachers and their university experience seem to be important to the overall quality of education at all levels. Although the satisfaction of students with their university experience is also important to their future professional lives, such an experience can involve a demanding process for young adults, whose matriculation at university often marks the first time that they

have had to bear various academic, financial, and personal responsibilities (Vaez & Laflamme, 2008). Some researchers (e.g. Early et al., 2007; Lin & Magnuson, 2018) have discussed how university-level education or specialization in ECE was not the only determinant of teacher quality, while other have added that preservice and in-service teachers need to be supported by all means to make significant contributions to young children's lives (Egert & Fukkink, 2018). Moreover, universities are regarded to be the most suitable institutions to offer support for late adolescents and young adults who struggle with psychosocial, academic, and career-related problems (Hunt & Eisenberg, 2010). Given those circumstances, clarifying the socioeconomic profile of preservice teachers can significantly inform strategies to support preservice teachers in general.

Considering the importance of quality ECE, the MoNE (2008) has defined the qualifications of ECE teachers in seven major areas: knowledge of young children's development, competency in communicating with young children's families, support of family involvement and education, advanced communication skills, creativity and aesthetic awareness, collaboration with school staff and communities, and continued professional development. A closer look at those qualifications reveals that a qualified teacher needs to gain a quality ECE bachelor education supported by rich social, cultural, and creative experiences. Accordingly, examining ECE preservice teachers' socioeconomic profiles could be crucial to understanding the composition of the population group and what they need to become competent teachers.

A review of literature on the topic has revealed that socioeconomic profile studies have been more prevalent in developing countries, where problems related to educational attainment and employment are common and where teachers play especially important roles in transforming society (e.g. Akyeampong & Stephens, 2002; Coultas & Lewin, 2002; Su, Hawkins, Huang, & Zhao, 2001). Akyeampong and Stephens (2002) have concluded that to reap more benefits of teacher education, it is imperative to recognize teacher candidates' backgrounds. Similarly, the findings of this study can illuminate the preservice ECE teacher profile of Turkey's Eastern Anatolian Region, as well as ways to enrich students' university lives, which can raise the quality of teachers and education at preschools and kindergartens in Turkey.

However, studies focusing on university students' needs and ways to improve means to meet those needs are sparse in Turkey. A large-scale study with 164 universities in Turkey to determine the satisfaction of students at Turkish universities revealed that 60% of universities in Turkey did not provide a satisfactory university life for their students due to problems related to quality of education, campus life, academic support, the university administration, and the lack of opportunities provided for professional development (Karadag & Yucel, 2017). Furthermore, a preservice preschool teacher profile study conducted by Erkan et al. (2002) with 821 students recruited from eight state universities in Turkey revealed the need for such studies to be repeated with other ECE teacher samples in Turkey. ECE teacher recruitment from eastern regions is significant because, according to the Turkish Statistical Institute (TurkStat, 2015a, 2015b, 2016), the lowest rates of revenue and poorest living conditions were observed in cities in eastern and southeastern Turkey. In response, the purpose of this study was to determine the socioeconomic profile of

preservice ECE teachers and their families in Turkey and identify the rank order of preservice ECE teachers' preferences of preschool education program and the reasons for their preferences.

Method

Research Design

This descriptive profile study aimed to identify the socioeconomic profile of preservice ECE teachers recruited from 11 state universities in the eastern regions of Turkey. The study sought to particularly reveal students' current social, demographic, cultural, and individual characteristics (Erkan et al., 2002). In accordance with the descriptive profile methodology, descriptive analyses were performed throughout the course of the study.

Research Sample

The population of the study encompassed preservice teachers enrolled in ECE programs at state universities in the Eastern and Southeastern Anatolian regions of Turkey. Data were collected from all universities in those regions with students in their programs during data collection. An academic fellow from each university served as the gatekeeper in applying and collecting the questionnaires used in the study.

Research Instruments and Procedures

A socioeconomic profile questionnaire was developed by the researchers to gather data. The questionnaire involved a wide range of questions in four categories: demographic and economic characteristics (e.g., year of study, age, marital status, and family's monthly income), budget (e.g., amount of monthly financial support provided by the family, type of residence, monthly scholarship or loan, part-time employment status, and monthly income of part-time employment), family's socioeconomic composition (e.g., education status and profession of parents and number of siblings), and educational and sociocultural background (e.g., type of secondary school graduated from, rank order of preschool education program preferences on the centralized SSE, the top three reasons for choosing ECE as a profession, plans to pursue an academic career after graduation, membership in sports or social clubs, completion of ECE as a child, and current GPA). Questionnaire items were prepared by the researchers in the light of previous research (e.g., Erkan et al., 2002).

Permissions for data collection were granted by the universities. Academics from each ECE program were interviewed via phone and informed about the scope of the study. In spring semester 2014–2015, the questionnaires were hard copied and mailed to the responsible academics at each university. The questionnaires were disseminated to students during class, after which the academics collected the completed questionnaires and mailed them to the researchers. In 3 weeks, all questionnaires were collected, and a dataset on the Statistical Package for the Social Sciences was created in a month. A total of 3,000 questionnaires were sent to the programs, and 2,550 were returned, for a return rate of 85%. Of the 2,550 questionnaires returned, incomplete,

half-completed, and falsely completed ones were excluded. Ultimately, 2,115 questionnaires were included in analysis.

Data Analysis

Since the purpose of study was to describe the socioeconomic profile of students in ECE programs at Turkish universities, descriptive analyses were performed throughout the study period. Frequencies, percentages, means, standard deviations, ranges, and minimum and maximum values were computed and tabulated. Frequencies were used in the analysis of the qualitative data to clarify the reasons for students' choice of ECE as a profession.

Results

Demographic and Economic Characteristics of the Sample

The sample included students enrolled in daytime and evening ECE programs at Agri Ibrahim Cecen University, Yuzuncu Yil University, Ataturk University, and Inonu University. All other universities had only daytime programs at the time of data collection. At Erzincan University, students were only in their first or second years of study. Descriptive values of the monthly support that students received from their families and their family monthly incomes appear in Table 1.

Table 1.

Descriptive Values of Students' Family Monthly Income and Monthly Support

	Family Monthly Income				Monthly Support		
	N	*M (SD)*	*Min*	*Max*	*M (SD)*	*Min*	*Max*
Adiyaman University	159	2,010.81(1,387.65)	200	10,000	202.76(204.27)	0	1,000
Agri Ibrahim Cecen University	295	1,953.90(1,096.25)	300	10,000	246.27 (244.5)	0	2,500
Ataturk University Erzurum	273	2,302.48(1,170.89)	400	7,000	301.83(226.55)	0	1,500
Dicle University Diyarbakir	136	1971.45 (902.43)	400	5,000	156.06 (150.3)	0	800
Erzincan University	69	1,671.29 (985.72)	200	5,000	227.78(158.50)	0	700
Firat University Elazig	182	2,008.15(1,038.08)	300	5,500	243.79(227.57)	0	2,000

Table 1 Continue

	Family Monthly Income				Monthly Support		
	N	M (SD)	Min	Max	M (SD)	Min	Max
Inonu University Malatya	338	2,191.58(1,770.19)	300	22,000	285.38(278.40)	0	4,000
Kafkas University Kars	132	1,968.96(1,040.50)	250	5,000	318.4 (207.95)	0	1,200
Kilis 7 Aralik University	177	2,027.27(1,363.38)	200	10,000	236.54(226.30)	0	1,400
Mus Alparslan University	130	2,048.53(1,497.80)	300	15,000	222.69(167.51)	0	1,000
Yuzuncu Yil University Van	224	2,105.30(1,132.30)	330	10,000	181.12(210.42)	0	2,000
Total	2115	2,066.67(1,294.27)	200	22,000	245.14(229.21)	0	4,000

*All monetary values in Turkish lira; 1 USD = 2.71 TL (Central Bank of the Republic of Turkey, 2015).

Regarding year of study, 520 students (24.6%) were first-year students, 666 (31.5%) were second-year students, 508 (24%) were third-year students, and 421 (19.9%) were fourth-year students. The students' age range was 17–36 years, and their mean age was 21.02 years (SD = 2.05). Most students (n = 1,715, 83.7%) were 18–22 years old. By gender, 366 students were men (17.3%) and 1,749 were women (82.7%). Only 3% of the students (n = 64) were married, whereas 97% (n = 2,051) were single.

Concerning financial support, 317 students (15%) indicated that they had no financial support provided by their families. Roughly a third (34.8%, n = 737) of the students resided in state dormitories, whereas another third (33%, n = 697) resided in their family homes; 18.2% (n = 384) resided with friends, 11.1% (n = 235) resided in private dormitories, and the rest (2.9%, n = 62) lived alone or with relatives. Most students had a scholarship or loan provided by the state (71.6%, n = 1,515) or private organizations (9.3%, n = 197). The mean monthly scholarship or loan amount provided by the state was 327.82 Turkish lira (TL) and 389.67 TL by private organizations. Few students (3.8%, n = 81) worked part-time, although ones who did earned a mean monthly income of 754.32 TL.

Socioeconomic Composition of Families

To clarify the socioeconomic composition of families, the education and employment status of students' parents are examined in this section. The education levels of their parents are depicted in Table 2.

Table 2

Descriptive Values of the Education Status of Students' Parents

Education level	Mothers		Fathers	
	f	*%*	*f*	*%*
Less than primary school	746	35.2	189	8.9
Primary school	838	39.6	670	31.7
Elementary (Secondary 1st. phase) school	249	11.8	372	17.6
High school (Secondary 2nd. phase) school	198	9.4	483	22.8
Two-year undergraduate (Associate)	29	1.4	111	5.2
Undergraduate (Bachelor)	52	2.5	253	12.0
Master's degree	2	0.1	26	1.2
Doctoral degree	1	0.0	11	0.5
Total	2,115	100.0	2,115	100.0

Among students' parents who had not completed primary education, most mothers (*n* = 521, 24.6%) had no reading and writing skills at all, whereas 10.6% (*n* = 225) of mothers had basic reading and writing skills. Table 3 shows the employment status of students' parents.

Table 3

Descriptive Values of the Employment Status of Students' Parents

Employment status	Mothers		Fathers	
	f	*%*	*f*	*%*
Retired	24	1.13	409	19.33
Civil servants	28	1.32	300	14.20
Teachers	40	1.90	140	6.62
Private sector employees	53	2.50	1,079	51.01
Unemployed	1,902	89.90	29	1.37
No response	68	3.21	158	7.47
Total	2,115	100.00	2,115	100.00

Table 3 indicates that most students' fathers (51.01%) were employed in the private sector, whereas most of their mothers (89.9%) were unemployed or housewives. Compared to their mothers, the unemployment of fathers of students in the sample was only 1.37%. To elucidate the socioeconomic composition of families, the number of siblings of the students is tabulated in Table 4.

Table 4

Descriptive Values of the Number of Siblings of Students

Number of siblings	f	%
No sibling	22	1.04
1 sibling	240	11.35
2 siblings	472	22.31
3 siblings	433	20.47
4 siblings	314	14.84
5 or more siblings	634	29.97
Total	2,115	100

*Applicable to the graduates of vocational high schools for girls

Table 4 shows that the students overwhelming came from large families. Only 1.04% of students were from single-child families, whereas 29.97% of the students had 5 or more siblings.

Educational Background and Sociocultural Aspects of the Sample

The majority of students (*n* = 1,690, 79.9%) did not receive any kind of ECE. The students had graduated from various types of secondary schools; 28.3% (*n* = 559) were graduates of vocational high schools for girls, 27.2% (*n* = 576) were graduates of Anatolian high schools, 25.5% (*n* = 540) were graduates of common high schools, 4.1% (*n* = 87) were graduates of high schools for aspiring teachers, whereas the rest (14.9%, *n* = 313) were graduates of health vocational, foreign language intensive, multiprogram, religious vocational, open, private, science-oriented, social studies-oriented, or sports-oriented high schools.

The top three reasons for students' choice of ECE undergraduate program were gauged with an open-ended question, responses to which are presented in Table 5.

Table 5

Reasons for Preferring a Profession in Early Childhood Education

Reasons	1st rank	2nd rank	3rd rank	Total
	f (%)	*f (%)*	*f (%)*	*F*
Love for children and the profession	947 (44.8)	710 (33.6)	542 (25.6)	2,199
Convenience of teacher appointment and satisfactory wage levels at state preschools	485 (22.9)	417 (19.7)	375 (17.7)	1,277
Convenience and enjoyment of early childhood education	90 (4.3)	205 (9.7)	209 (9.9)	504
Recommendations of parents and relatives	114 (5.4)	118 (5.6)	111 (5.2)	343
Predictive power of the centralized university entrance examination	93 (4.4)	51 (2.4)	54 (2.6)	198
Extra score added to the centralized university entrance examination*	62 (2.9)	38 (1.8)	30 (1.4)	130
Enrollment in university in order to relocate away from family	48 (2.3)	27 (1.3)	31 (1.5)	106
Preparation to be a good parent	24 (1.1)	21 (1.0)	15 (0.7)	60

*Applicable to graduates of vocational high schools for girls

Approximately a quarter (25.1%, *n* = 531) of students indicated that they listed their current ECE program as their first choice on the centralized university SSE, whereas 8.7% (*n* = 183) listed the program as their second choice, 8.5% (*n* = 179) as their third, 5.8% (*n* = 123) as their fourth, 6.0% (*n* = 126) as their fifth, and 45.9% (*n* = 973) as their sixth or lower choice. Students were also asked about their current GPA, and their answers appear in Table 6.

Table 6

Descriptive Values of Students' Current Grade Point Averages

University	*N*	*M (SD)*	Min	Max
Adiyaman University	159	3.04 (0.32)	2.00	3.80
Agri Ibrahim Cecen University	295	2.97 (0.39)	1.80	2.97
Ataturk University, Erzurum	273	2.91 (0.4)	1.38	3.92
Dicle University, Diyarbakır	136	2.98 (0.25)	1.65	3.96
Erzincan University	69	2.76 (0.58)	1.30	3.80
Firat University, Elazığ	182	3.13 (0.35)	1.88	4.00

Table 6 Continue

University	N	M (SD)	Min	Max
Inonu University, Malatya	338	2.82 (0.43)	1.43	2.82
Kafkas University, Kars	132	2.94 (0.41)	1.50	2.94
Kilis 7 Aralık University	177	2.79 (0.45)	1.50	3.78
Mus Alparslan University	130	2.88 (0.49)	1.50	2.88
Yuzuncu Yil University, Van	224	2.96 (0.34)	1.86	3.83

When asked about their intent to pursue an academic career, 51.3% of students (n = 1,084) indicated that they had considered an academic path for the future. In terms of extracurricular activities, 13% (n = 276) of students reported being members of social or sports clubs at their universities. The most popular clubs among the students sampled were early childhood societies, community volunteer organizations, clubs stressing social responsibilities, and theater groups.

Discussion, Conclusion, and Recommendations

As indicated by the demographic and economic characteristics of students in the sample, 17.3% of the students were men. By contrast, in a profile study conducted with preservice ECE teachers, Erkan et al. (2002) showed that only 7.3% of the students were men. The increase in the number of men among preservice ECE teachers is promising given that ECE is largely perceived as a women's field in Turkish society because it demands the nurturing, loving, and caring for young children. However, one's decision to pursue a profession not generally preferred by his or her gender can pose some challenges (Newman & Newman, 1991). Anliak and Sahin Beyazkurk (2008) have discussed that reasons such as stereotypical perceptions of ECE professions, their low pay and status, and hesitation about risking abuse for their choice could explain the lack of increased interest among men in ECE professions in Turkey. Nevertheless, as participants in our study exemplified, an explanation for the increased percentage of men among the ranks of preservice ECE teachers could be an increased interest in the teaching profession due to the perceived convenience of state appointment and the promise of satisfactory wages. Teachers who graduate from faculties of education in Turkey are appointed by the state based on their PPSE scores, which guarantees them jobs upon graduation, as well as several benefits, including defined work hours, a stable salary, social security, and holidays, all of which make the teaching profession appealing to young Turks (Aldemir & Kurt, 2014; Yuce, Sahin, Kocer, & Kana, 2013; Yuksel, 2012).

The mean family monthly income among students in the sample was 2,066.67 TL, 41.8% of the students' family monthly incomes were less than 1,999.00 TL, and the mean number of children in their families was 4.8. Although government data regarding the limits of income levels in Turkey remain unavailable, the limits of low

income levels can be gleaned from data provided by various labor unions. For instance, in May 2015, the Confederation of Turkish Trade Unions (2015) stated that the starvation level of a four-person family was 1,333.52 TL and that the poverty level was 4,343.7 TL. Compared to those levels, most students in our study were members of large, low-income families. TurkStat (2015c) also revealed that 22.4% of Turkish families functioned below the poverty line in 2014. Although the families of students in our sample were low-income families, the rate of part-time employment among the students was quite low (3.8%), which could have resulted from the limited opportunities for part-time work on university campuses and in nearby cities or students' preference to study for the PPSE instead of engaging in part-time work given their goal to be appointed as an ECE teacher by the state. The mean amount of monthly financial support among students provided by their families was 245.14 TL, and 15% of students stated that they did not receive any support whatsoever from their families. Considering the 2015 starvation level of 1,333.52 TL for a four-person family, the mean amount of financial support for one student is remarkably low. The regional results of a study on revenue and living conditions in Turkey (TurkStat, 2015a, 2016) indicated that the cities of Mardin, Batman, Şırnak, Siirt, Şanlıurfa, Diyarbakır, Van, Muş, Bitlis, and Hakkari in the Eastern and Southeastern Anatolian Regions of Turkey ranked among Turkish cities with the lowest rates of per capita usage of mean annual family income. Low income levels and high numbers of children in their families could explain the low levels of financial support that the students in our sample received.

Findings concerning the socioeconomic composition of families indicated that 24.6% of students' mothers and 4.1% of their fathers had no reading or writing skills whatsoever and that only 2.5% of their mothers and 12.0% of their fathers had bachelor's degrees. Such figures confirm the sharp difference in educational attainment among mothers and fathers of preservice ECE teachers in Turkey. Despite compulsory primary education in Turkey, the illiteracy rate of Turkish women remains a serious problem in the eastern regions of country. As indicated by TurkStat (2015d), the rate of illiteracy was five times greater for women than men in Turkey in 2014. Ucecam Karagel (2009) has reported that gender inequality in illiteracy rates has risen in the East Anatolian Region of Turkey to the disadvantage of women. The obstacles to girls' schooling in certain regions of Turkey have also been discussed by Alat and Alat (2011). Our results also revealed that 89.9% of the students' mothers were housewives. That rate of unemployment for women is far below of the European Union average of 58.8% and even below of the 30.8% average in Turkey (TurkStat, 2015d). Most of the students' fathers were employed in the private sector, whereas only 6.62% were teachers. Moreover, the teaching profession of fathers did not seem to be an important factor of students' preference to pursue work as teachers.

The educational and sociocultural background of students in the sample indicates that 79.9% of students did not receive any kind of ECE. UNICEF (2015) has observed a relationship between ratios of preschool enrollment and women's participation in the workforce. In our sample, the students' families might not have sought ECE for their young children given the financial burden of ECE and the mother's traditional role to provide childcare in Turkish culture. Brilli, Kulic, and Triventi (2017) have

recently added that the education of mothers determines the age at which their children begin to receive childcare outside the home. Although improved ECE has been geared toward advancing the quality and accessibility of primary education in Turkey and though universal enrollment in kindergarten for children 60–72 months old was a goal of the MoNE at the beginning of the 2014–2015 academic year (World Bank, 2011), ECE has been restructured with the last changes in the education system (MoNE, 2012), and 37–66-month-old children's enrollment in preschool is still not compulsory.

More than a quarter (28.3%) of the sample graduated from vocational high schools for girls. Not only should such students have a better conceptualization of ECE teaching and thus a surer preference to attend an ECE program at university, but the additional points that they automatically received on their SSE scores due to graduating from a vocational school likely supported their preference. Although the types of secondary schools from which students in the sample graduated varied, secondary education in Turkey is generally defined as a 4-year compulsory educational process that prepares students for higher education. Whereas common high schools provide students with general courses and culture, programs at Anatolian high schools are enriched with foreign-language teaching. Conversely, high schools for aspiring teachers and both vocational and technical secondary schools aim to prepare students for occupational fields (MoNE, 2017). The diversity of high schools from which preservice ECE students graduate in Turkey diversifies the composition of ECE students at Turkish universities, although such variety has been criticized as a source of lifelong inequality (World Bank, 2011).

More than half of students (54.1%) declared that they had listed an ECE bachelor program among their top five choices for university education, which reflects the results of Erkan et al. (2002). Furthermore, the mean current GPA among the students was 2.93 on a 0.00–4.00-point scale, and half of them (51.3%) reported their intent to pursue an academic career. Although such findings illustrate the students' eagerness for academic study, as the World Bank (2011) has indicated, only 5.8% of teachers in Turkey had master's or doctoral degrees in 2010, which suggests that additional incentives would raise the number of teachers with M.Ed. degrees in the country.

When asked to state their top three reasons of their preference of ECE teaching, students on average indicated their love for children and the profession, the convenience of teacher appointment and satisfactory wages at state preschools, and the convenience and enjoyment of ECE teaching. Related benefits of state appointment, including defined work hours, a stable salary, social security, and the enjoyment of working with young children, could also explain their responses (Aldemir & Kurt, 2014; Yuce, Sahin, Kocer, & Kana, 2013; Yuksel, 2012). Similar reasons for choosing the teaching profession have been documented in other studies (e.g. Aldemir and Kurt, 2014; Erkan et al., 2002; Manuel & Hughes, 2006). Kilinc, Watt, and Richardson (2012) investigated the rationale for becoming a teacher among Turkish preservice teachers of early childhood, primary, and secondary education, and their results indicated that altruistic social values were the most compelling reasons, followed by job security. Those authors proposed that inequality and

insecurity in developing countries, as well as collectivistic values, could make intrinsic values and teaching abilities less important for Turkish students than for Western ones.

The percentage of students in the sample who participated in social and sportive clubs was low (13%). The student involvement theory developed by Astin (1984) suggests that as the student involvement in academic and extracurricular activities increases at universities, the greater the academic and personal benefits possible. Therefore, as Ersay and Yazcayir (2014) have proposed, universities should not only educate students academically but also provide them with opportunities for personal and socioemotional development. At Turkish universities, including elective courses requiring participation in diverse activities should increase students' participation in social life at university.

Altogether, the most striking findings of the study were low income levels of the families of students in ECE programs at universities in the Eastern and Southeastern Anatolian Regions of Turkey, their low rate of ECE attendance, participation in social and sportive clubs at university, and engagement in part-time work as well as the high rates of illiteracy and unemployment among their mothers. The findings also indicate that the students pursue university life on very limited budgets. It's clear that social, cultural, and sportive activities are especially important for low-income students who are liable to face barriers in accessing those activities. The quality of university life affects a person's professional life later on, particularly among preservice teachers, and thus exerts long-lasting effects on the lives of the children whom they teach. Studies have revealed that high-quality ECE is significant in helping young children to achieve their full potential (Whitebook, 2003). Considering the increase in ECE attendance in recent decades in Turkey, it is expected that more children will have an opportunity to begin their social and academic lives on the right foot and that women's participation in the workforce and educational attainment will increase in Turkey. Similar studies should be repeated in other geographical regions of Turkey to clarify the socioeconomic composition of students there and thereby develop more effective undergraduate programs and improve students' lives at universities in Turkey.

References

Akyeampong, K., & Stephens, D. (2002). Exploring the backgrounds and shaping of beginning student teachers in Ghana: Toward greater contextualization of teacher education. *International Journal of Educational Development, 22*(3), 261-274. doi: 10.1016/S0738-0593(01)00064-5

Alat, Z., & Alat, K. (2011). A qualitative study of parental resistance to girls' schooling. *Educational Sciences: Theory & Practice, 11*(3), 1369-1373.

Aldemir, J., & Kurt, G. (2014). A program review: The Turkish early childhood education preservice teachers' perceptions about teacher and teaching. *Sage Open, 4*, 1-11. doi: 10.1177/2158244014548847

Anliak, S., & Sahin Beyazkurk, D. (2008) Career perspectives of male students in early childhood education. *Educational Studies, 34*(4), 309-317. doi: 10.1080/03055690802034518

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, *25*(4), 518-529.

Bakken, L., Brown, N., & Downing, B. (2017). Early childhood education: The long term benefits. *Journal of Research in Childhood Education, 31*(2), 255-269.   doi: 10.1080/02568543.2016.1273285

Brilli, Y., Kulic, N., & Triventi, M. (2017). Who cares for the children? Family social position and childcare arrangements in Italy, 2002-12. In H. P. Blossfeld, N. Kulic, J. Skopek, & M. Triventi (Eds.), *Childcare, early education and social inequality: An international perspective* (pp.31-48). Cheltenham: Edward Elgar Publishing.

Central Bank of the Republic of Turkey (2015). *Indicative Exchange Rates Announced at 15:30 on 05/04/2015 by the Central Bank of Turkey.* On September 11th., 2017. http://www.tcmb.gov.tr/kurlar/201505/04052015.xml

Coultas, J. C., & Lewin, K. M. (2002). Who becomes a teacher? The characteristics of student teachers in four countries. *International Journal of Educational Development, 22*(3), 243-260. doi:10.1016/S0738-0593(01)00066-9

Council of Higher Education (2014). *Higher education system in Turkey.* On March 3rd., 2016 retrieved from http://www.yok.gov.tr/documents/10348274/10733291/TR%27de+Yükseköğretim+Sistemi2.pdf/9027552a-962f-4b03-8450-3d1ff8d56ccc

Daglioglu, E. H. (2014). Okul öncesi öğretmenin özellikleri ve okul öncesi eğitime öğretmen yetiştirme [Features of the preschool teacher and training preschool teachers]. İçinde G. Haktanir, *Okul öncesi eğitime giriş [Introduction to preschool education]* (pp. 41-78). Ankara: Anı Yayıncılık.

Early, D. M., Maxwell, K. L., Burchinal, M., Alva, S., Bender, R. H., Bryant, D., ... & Henry, G. T. (2007). Teachers' education, classroom quality, and young children's academic skills: Results from seven studies of preschool programs. *Child Development*, *78*(2), 558-580. doi:10.1111/j.1467-8624.2007.01014.x

Egert, F., Fukkink, R. G., & Eckhardt, A. G. (2018). Impact of in-service professional development programs for early childhood teachers on quality ratings and child outcomes: A meta-analysis. *Review of Educational Research 20*(10), 1-33. doi:10.3102/0034654317751918

Erkan, S., Tugrul, B., Ustun, E., Akman, B., Sendogdu M., Kargi, E., Boz, M., & Guler, T. (2002). Turkish profile research of preschool student teacher's. *Hacettepe University Journal of Education, 23,* 108-116.

Ersay, E, & Yazcayir, N. (2014). Yeni geliştirilen problem tarama envanteri (Mesleki eğitim fakültesi örneği) [New Developed Problem Screening Inventory]. *İnönü University Journal of the Faculty of Education, 15*(2), 65-88. doi: 10.17679/iuefd.10643

Haktanir, G. (2014). Türkiye Cumhuriyeti'nin kuruluşunun 100'üncü yılına doğru ülkemizde okul öncesi eğitim [The preschool education in the country towards the 100th. year of the constitution of the Republic of Turkey]. İçinde G. Haktanir, *Okul öncesi eğitime giriş* [*Introduction to preschool education]* (pp. 307-328). Ankara: Ani Yayincilik.

Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health*, *46*(1), 3-10. doi:10.1016/j.jadohealth.2009.08.008

Karadag, E. & Yucel, C. (2017). *Türkiye üniversite memnuniyet araştırması.* [Turkish universities satisfaction survey] Eskişehir: Üniversite Araştırmaları Laboratuvarı Yayınları. doi: 10.13140/RG.2.2.31233.76641

Kilinc A., Watt, H. M. G. & Richardson, P. W. (2012) Factors influencing teaching choice in Turkey, *Asia-Pacific Journal of Teacher Education, 40*(3), 199-226. doi: 10.1080/1359866X.2012.700048

Lin, Y. C., & Magnuson, K. A. (2018). Classroom quality and children's academic skills in child care centers: Understanding the role of teacher qualifications. *Early Childhood Research Quarterly, 42,* 215-227. doi: 10.1016/j.ecresq.2017.10.003

Manuel, J., & Hughes, J. (2006). "It has always been my dream": Exploring pre-service teachers' motivations for choosing to teach. *Teacher Development, 10*(1), 5-24. doi: 10.1080/13664530600587311

MoNE (2008). *Okul öncesi öğretmeni özel alan yeterlikleri [Preschool teacher competencies in specific areas]. On March 1st., 2016* retrieved from http://oygm.meb.gov.tr/meb_iys_dosyalar/2017_11/06160307_5-YYretmen_Yeterlikleri_KitabY_okul_Yncesi_YYretmeni_Yzel_alan_yeterlikleri_ilkYYretim_parYa_8.pdf

MoNE (2010). *Okul öncesi eğitim süreci iç denetim raporu [Preschool education internal audit report].* Retrieved March 1st., 2016 from http://icden.meb.gov.tr/digeryaziler/Okul_Oncesi_Egitim_Ic_Denetim_Ra.pdf

MoNE (2012). *Okul öncesi eğitim kurumları yönetmeliği [Regulations for preschool education intuitions].* Retrieved March 1st., 2016 retrieved from http://mevzuat.meb.gov.tr/html/25486_.html

MoNE (2015). *National education statistics, formal education.*

Retrieved March 1st., 2016 retrieved from
http://sgb.meb.gov.tr/istatistik/meb_istatistikleri_orgun_egitim_2014_2015.pdf

MoNE (2017). *National education statistics, formal education.*
Retrieved September 12nd., 2017 retrieved from
http://sgb.meb.gov.tr/meb_iys_dosyalar/2017_09/08151328_meb_istatistikleri_orgun_egi tim_2016_2017.pdf

Newman, B. M., & Newman, P. R. (1991). *Development through life: A psychosocial approach* (5th. Ed.). Pacific Grove: Brooks/Cole.

Reynolds, A. J., Ou, S.-R., Mondi C. F., & Hayakawa, M. (2017). Processes of early childhood interventions to adult well-being. *Child Development, 88,* 378-387. doi: 10.1111/cdev.12733

Student Selection and Placement Centre (2013). *Tablo 1. KPSS konuların dağılımı [Table 1. The content of PPSE tests].* On March 15th., 2016 Retrieved from http://osym.gov.tr/dosya/1-69095/h/kpss-tablo-1-konularin-dagilimi.pdf

Student Selection and Placement Centre (2014). *Tablo 4. Merkezi yerleştirme ile öğrenci alan yükseköğretim lisans programları [Table 4. Higher education programs accepting students through central placement].*
Retrieved March 15th., 2016 retrieved from
http://dokuman.osym.gov.tr/pdfdokuman/2014/OSYS/yerlestirme/2014-%C3%96SYS-TABLO4-EnKucukEnBuyukPuanlar23072014.pdf

Student Selection and Placement Centre (2015). *Adayların mezun olduğu / olacağı lisans programları ve üniversiteler [The universities in which the applicants were graduated or prospectively graduated],* Retrieved March15th., 2016 from http://dokuman.osym.gov.tr/pdfdokuman/2015/genel/2015KPSSKITABI/BOLUM_1_YUKSEKOGETIMPROGRAMLARI25122015.pdf

Su, Z., Hawkins, J. N., Huang, T., & Zhao, Z. (2001). Choices and commitment : A comparison of teacher candidates' profiles and perspectives in China and the United States. *International Review of Education, 47*(6), 611-635. doi:10.1023/A:1013184026015

The Confederation of Turkish Trade Unions (2015). *Nisan 2015 aclik ve yoksulluk siniri [April 2015 starvation and poverty lines].* Retrieved March 6th., 2016 from http://www.turkis.org.tr/dosya/xMF2q2kY7gty.pdf

TURKSTAT (2015a). *Gelir ve yaşam koşulları araştırması bölgesel sonuçları, 2014 [The regional results of revenue and living conditions study, 2014].* Retrieved March 23rd., 2016 from http://www.tuik.gov.tr/PreHaberBultenleri.do?id=21824

TURKSTAT (2015b). *İllerde yaşam endeksi, 2015 [Living indexes in cities, 2015].*
Retrieved March 23rd., 2016 from
http://www.tuik.gov.tr/PreHaberBultenleri.do?id=24561

TURKSTAT (2015c). *İstatistiklerle aile, 2014* [*Statitstics of the households, 2014].* Retrieved March 23rd., 2016 from http://www.tuik.gov.tr/PreHaberBultenleri.do?id=18624

TURKSTAT (2015d). *İstatistiklerle kadın, 2014* [*Statistics of women, 2014].* Retrieved March 23rd., 2016 retrieved http://www.tuik.gov.tr/PreHaberBultenleri.do?id=18619

TURKSTAT (2016). *Gelir ve yaşam koşulları araştırması bölgesel sonuçları, 2016 [The regional results of revenue and living conditions study, 2016].* Retrieved March 11th., 2018 retrieved from http://www.tuik.gov.tr/PreHaberBultenleri.do?id=24580

UNESCO (2016). *Early childhood care and education.* Retrieved March 16th., 2016 from http://en.unesco.org/themes/early-childhood-care-and-education.

UNICEF (2013). *New directions in early childhood education in Turkey: "Quality, access and equity" international conference has shed light for early education in Turkey.* Retrieved March 16th. 2016 retrieved from http://www.unicef.org/ceecis/media_24261.html

UNICEF (2015). *Early learning, Provision of childcare and preschool education, A vision for early childhood.* Retrieved March 19th., 2016 from http://www.unicef.org.tr/sayfa.aspx?id=19&dil=en&d=1

Ücecam Karagel, D. (2009). Doğu Anadolu Bölgesi kırsalında kadın nüfusun okur-yazarlığı (2000) [The literacy of woman population in rural Eastern Anatolian Region (2000)]. *Doğu Anadolu Bölgesi Araştırmaları, 8(*1), 14-23.

Vaez, M., & Laflamme, L. (2008). Experienced stress, psychological symptoms, self-rated health and academic achievement: A longitudinal study of Swedish university students. *Social Behavior and Personality, 36*(2), 183-196.

Whitebook, M. (2003). *Early education quality: Higher teacher qualifications for better living environments. A review of literature.* (ED481219). Center for the Study of Child Care Employment, Institute of Industrial Relations, University of California at Berkeley, CA. Retrieved August 2, 2017 from http://files.eric.ed.gov/fulltext/ED481219.pdf

World Bank (2011). *Improving the quality and equity of basic education in Turkey, Challenges and options.* Retrieved March 17th., 2016 from https://openknowledge.worldbank.org/handle/10986/13250

Yuce, K., Sahin, E. Y., Kocer, O., & Kana, F. (2013) Motivations for choosing teaching as a career: A perspective of pre-service teachers from a Turkish context. *Asia Pasific Education Review, 14*(3), 295-306.

Yuksel, I. (2012). The current developments in teacher education in Turkey on the threshold of European Union. *International Journal of Humanities and Social Science, 2*(8). 49-56.

Okul Öncesi Eğitimi Aday Öğretmenlerinin Sosyoekonomik Profili

Özet

Problem Durumu: Okul öncesi eğitimin niteliğinin ve kayıt oranlarının arttırılması, gelişmekte olan ülkelerin gelecekteki sosyoekonomik profillerinin şekillenmesinde oldukça belirleyici bir role sahiptir. Eğitimin kalitesinde temel belirleyici unsur öğretmenlerdir. Türkiye'de üniversite öğrencilerinin sosyoekonomik profillerini araştıran çalışmalar oldukça sınırlıdır, özellikle Doğu ve Güneydoğu Anadolu gibi yaşam koşullarının ülke ortalamasının altında seyrettiği bölgeler için bu tip çalışmalar önem kazanmaktadır.

Araştırmanın Amacı: Bu çalışmada, Doğu ve Güneydoğu Anadolu bölgelerindeki üniversitelerin eğitim fakültelerinin okul öncesi eğitimi lisans programında öğrenim görmekte olan toplam 2115 öğrencinin sosyoekonomik profilinin ve öğrencilerin okul öncesi eğitim bölümünü tercih nedenlerinin ve tercih sırasının belirlenmesi amaçlanmıştır. Bu çalışmanın bulguları, okul öncesi eğitim programlarında öğrenim görmekte olan lisans öğrencilerinin sosyoekonomik profilinin ve ihtiyaçlarının daha iyi tanınmasını sağlayacaktır.

Araştırmanın Yöntemi: Bu çalışmada, Doğu ve Güneydoğu Anadolu bölgelerindeki toplam 11 devlet üniversitesinde okul öncesi eğitim bölümünde öğrenim görmekte olan öğrencilerin sosyoekonomik profili betimlenmeye çalışılmıştır. Öğrencilere üniversite yaşamının çeşitli yönlerini irdeleyen ve toplam dört başlıkta sınıflandırılan sorular sorulmuştur; (1) Örneklemin demografik ve ekonomik özellikleri: sınıf, yaş, medeni durum, aile aylık geliri, (2) Öğrencilerin bütçesi: ailenin öğrenciye gönderdiği aylık harçlık miktarı, barınma durumu, aylık kredi/burs durumu, yarı zamanlı çalışma durumu ve yarı zamanlı çalışmadan elde edilen gelir, (3) Ailelerin sosyoekonomik kompozisyonu: ebeveynlerin eğitim durumu, ebeveynlerin mesleği, kardeş sayısı ve (4) Örneklemin eğitsel ve sosyokültürel özellikleri: mezun olunan lise tipi, üniversiteye giriş sınavında okul öncesi eğitim programını tercih sırası, okul öncesi eğitimi seçmek için ilk üç neden, akademik kariyer düşüncesi, spor ya da sosyal kulüplere üyelik, okul öncesi eğitim alma durumu ve halihazırdaki not ortalaması. Üniversitelerden araştırma izinleri alındıktan sonra, her bir üniversitenin okul öncesi eğitim bölümündeki sorumlu akademisyenle telefonla görüşülmüş, araştırmanın amacı ve süreci hakkında bilgi verilmiştir. 2014-2015 eğitim öğretim yılı bahar döneminde toplam 3000 anket bölümlere postalanmış ve sorumlu akademisyenler tarafından uygun görülen ders saatlerinde öğrencilere uygulanmıştır. Geri dönen 2550 adet anketten, doldurulmayan, yarı yarıya boş bırakılan ve yanlış doldurulan anketler

çıkarılmış ve toplamda 2115 anket analize dahil edilmiştir. Veri setini betimsel olarak analiz etmek için; frekans, yüzde, ortalama, standart sapma, ranj, minimum ve maksimum değer analizleri yapılmıştır. Aynı zamanda öğrencilere açık uçlu olarak sorulan bölüm tercihinde en önemli ilk üç nedenin analizinde frekans sayımı yapılmıştır.

Araştırmanın Bulguları: Örneklemdeki öğrencilerin üniversitelere göre dağılımı şu şekildedir: Adıyaman Üniversitesi (n=159), Ağrı İbrahim Çeçen Üniversitesi (n=295), Diyarbakır Dicle Üniversitesi (n=136), Erzurum Atatürk Üniversitesi (n=273), Erzincan Üniversitesi (n=69), Elazığ Fırat Üniversitesi (n=182), Malatya İnönü Üniversitesi (n=338), Kars Kafkas Üniversitesi (n=132), Kilis 7 Aralık Üniversitesi (n=177), Muş Alparslan Üniversitesi (n=130) ve Van Yüzüncü Yıl Üniversitesi (n=224). Bulgulara göre öğrenciler çoğunlukla düşük gelirli ailelerden gelmektedir ve kısıtlı bir bütçeyle öğrenim hayatlarını sürdürmektedir. Öğrencilerin ailelerin aylık ortalama geliri 2066,67 T.L. (*SS*=1294,27)., aileler tarafından öğrencilere gönderilen aylık harçlık miktarı 245,14 T.L. (*SS*=229,21) olarak bulunmuştur. Öğrencilerin %71,6'sı (n=1515) devlet bursu ve/veya kredisi kullanırken (ort=327,82 T.L.), %9,3'ü (n=197) özel vakıflardan burs almaktadır (ort=389,67 T.L.). Öğrencilerin çok az bir bölümü (3,8%, n=81) yarı zamanlı çalışmaktadır ve yarı zamanlı çalışan öğrencilerin aylık geliri 754,32 T.L.'dir. Öğrencilerin annelerinin büyük bölümü okuma yazma bilmiyor (n=521, 24,6%); okuma yazma biliyor (n=225, 10,6%); ve ilkokul mezunu iken (n=838, 39,6%), babaların büyük çoğunluğu ilkokul mezunu (n=670, 31,7%); ortaokul mezunu (n=372, 17,6%); ve lise mezunudur (n=483, 22,8%). Öğrencilerin büyük bölümü (n=1690, %79,9) hiçbir şekilde okul öncesi eğitim almadıklarını belirtirken, öğrencilerin mezun oldukları lise tipi büyük çeşitlilik göstermektedir. Öğrencilerin %51,3'ü (n=1084) ileride akademik kariyer düşündüklerini belirtmiştir. Öğrencilerin az bir bölümü (%13, n=276) üniversitelerindeki sosyal ve spor kulüplerine üyedir. Öğrencilerin büyük bir bölümü üniversiteye giriş sınavında okul öncesi eğitimi bölümünü ilk beş sıra içinde tercih etmiştir. Öğrencilerin okul öncesi eğitimi tercih etmek için belirttikleri ilk üç neden sırasıyla; (1) çocuklara ve mesleğe duyulan sevgi, (2) devlet atamalarının kolaylığı ve devlet okullarındaki maaş düzeyinin tatminkarlığı ve (3) okul öncesi eğitimin rahatlığı ve eğlenceli olması, şeklindedir.

Araştırmanın Sonuçları ve Önerileri: Araştırmamızın sonucunda öğrencilerin düşük gelirli ailelerden geldiği, annelerin eğitim durumunun düşük olduğu ve çoğunluğun ev hanımı olduğu, öğrencilerin sosyal ve spor kulüplerine üyeliklerinin ve yarı zamanlı çalışma durumlarının oldukça sınırlı olduğu görülmektedir. Öğrencilerimiz çok kısıtlı bir bütçeyle öğrenim hayatlarına devam etmektedir. Sosyal, kültürel ve sportif aktiviteler öğretmen adaylarının eğitiminde, akademik konular kadar önemli görülmektedir. Üniversitelerde öğrencilerin sosyal ve spor kulüplerine üyeliklerini özendirecek finansal desteklerin özellikle dar gelirli öğrenciler için yaratılması gerekmektedir. Milli Eğitim Bakanlığı, okul öncesi öğretmeninin genel ve özel alan yeterliklerini açıklarken, öğretmen adayının kendisini bu alanlarda geliştirmiş olmasına özellikle vurgu yapmıştır. Bu alanlara yönelik seçmeli derslerin sayısının arttırılması, ya da kulüp üyeliklerinin desteklenmesi, öğrencilerin boş zaman değerlendirme alışkanlıklarına da önemli katkılar sağlayacaktır. Ülkemizde okul

öncesi eğitime erişimin yaygınlaştırılması, çocukların hayata daha iyi bir başlangıç yapmasına, kuşaktan kuşağa eğitim ve işgücünün hem niteliksel hem de niceliksel olarak gelişmesine ve özellikle ülkemizin doğu bölgeleri için halen sorun olan kadın okuryazarlığı ve istihdam oranlarının yükselmesine katkı sunacaktır. Benzer çalışmaların ülkemizin diğer bölgelerinde ve üniversitelerinde tekrar edilmesinin, öğrenci profilinin daha iyi tanınmasına ve üniversite yaşamının ne kadar, nasıl ve hangi yollarla zenginleştirilebileceğine katkı sunacağı düşünülmektedir.

Anahtar kelimeler: Doğu ve Güneydoğu Anadolu Bölgeleri, Türkiye'de okul öncesi eğitim, Türkiye'de okul öncesi öğretmeni yetiştirme, üniversite öğrencilerinin sosyo-ekonomik profili

A Qualitative Study of School Climate According to Teachers' Perceptions *

Hamit OZEN[1]

A R T I C L E I N F O	A B S T R A C T

Purpose: Academic researchers have reported that the climate of a school deeply affects students and other partners. A safe and caring school environment is one in which school attendees feel respected, feel that their work is meaningful, and feel that they are good at what they do. The purpose of this paper was to determine how teachers perceived the school climate that shaped learning processes and personal development in Kutahya and how principals and other dimensions affect the teachers' perceptions.

Research Methods: This study employed a qualitative methodology to measure the school climate. A semi-structured interview technique was used, asking open-ended questions to obtain clear data from participants. The data were analyzed using data codes applied to the text. **Findings**: The study found the school climate to be gloomy in Kutahya. Teachers were dealing with excessive paperwork and supererogatory regulations in their schools. They were unable to produce new ideas, even though they were experienced in their profession. Some principals were favoritist and applied their patronage according to their personal relationship with the teachers. Some teachers were closed to new creative ideas at school and did not want to exert any extra effort for their school.

Implications for Research and Practice: The results emphasized that a positive school climate is crucial for the school to attain their ontological existence, which is raising competent, capable students. A positive school climate requires an open, healthy school ethos that fosters a sense of responsibility and efficacy between teachers and school administrators. Future studies could elaborate social studies with other disciplines to improve the learning climate in schools.

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Introduction

Schools are accepted as unique sociological organizations where people are educated. They can exercise their mission by the labor of their teachers who aspire to meet the challenge with the support of dynamics like the school climate which is a cluster of phenomena that reflect the school community's norms, goals, and values (Waters, Roach, & Batlis, 1974). Academic researchers have mentioned that the school climate deeply affects students and other partners (Hunter, Bedell, & Mumford, 2007). Moreover, a caring school environment is one in which students feel respected and believe that their work is meaningful (Guillaume, Jagers, & Rivas-drake, 2015). If the teachers are proud, develop social and personal relationships with their students and colleagues, and aim to increase the school's success, we can say that the school has a positive climate (Romero & Gabriela, 2018). What is expected mainly from a school is student learning, and school effectivity must be attained in a progressive way (Miskel & Cosgrove, 1985). In this study, I examine the quality of the school climate in Kutahya to explain the problems faced by teachers there. The analyses were intended to extend our current knowledge about how the school climate can protect against maladjustment in teachers and students.

Theoretical Background

As more studies of the background to the educational process are conducted, new approaches to the concept of the school climate have been formulated in scrutinizing the functions of school dynamics. Halpin and Croft (1963) originally defined school climate as the organizational personality of a school; allegorically, personality is to the individual what climate represents to the organization. The school climate is the multidimensional social place observed through a complex network of social and psychological interactions among school stakeholders (Kelley, 1980). The space in which a teacher works is closely associated with the school climate, which is strongly related to the amount of control over teachers directly wielded by the school principal's administrative style. Teachers see schools as dynamic organizations when there is more professionalism and when decision making is more participative and less centralized (Hoy & Hannum, 1997). The school climate defines the quality of a school that engenders a healthy learning environment, initiates students' and parents' dreams and aspirations, stimulates teachers' creativeness and enthusiasm, and develops all of its stakeholders (Freiberg, 1999). Halpin and Croft (1963) defined the school climate as that which distinguishes schools substantially in their feel. It is an intangible concept that the notion of morale does not provide an index for. Ideal principals who are the educational leaders in schools where development is needed can be paralyzed by the teaching staff, and the topic of organizational climate can generate personal interests.

Considerable research exists on the topic of school climate. Hoy and Miskel (2001) point out that school climate is measured by the interactions between teachers and the principal. They propose six dimensions of school climate. Three of them belong to principals and the others belong to teachers. As for principals, the first one is supportive behavior where the principal listens and is open to teacher suggestions. Praise is given genuinely, and criticism is given constructively by the principal. The

second behavior is directive behavior that involves rigid, close supervision. Principals maintain close and constant control over all teachers and school activities, down to the smallest details. The last dimension is restrictive behavior that hinders rather than facilitates teacher work. Teacher behaviors comprise three sorts: collegial, intimate and disengaged behavior. Collegial behavior supports open and professional interactions among teachers. Intimate behavior reflects a cohesive and strong network of social support among the faculty. Disengaged behavior refers to a lack of meaning and focus on professional activities. Teachers have no common goal orientation; often their behavior is negative and they are critical of their colleagues and the organization.

Another international study found that students reporting a negative climate in their schools were more likely to attend schools with higher chronic absence rates than students reporting that their school had a positive climate (Eck, Johnson, Bettencourt, & Johnson, 2017). Other research studied the principals' behavior, explaining how their mistreatment created a negative school climate (Huffman, 2015). A study on the organizational health of high schools and subsets of faculty trust found a positive relationship between the overall school climate and student achievement (Smith, Hoy, & Sweetland, 2003). In Turkey, various studies have dealt with the school climate. Sisman (2011) clarified the properties of productive school climates by surveying and measuring their effectiveness. Another study mentioned that a school's commitment referred to a perception that the learning needs of students and the personalities of the students were valued by schools (Ozdemir, Sezgin, Sirin, Karip, & Erkan, 2010). In other words, if the school respected students' learning needs, there was a healthy school climate and high academic achievement. The aim of this research was to reveal the issues on school climate because successful teachers are crucial to the development of excellent schools. That is why understanding the school ethos is a must to explore why teachers and students are unsuccessful and unhappy. The current study has been one out of just a few implemented in Kutahya using the qualitative method.

Research Objectives and Questions

This study was developed to address questions regarding the school climate from the perspective of teachers. The objectives were an understanding of the managerial and educational skills of principals, teacher interactions and empowerment, and the school ethos. These research questions emerged from the objectives:

1. How do you perceive the school principal's managerial behaviors?

2. How do you perceive teacher interactions?

3. How do you perceive the principal's educational behaviors?

4. How do you perceive teacher empowerment?

5. How do you perceive justice in the school?

6. How do you perceive the working ethos?

Method

Research Design

This study was designed as a qualitative evaluation of school teachers' perceptions on issues stemming from the relationships among principals, teachers, students and other stakeholders. Qualitative research design employs methods that are distinct from those used in quantitative research and which emphasize gathering data on naturally occurring phenomena. The research design chosen in this study was phenomenology, which focuses on collecting individual participant experiences (Creswell, 1998). The aim of phenomenology is to transform lived experience into a description of its essence (McMillan & Schumacher, 2001).

Research Sample

Eighteen volunteers were interviewed over a 45-day period. Of the 18 participants (10 females and 8 males), there were 3 English teachers, 2 class teachers, 2 science and technology teachers, 1 physical training teacher, 1 mathematics teacher, 1 preschool teacher, 1 technical teacher, 2 literature teachers, 1 psychological counselor, 2 arts/music teachers, 1 biology teacher, and 1 philosophy teacher. The participants had between 3 and 29 years teaching experience and had worked in their school at least 3 semesters so as to be acquainted with the principal. Their ages ranged from 29 to 55 (M=39, 72). The research sample was employed using maximum variation and criterion sampling. The selection criteria were teachers who had served enough to obtain a perception of the school climate and were willing to participate in the study.

Data Collection

An interview technique was used, employing open-ended questions. To prepare the interview form, the literature was reviewed, and a draft including 17 questions was developed. Later, two experts were consulted, one academic who researched the school climate and another academic who worked on the qualitative research. Finally, the number of questions was reduced to 6. The research data were collected between September 2016 and March 2017. The participants were interviewed in more than 30 meetings, lasting from 35 to 60 minutes.

Validity, Reliability and Reflexivity of the Study

Validity refers to the degree of congruence between explanations of phenomena and the realities of the world (McMillan & Schumacher, 2001). To enhance the validity, interim data analysis and corroboration were applied to ensure a match between findings and participant reality. Multimethod strategies allowing triangulation in data collection and data analysis were employed. The study obtained quotations from the participants. Reflexivity is a broad concept that includes a rigorous examination of one's personal and theoretical commitments to see how they serve as resources for selecting approaches (McMillan & Schumacher, 2001). Audibility was used for coding, categorizing and preparing themes for the study to enhance the reflexivity. Besides, participants were assured of the secrecy of their records as data gathering complied

with ethical considerations. The reliability calculated using the formula was found to be 91% (Miles & Huberman, 1994).

Data Analysis

The descriptive analysis technique was used because the aim of the study was to explore the teachers' perceptions about the school climate based on their opinions and expressions (McMillan & Schumacher, 2001). After finishing the interviews, the researcher analyzed the voice-recordings and then transcribed the data verbatim. The researcher and the two academics confirmed the accuracy of the data. Discrepancies between the recordings and the written documents were eliminated. After the data collection, the researcher and the academics worked independently to determine the themes and subthemes. Together they agreed upon five themes and thirteen subthemes with 656 coded references.

Findings and Results

The analysis of the findings resulted in these predominant themes: regulatory procedures, rational responsible self, future centeredness, principal fairness, and work life at school.

Regulatory Procedures

The teachers were asked about the general behaviors of the principal at their school. Questions requested their view on how the school principal administered the school and exercised his or her functions. Two subthemes were reached. Table 1 shows the teachers' perceptions of the regulatory procedures at their school.

Table 1

General Principal Approaches

	Reference Codes	
	f	%
Theme/subtheme	122	100
Trivial bureaucratic & tight rules	63	51
Cronyist & Favoritist	59	49

Several teachers expressed dislike for trivial bureaucratic regulations and tight rules at school (f=63, 51%). Also, school principals' behaviors (f=59, 49%) can be explained as cronyism. Here are examples of the participants' comments:

He exaggerates his power to control and make us respect using bureaucratic regulations, which break the spirit. (G.E. 35 M–Science & Tech. Teacher)

Principal does not behave equally at school. He is a cronyist. If you have a close relationship or if you support the same political power, you are a person to prioritize first. (S.A. 32 F–English Teacher)

If there is a rule, the rule should be for everyone. There shouldn't be certain teachers that get around the rule because of their close relationship with the principal and upper level bureaucrats. (T.G. 43 M–Philosophy Teacher)

It is seen that principals can play with the rules issuing some arbitrary provisions and using them to maintain managerial power. Principals highlight bureaucracy because they want to shun taking risks and to keep teachers under control. Besides, it was found that objectivity is very important for teachers. Teachers expressed their sentiment that principals sometimes prioritized such favoritist behavior.

Rational Responsible Self

Interviewers were asked questions about what they thought about responsibility and collaboration at school. This theme was aimed at learning the perceptions of teachers on whether everybody strived to exert extra effort for the school. Three subthemes were extracted. Table 2 shows the teachers' perceptions.

Table 2

Rational Responsible Self

	Reference Codes	
	f	%
Theme/subtheme	78	100
Teachers do not assume responsibility	41	50
Teachers lack engagement	3	1
Supportive managerial behavior	38	49

As for sharing responsibility at school, teachers (f=41, 50%) expressed the opinion that there was no feeling of responsibility and only a minimal amount of collaboration existed at their school. These were some of the comments given by participants:

As we classroom teachers, we do not want to take responsibility at school collectively and personally. If I do that, I will be overloaded by trivial. (K.K. 51 M–Class Teacher)

Only a couple of teachers share their knowledge before lessons… In addition to this, we speak our daily routines. (N.C. 30 F–Literature Teacher)

When the teachers were asked about assuming responsibility, it was found that teachers understood it as a load and constituting grunt work. Some teachers expressed the view that collaboration was not satisfying and was reduced only to asking questions about daily lessons just before going to class and daily speeches.

A few teachers (f=3, 1%) expressed the perception that the teachers did not feel engaged in the educational settings. Here is one such comment:

KPSS killed me for years. I have just spent all my energy. From now on I will relax. (S.S. 35 F–Pre-School Teacher)

It may be concluded that teachers were not dedicated to their profession. The first reason for this was burnout caused by the Public Personnel Selection Examination (KPSS) that causes the teachers to be alienated from their school, students, and profession. Thus, teachers closed themselves to educational activities and to the students. It is a fact that a dedicated teacher who shows compassion to a student is beneficial to the said aforementioned burnout teacher.

On the other hand, participants suggested that some supportive principals' behaviors (f=38, 49%) were evident, even though most teachers mentioned that restrictive principals were seen in the schools. Teachers mostly agreed that while principals were ready to help, their managerial powers were not enough, but some principals showed their pragmatic self. Here are two excerpts on this subject:

> *He is a well-intentioned person, and he spends effort to promote success, but he falls short. He does not have enough managerial power to use.* (T.S. 31 F–Psychological Counselor)

> *A teacher prepared a female student for Math Olympiad. The principal declined in the beginning in case of possible gossiping between the girl and the teacher… The teacher did not let the principal know that he had prepared the girl… Finally, she won a medal. The principal went to the capital to get it.* (K.D. 46 M–Math Teacher)

The principal involves teachers in fulfilling the goals of the school. Principals want to do their best for the school, but sometimes they fail because the Turkish educational system is fairly centralized. Besides, principals have a pragmatic approach if there is a reward at the end. Being treated in a civilized fashion by the principal is a key to the teacher engagement. Yet principals fail to apply managerial decency which becomes potent when used together with managerial power and teacher engagement.

Future Orientation

In the third dimension, teachers were asked about the aim, innovation, vision, and mission at their school. Two subthemes evolved. Table 3 shows these subdimensions.

Table 3

Future Orientation

	Reference Codes	
	f	%
Theme/subtheme	93	100
Empowerment of teacher and student	49	53
Ineffective vision and strategical plan	44	47

Some participants made it clear that principals were aware of the dynamics of the future of the school and education, especially with the need of teacher and student empowerment. However, a lack of leadership power of the principals was a great concern (f=49, 53%). Here is an excerpt on this subtheme:

> *Principal says…innovative culture and creativity need continuous learning and planning. He puts students in the first place, but mostly he falls short.* (S.U. 38 F–Biology Teacher)

It can be understood that some of the principals stress the main core of the future dynamics. They highlight the theme of lifelong learning of innovative cultures, placing the students at the forefront. Teachers allowed that principals were willing to reinforce the benefits of innovation by opening a space to allow students and teachers to bypass bureaucratic barriers, but their efforts failed due to hierarchies that sap creativity.

Nearly half of the teachers declared that they experienced fear of the effects of future centeredness and expressed anxiety about it (f=44, 47%). This was one of their comments:

> *There is no aim, mission, vision and strategical plans at school. They are empty and just for showing off.* (N.S. 43 M–Math Teacher)

According to this teacher's perceptions, his school did not have an aim, a mission, and a strategic plan which projected the school into the future. It was also declared that teachers perceived such plans as useless, and these principals employed the strategical plans just to show off without implementing them.

Principal Fairness

Some questions were asked of the teachers about justice that predicted the fairness of principals under established rules and laws. Two themes were found. Table 4 shows the dimensions.

Table 4

Distributive Justice

	Reference Codes	
	f	%
Theme/subtheme	71	100
Unfair distribution	49	69
Egalitarianism practiced	22	31

Some teachers asserted that their principals mostly fostered distributive justice. However, other participants (f=49, 69%) felt that in their schools an unfair distribution system prevailed. Here is a sample of the teachers' responses:

> *As for carrots and sticks, the principal does not value my performance. He gives the carrots to his close friends.* (G.F. 31 F–Arts Teacher)

In fact, the majority of teachers found that they faced an unfair distribution of justice. It was understood that principals did not apply procedures appropriately and outcomes were not distributed fairly. The reason for such a system might be that

principals looked for favoritism or same unionship. Conversely, fewer principals (f=22, 31%) demonstrated an egalitarian system. Here is an excerpt on this subject:

> *Carrots and sticks are fair. I trust that the principal distinguishes failure and success.* (T.S 31 F–Psychological Counselor)

Few teachers perceived justice practices at their schools as fair. It could be understood that few principals called for equity when allocating equal materials to all members in the school. However, most of the principals did not offer every person the same level of material goods, including burdens and services.

Teachers also expressed their perceptions of principals' interactional justice. Two subthemes emerged and Table 5 shows them.

Table 5

Interactional Justice

	Reference Codes	
	f	%
Theme/subtheme	51	100
Quality of treatment	26	51
Effective communication	25	49

The teachers indicated that the quality of their treatment at the hands of principals was typified by neglect (f=26, 51%). Conversely, nearly half of them (f=25, 49%) found that principals employ effective communication means. Two examples are given below:

> *Whatever I do isn't important. He neglects my work. He is always formal to me.* (S.S. 35 F–Pre-School Teacher)

> *He wants me to focus on students. He gives me a blank check for my master and uses it to support and communicate.* (R.D. 26 M–Math Teacher)

School principals did not treat teachers well and the social side of the principals did not focus on the informal interactions. It was understood that from the perspective of quality of treatment, principals were not open, consistent, or fair to teachers. Besides, they did not promote teachers based on experience, merit, and performance. However, nearly half of the teachers had the perception that communication existed but not enough for interactional justice. However, it took into account the variables of emotions, self-respect, desire, attitude, and ambitions. In summary, these are the factors that affect the personal agenda of teachers dealing with the external factors of motivation.

School Ethos

The final questions sought information regarding the working ethos at schools. These questions searched for the team spirit in the school environment. Two subthemes were reached and Table 6 shows them.

Table 6

School Ethos

	Reference Codes	
	f	%
Theme/subtheme	45	100
No team spirit	20	44
Good team spirit	25	56

The teachers pointed out that (f=20, 44%) they believed that there was no team spirit at their school. On the contrary, more teachers (f=25, 56%) expressed having a good team spirit in their working ethos. Here are examples of the answers:

We don't have common goals. How can we improve team spirit in this case? (K.B. 38 F–Literature Teacher)

There is a good team spirit at school. The principal says players who are friends off the playing area will work better on the court together. (G.B. 33 M–Physical Trainer)

The teachers who said that there was no team spirit at school probably based their belief on the school culture failing to meet around a common goal. If the school culture encouraged the teachers to foster interaction, they would be in a better position to have good teamwork. Some of the interviewees mentioned positive team spirit because of their principals. Some of the teachers pinpointed the importance of principals who promoted collaboration at school. In some cases, it can also be understood that the teachers were receptive to having a work collaboration, but the right team culture was not instilled at their school.

Discussion and Conclusion

The research demonstrated that bureaucratic regulations were trivial, and that many principals showed a favoritist and cronyist approach. It was found that the bureaucratic hierarchy exerted a negative impact on teachers' behavior and autonomy at the highest level of bureaucratic schools. In the Turkish context, Demirtas, Ozdemir and Kucuk (2016) found that the bureaucratic structure of schools was at a moderate level. Buluc (2009) reported that the bureaucratic structure of schools and the behavior of principals hindered the schools' effectiveness. It was stated that teachers in primary and secondary schools were resigned to the existence of favoritism in the appointment of central administrators, school administrators, and teachers, and in the distribution

of materials to schools by administrators who shared their political views regardless of their success and abilities. It was seen that being a favorite person at school was bound to mean a close relation with the principal, a bureaucrat and a politician. Besides, Ozen (2017) found that teacher trainees found their school principal employing harsh discipline and establishing strict formal communication with school teachers but informal, intimate communication with the teachers who had close ideological relationships. These studies overlapped this study determining that favoritism existed in the Turkish school context. Some schools have a pronounced "them and us" culture based on favoritism, thus causing even more staff disgruntlement (Griff, 2013). This is called cheap leadership. Cheap leaders create a "them" by first creating an "us" and rallying their followers. But the followers of cheap leaders are rallying against a created enemy, rather than working in the pursuit of school improvement (Knuth, 2004). Schools can attain excellence only by having a total approach to managing human resources, decreasing the bureaucratic structure, and building the leadership capacity of teachers (Walker & Hallinger, 2015).

This study confirmed that judging from their perceptions, many teachers are not satisfied with how school administrators handle their responsibilities and feel that their own labor is viewed as grunt work. Another finding was that teachers were not dedicated to their profession because of heavy burnout caused by the Public Personnel Selection Examinations (KPSS). This study further revealed that few principals support their own teachers; instead their managerial power is centralized and never strong enough for them. In fact, instead of facilitating their teachers' work, many principals hindered the teachers. A review of previous studies in the Turkish educational system context implied similar findings. For example, Turan, Yıldırım and Aydogdu (2012) also reported that teachers were not willing to dedicate themselves to their profession. Karakelle (2005) researched the effective teacher qualities and found that teachers did not prioritize their teaching skills and collaborative work desire. Both studies overlapped my study.

The current study indicates that vision, mission, and strategy were not prioritized in schools and instead were deemed to be useless, and thus schools and their partners were far from being future oriented. Principals were aware of the fact that students and teachers should be brought to the forefront and that they must be empowered, but they did not have managerial or legal power to succeed. The two phenomena could be seen as paradoxical. Yet, because the educational system is so centralized, principals lack the practice of their realities such as the teacher and student empowerment that they challenge. Tahaoglu and Gedikoglu (2009) contradicted my study. They found that school principals showed visionary leadership best at schools. However, Balyer (2014) agreed with my research that most school principals did not have the time and opportunity to shape the vision of the school. Principals carry out basic duties like a heavy paperwork load instead. Although change is vital for educational institutions in the 21st century, most schools do not have clear strategies to manage change successfully. Schools in Turkey should prepare students to learn eagerly and contribute to and succeed in a rapidly changing society. Educational leaders admit that students develop both the skills and the competencies essential for success and

leadership in the emerging creative economy. Blase and Blase (1997) identified such empowering principals' behaviors and characteristics as demonstrating trust in teachers, encouraging individual input and teacher autonomy and providing educational and intellectual support. It is a fact that the traditional managerial roles of school leaders have evolved from mainly technical and tactical functions, such as planning teachers' timetables and duties and introducing new curricula. The new leading roles of principals require increased leadership competence in shared vision building, relationship building and change management.

The study investigated the two types of justice practiced by school principals: distributive and interactional justice. It found principals misused both methods of justice. While distributive justice ideally should result in equal distributions of benefits and burdens across members of the school, the principals were not egalitarian and instead gave benefits to their favorites. Similarly, interactional justice, which should mean that school principals treat teachers and students with respect and sensitivity and explain the rationale for decisions, is often replaced by bluntness and a reliance on dogma. Teachers did not perceive the fairness as a suitable outcome because principals did not exercise leadership power gracefully. Moreover, interactional justice was expressed mostly as social recognition which stemmed from the teachers' success. Half of the participants pointed out that their successes were neglected, but the rest of them stated that their successes were recognized. Tekin and Akyol (2017) found that administrators were not fair in the evaluation process. It has been observed that organizational justice in schools is not totally fair. Unfair behaviors perceived by teachers could stem from the evaluation process of principals. Moreover, principals are supposed to provide justice by being objective without prejudice, staying away from politics and religion. It was also expected that principals differentiate between effective and ineffective teachers in a positive way. Furthermore, the state should assign principals according to transparent criteria that are based fairly on merit.

This study researched team spirit. As a result, teachers stated that team spirit mostly did not exist. Few of the teachers expressed a positive team spirit in which the principals were the main actors. These findings could be based on the school culture, meeting around a common goal. If the school culture encouraged the teachers to foster interaction, they would be in a better position to have good teamwork at school. It can also be understood that teachers were eager to work collaboratively, but they were not instilled with the right team culture. Team spirit means aiming for synergy that pulls people together, fosters a sense of collective responsibility, and helps teachers and students overcome any challenges. It is a well-known reality that team spirit comes from the top management of organizations (Troen & Boles, 2010). Principals must take everybody on board to establish effective working teams.

References

Balyer, A. (2014). School principals' role priorities. *Journal of Theory and Practice in Education*, *10*(1), 24-40.

Blase, J. & Blase, J. (1997) The micro political orientation of facilitative school principals and its effects on teachers' sense of empowerment. *Journal of Educational Administration, 35*(2), 138–164.

Buluc, B. (2009). The relationship between bureaucratic school structure and leadership styles of school principals in primary schools. *Education and Science, 34*(132), 71- 86.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousands Oaks, CA: Sage.

Demirtas, Z., Ozdemir, T. Y., & Kucuk, O. (2016). Okullarin burokratik yapisi, orgutsel sessizlik ve orgutsel sinizm arasındaki iliski [Relationships between bureaucratic structure of schools, organizational silence and organizational cynicism]. *Educational Administration: Theory and Practice, 22*(2), 193-216.

Eck, K. V., Johnson, S. R., Bettencourt, A., & Johnson, S. L. (2017). How school climate relates to chronic absence: A multi–level latent profile analysis. *Journal of School Psychology*, *61*, 89-102.

Freiberg, H. J. (1999). *School climate: Measuring, improving and sustaining healthy learning environments.* Philadelphia: Falmer.

Huffman, D. B. (2015). *Support and mistreatment by public school principals as experienced by teachers: A statewide survey* (Doctoral dissertation). Retrieved from American Doctoral Dissertations, EBSCO*host*, viewed 9 March 2018.

Griff, T. (2013). Be friendly, but don't be friends. *Times Educational Supplement*, (5045), 40-41.

Guillaume, C., Jagers, R., & Rivas-drake, D. (2015). Middle school as a developmental niche for civic engagement. *American Journal of Community Psychology, 56*(3-4), 321-331.

Halpin, A. W. & Croft, D. B. (1963). *The organization climate of schools*. Chicago: Midwest Administration Center of the University of Chicago.

Hoy, W. K. & Hannum, J. W. (1997). Middle school climate: An empirical assessment of organizational health and student achievement. *Educational Administration Quarterly, 33,* 290-311.

Hoy, W. K. & Miskel, C. W. (2001). *Educational administration: Theory into practice*. New York: McGraw-Hill.

Hunter, S. T., Bedell, K. E., & Mumford, M. D. (2007). Climate for creativity. *Creativity Research Journal, 19*(1), 69-90.

Karakelle, S. (2005). Ogretmenlerin etkili ogretmen tanimlarinin etkili ogretmenlik boyutlarina gore incelenmesi [Analyzing teachers' definitions of effective teachers according to effective teaching dimensions]. *Education and Science, 30*(135), 1-10.

Kelley, E. (1980). *Improving school climate*. Reston: NASSP.

Knuth, R. (2004). The negative uses of power: Principal leadership. *High School Edition, 5*(3), 44-49.

McMillan, J. H. & Schumacher, S. (2001). *Research in education: Evidence-based inquiry. A Conceptual Introduction.* New York: Pearson.

Miles, M. & Huberman, A. M. (1994). *Qualitative data analysis*. London: Sage.

Miskel, C. & Cosgrove, D. (1985). Leader succession in school settings. *Review of Educational Research, 55*, 87-105.

Ozdemir, S., Sezgin, F., Sirin, H., Karip, E., & Erkan, S. (2010). Examining the variables predicting primary school students' perceptions of school climate. *Hacettepe University Journal of Education, 38,* 213-224.

Ozen, H. (2017). Stajyer ogretmenlerin mesleki ve teknik anadolu lisesi okul mudurleri, ogretmen ve ogrencileri hakkindaki algilarinin incelenmesi: fenomenolojik yaklasim [A research of the perceptions of trainee teachers on vocational school principals, teachers and students: A phenomenologic approach]. *YYU Egitim Fakultesi Dergisi, 14*(1), 1050-1094.

Romero, C. & Gabriela, K. (2018). Interactive leadership in turbulent school climates: an exploratory study of high school principals from the city of Buenos Aires. *Educational Management Administration & Leadership, 46*(2), 339-354.

Smith, P. A., Hoy, W. K., & Sweetland, S. R. (2003). Organizational health of high schools and subsets of faculty trust. *Journal of School Leadership, 11*, 135-150.

Sisman, M. (2011). *Egitimde mukemmellik arayisi: Etkili okullar*. Ankara: Pegem A.

Tahaoglu, F. & Gedikoğlu, T. (2009). Ilkogretim okulu mudurlerinin liderlik rolleri [leadership roles of primary school principals]. *Educational Administration: Theory and Practice, 15*(2), 274-298.

Tekin, Y. F. & Akyol, B. (2017). A qualitative investigation on the views of school principals and teachers about organizational justice in evaluation process. *Educational Administration: Theory and Practice, 23*(1), 165-193.

Troen, V. & Boles, K. C. (2010). Team spirit: Teachers work together to establish and achieve key goals. *Journal of Staff Development, 31*(1), 59-62.

Turan, S., Yıldırım, N., & Aydogdu, E. (2012). Okul mudurlerinin kendi gorevlerine iliskin bakis acıları [Perspectives of school principals on their own task]. *Pegem Egitim ve Ogretim Dergisi, 2*(3), 63-76.

Walker, A. & Hallinger, P. (2015). A synthesis of reviews of research on principal leadership in East Asia. *Journal of Educational Administration, 53*(4), 554-570.

Waters, J. K., Roach, D., & Batlis, N. (1974). Organizational climate dimensions and job related attitudes. *Personnel Psychology,* 27(3), 465-476.

Öğretmen Algılarına Göre Okul İklimi: Nitel Bir Çalışma

Özet

Problem Durumu: Öğretmenler okuldaki görevlerini toplum normlarını ve değerlerini yansıtan çeşitli dinamikler ile etkileşerek gerçekleştirmektedirler. Bu dinamiklerden birisi de okul yaşantısının kalitesi olarak ifade edilen okul iklimidir. Halphin ve Croft, okul iklimini okulun organizasyonel kimliği olarak tanımlamıştır. Okul iklimi kalitesinin liderin yönetim stiline bağlı olduğuna değinen Hoy ve Hannum, okulu öğretmenlerin karar süreçlerine daha çok katıldığı, daha az merkezi yapıya sahip olması gereken yerler olarak ifade etmektedir. Olumlu okul ikliminin öğretmen-müdür arasındaki etkileşimin kalitesine bağlı olduğunu söyleyen Hoy ve Miskel, okul müdürlerinin süreçte destekleyici, kısıtlayıcı ve emir verici davranış örüntülerine sahip olduğu, öğretmenlerin de okul içi etkileşimde işbirlikçi, bağlantısız ve samimi davranışlara sahip olduğunu belirtmektedir. Alan yazınında yapılan çalışmalar doğrultusunda Eck, Johnson, Bettlecourt ve Johnson, okul ikliminin okul terklerindeki önemine vurgu yapmaktadır. Öğretmen açısından bakıldığında test odaklı başarı beklentisinin öğretmenler üzerinde olumsuz etkilere yol açtığı ve bununda okul iklimini olumsuz etkilediği söylenmektedir. Türkiye'de Şişman, sağlıklı okul ikliminin okul etkililiği üzerindeki olumlu etkiler yarattığını açıklamıştır. Ayrıca Özdemir, Sezgin, Şirin, Karip ve Erkan, öğrencilerin önemsendiği okullarda okul ikliminin paydaşlar tarafından olumlu olarak algılandığını söylemiştir. Okul; içinde çeşitli karmaşık dinamiklerin olduğu, etkileşimleri etkileyen bu dinamiklerin durağan olmadığı gerçeğiyle insan doğasının biçimlendirildiği yerlerdir. Dolayısıyla okulların organizasyonel ve psikolojik kimliğini etkileyen her bir etkenin belirlenmesi için daha çok çalışmanın yapılmasına ihtiyaç bulunmaktadır. Türkiye'de okul iklimi konusunda birçok çalışma yapılmaktadır. Bu alanda nitel çalışmalara rastlansa da yapılan çalışmaların çoğu nicel yöntemlerle gerçekleştirilmiştir.

Araştırmanın Amacı: Bu araştırma Kütahya il merkezindeki okullarda gerçekleştirilmiş ilk nitel çalışmalardan birisidir. Dolayısıyla çalışmanın amacı öğretmen algılarına

dayalı olarak okul müdürü ve öğretmen etkileşimlerinden doğan ve okul iklimini olumsuz etkileyen dinamikleri ortaya çıkarmaktır.

Yöntem: Bu araştırma nitel bir araştırmadır ve olgubilim (fenomenoloji) deseni kullanılarak gerçekleştirilmiştir. Araştırmanın örneklemini Kütahya il merkezinde görev yapan 18 öğretmen oluşturmaktadır. Katılımcıların 10'u kadın 8'i ise erkek olup yaş aralığı 29-55 (M=39,72) arasında değişmektedir. Çalışmanın örneklemi maksimum çeşitlilik ve kriter örnekleme yöntemiyle belirlenmiştir. Araştırmanın verileri planlama, veri toplamaya başlama, temel verinin toplanması, veri toplamanın bitirilmesi ve kod ve temaların oluşturulması şeklinde elde edilmiştir. 11 sorudan oluşan veri toplama formuna iki uzman görüşüne başvurulduktan ve iki katılımcıyla pilot görüşmeler yapıldıktan sonra nihai şekli verilmiştir. Araştırmanın verileri Ekim 2016 ile Mart 2017 tarihleri arasında 35-60 dakika süren görüşmelerle elde edilmiştir. Çalışmada kullanılan verilerin geçerliği için katılımcı teyidi, uzman incelemesi aktarılabilirlik için ayrıntılı betimlemeye başvurulmuştur. Güvenirlik için Miles ve Huberman formülü kullanılmış ve %91 uyum gözlenmiştir. Elde edilen verilerin incelenmesi için betimleyici analiz tekniğine başvurulmuştur. Görüşmeler kayıt altına alındıktan sonra çözümleme işlemi yapılmıştır. Kod ve temalara ayırma işlemi iki akademisyen tarafından yapılmıştır. Bunun sonucunda elde edilen bulgulara göre 656 kodlama referansı ile 5 tema, 13 alt temaya ulaşılmıştır.

Bulgular, Yorum ve Tartışma: Katılımcı öğretmenlerin okul müdürünün yönetimsel becerileri konusundaki algılarına göre, müdürlerinin zaman zaman öğretmenler üzerindeki baskısını hissettirmek için bürokratik kuralları sıkılaştırdığı fakat kendi siyasi düşüncesine yakın olan kişilere yönelik böyle bir davranış içinde olmadıklarını ifade etmektedirler. Ayrıca öğretmenler okulda çok fazla angarya işlere maruz kaldıklarını ifade etmişlerdir. Buluç'un okuldaki aşırı bürokratik yapının okulun etkililiğini düşüren bir faktör olarak bulması çalışmamızla örtüşmektedir. Okul müdürünün ve öğretmenlerin sergilediği rasyonel sorumlulukları hakkında öğretmen algılarına göre, okulda öğretmenlerin sorumluluklarını yerine getirirken engelleyici ya da işbirlikçi davranışlar sergilediği bunun yanında okul müdürlerinin de destekleyici ve kısıtlayıcı davranışlar gösterdiği görülmüştür. Karakelle'nin öğretmenlerin mesleki yaşamlarında işbirlikçi davranışlar göstermediği ve öğretmenlik becerilerini geliştirmeye istekli olmadığı bulguları çalışmamla örtüşmektedir. Okul müdürünün vizyon, misyon ve stratejik plan belirleme konusundaki öğretmen algılarına göre; okul müdürlerinin bir kısmının yeniliğe açık olduğu, öğretmen ve öğrenciyi güçlendirme konusunda çabalar gösterdiği belirlenmişken bazı öğretmenlerin okullarında vizyon, misyon ve stratejik planlarla ilgili herhangi bir bilgiye sahip olmadığı bunun yerine müdürün günlük rutin işlere zaman harcadığı görülmüştür. Tahaoğlu ve Gedikoğlu okul müdürlerinin en çok dönüşümcü liderlik becerilerini gösterdiğini ifade ettiği çalışmasıyla çalışmamızın bulguları örtüşmemektedir. Öğretmen algılarına göre okul müdürünün adaletli bir yönetim sergileyip sergilemediği belirlenmeye çalışılmıştır. Bu doğrultuda öğretmenler okuldaki adaleti etkileşimsel adalet ve edimde adalet olarak algılamışlardır. Etkileşimsel adalet konusunda öğretmenlerin çoğunluğu okul müdürünün kayırmacı bir tutum içinde olduğunu tekrar ifade ederek özellikle sicil

verme ve performans değerlendirme konusunda adil olmadıklarını belirtmişlerdir. Edinimde adalet alan yazınında maaş artışı, terfi gibi konuları da içerdiği gibi övme, yüceltme gibi davranışları da kapsamaktadır. Yapılan çalışmada öğretmenler maaş artışı, terfi gibi somut dönütler yaratacak adalet davranışını algılayamamışlar ve edinim adaletini sadece öğretmen başarılarını fark edebilen/etmeyen müdür davranışı olarak nitelemişlerdir. Bu durum yine okul müdürünün merkeziyetçi yapıdan kaynaklanan yöneticilik fonksiyonlarının kısıtlı olmasına dayandırılmaktadır. Akyol'un yaptığı çalışmada elde ettiği öğretmenlerin okul müdürü tarafından adil bir şekilde değerlendirilmediği sonucu çalışmamızla örtüşen bir bulgudur. Okul müdürünün iş ortamına yönelik tutumlarının belirlenmeye çalışıldığı bu bölümde öğretmen algılarına göre okulda takım ruhu ve adanmışlığa yönelik davranış örüntülerinin azlığı dikkate çarpmaktadır. Takım ruhunun bulunmamasının sebebi olarak okul müdürünün ortak hedefler yaratamaması gösterilirken adanmışlık önündeki en büyük engelin öğretmen adaylarının atanma sürecindeki Kamu Personeli Seçme Sınavı (KPSS) gibi sınavların yarattığı tükenmişlik duygusu olduğu ifade edilebilir. Troen ve Boles'un etkili grupların oluşturulmasındaki en büyük faktörün lider olduğu bulgusu çalışmamızın bulgularını desteklemektedir.

Sonuç ve Öneri: Araştırmanın bulgularına göre Kütahya ilinde okul ikliminin pek de olumlu olmadığı söylenebilir. Türk eğitim sisteminin bürokratik yapısının okul müdürünün liderlik becerilerini olumsuz etkilediği ve okul etkililiğini azaltan bir faktör olduğu sonucuna ulaşılabilir. Katı bürokratik yapının yerine daha gevşek, birbiriyle etkileşime daha açık bir sistemin konması okul ve paydaşlarının daha özgün bir kimliğe kavuşması açısından gerekli görülmektedir. Böylece merkezi yönetimin yetkilerini hem öğretmen hem de okul müdürleri ile paylaşması yüksek performans gösteren okullara yol açabilecektir. Eğitim örgütlerinin değişime en açık kurumlar olmaları için geleceğe odaklı bir yönetim anlayışı ile etkin hedef, vizyon, misyon belirlemeleri ve stratejik planlamalar yapmaları gerekmektedir. Örgütsel adalet açısından okul müdürlerinin öğretmen değerlendirmelerini önyargı ve politik görüşlerden uzak bir şekilde yapması önerilmektedir. Bunun yanında yönetici atamaları mutlak kriterlere ve liyakate göre yapılmalıdır. Son olarak okul ortamını olumsuz etkileyen sebeplerden birisi de öğretmen tükenmişliğidir. Bu güne kadar yapılan çalışmalarda öğretmenlerin belli bir süre çalıştıktan sonra tükenmişlik sendromu yaşadığı ifade edilmekteyken bizim çalışmamızda daha mesleğe başlamadan yaşaması çözülmesi gereken önemli bir sorundur. Bu bağlamda indirgeyici KPSS sınavlarının kaldırılması ve eğitim fakültelerinin cazibelerinin arttırılması önerilebilir.

Anahtar Kelimeler: Okul, okul müdürü, vizyon-misyon, ödül ve cezada adalet, hedef

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Comparison of Hope and Life Satisfaction Levels of Turkish and American Middle School Students*

Hulya SAHIN BALTACI[1]

ARTICLE INFO	ABSTRACT
	Purpose: In the literature, it has been stated that hope and life satisfaction in childhood and adolescence are associated with cultural and social factors. This study aimed to discover whether Turkish and American adolescents differ in their life satisfaction and hope levels, by examining hope and life satisfaction in Turkish and American adolescents according to variables such as gender, socioeconomic status (SES), and parental attitudes. **Research Methods:** In the study, a descriptive research design was employed during the data collection and analysis phases.

Findings: According to the first findings of the research, there was a significant difference between the life satisfaction of Turkish students and that of American students in favor of the Turkish students, whereas their hope levels did not vary significantly. In addition, the life satisfaction and hope levels of students from both countries did not differ according to gender. Another finding of the study was that the hope level of Turkish students with high socioeconomic status (SES) was higher than that of those with medium and low SES. The results indicated that parental attitudes did not differ significantly regarding the hope and life satisfaction levels of Turkish students, whereas there were significant differences both in the hope and life satisfaction levels of American students regarding parental attitudes. **Implications for Research and Practice:** The study did not find any difference between the hope levels of Turkish and American students, whereas it observed that the life satisfaction of Turkish students was higher than that of the American students. This finding can be explained, as adolescence problems are universal and are given high importance in every culture.

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Introduction

Humans' efforts to survive and to hold on to life have always prevailed, despite wars, diseases, and natural disasters throughout history. Certainly, many personal characteristics and traits of human beings contribute to making them so strong. The most crucial power that gives an individual strength to overcome the challenges of life and that makes this struggle meaningful is hope.

According to the father of the Theory of Hope, Charles R. Snyder (2002), hope is not merely a sentiment, but an interactive and complex process, with motivational and cognitive dimensions. Synder et al. (1991) originally defined hope in two dimensions: desiring to achieve the goal and feeling the power in himself to achieve the goal (agency), and the ability to find ways to achieve the goal (pathways). However, according to the new hope theory, hopeful thinking has three interrelated components: a goal, pathway thinking, and agency (Snyder & Lopez, 2007). The *goals* must be worthwhile and open enough to motivate individuals to follow them. However, targets that are 100% reachable do not create hope for the individual. *Pathway thinking* refers to the feeling of producing successful plans to meet objectives. It is a kind of mental plan or map that allows one to reach established goals. Beyond the primary road, a highly hopeful individual can produce alternative routes to reach the targeted destinations. The *agency* is the motivational component of the theory of hope, or the capacity to use one's paths to achieve the desired goals. Despite the fact that hope is a feeling that one experiences when all practical ways to achieve a goal are exhausted, it is not a passive feeling that is experienced only in dark times; hope is also a goal-oriented cognitive process (Snyder et al., 1991). Hope is an impulse for individuals to define meaningful goals, discovering the ways required to achieve these goals, and to consequently realize these goals. In conclusion, hope is a significant psychological power that protects individuals against negative life events. This power helps individuals define their goals and objectives vis-à-vis any challenge in their lives, and to take further steps in their lives in a fully determined manner, believing that a bright future is ahead of them. Frank (1968) described hope in a similar fashion, as a meaningful blend of feeling and thought. He highlighted that hope had two dimensions, cognitive and sentimental, and he defined hope as a characteristic that gives the feeling of well-being and motivates individuals to take action (cited by Akman & Korkut, 1993).

A traumatic experience in childhood decreases the level of hope in the years to come (Carr, 2011). Physically neglected children did not have anybody who taught them to think of hope. It is often considered that physical neglect mostly takes place in poorer families; however, sometimes wealthier families fail to deliver sufficient care to their children. Neglect passively destroys hopeful thinking, while physical abuse is an active factor in decreasing hope. Children who are raised in an environment without borders, consistency, and support cannot learn to think hopefully (Snyder, 2002). If positive experiences, such as secure attachment and warm parenthood, outnumber negative experiences during childhood, people may have high hope levels and more friendship, happiness, and trust towards self and life (Dursun, 2012). Hope helps

individuals to set a goal and act according to a plan to achieve that goal, and is associated with life satisfaction.

Life satisfaction is defined as positive objective evaluations of an individual regarding the whole of his/her life, or some specific areas such as family or school life (Diener, Suh, Lucas, & Smith, 1999; Suldo & Huebner, 2006). In the literature, it has been hypothesized that hope and life satisfaction in childhood and adolescence are associated with cultural factors; however, the number of studies in this field is limited. Nevertheless, experiencing positive characteristics at early ages is a necessity for basic prevention of problems such as depression, stress, behavioral disorders. A study supporting this argument was conducted by Gilman and Huebner (2006), which suggested that adolescents with higher life-satisfaction rates had lower anxiety and depression levels and higher self-esteem and hope levels. Life satisfaction in adolescence varies according to many factors (Leung & Leung, 1992), which can include personal factors—such as body image and a positive sense of self—as well as environmental factors (Dew & Huebner, 1994). Peer relations at school age, and the level of recognition by peers in these relationships and in relationships with family and their environment, are decisive for the emotional experiences, prejudices, and social attractions of adolescents, and thus have an impact on the life satisfaction of individuals (Kaya & Siyez, 2008).

The majority of studies on life satisfaction have recruited participants from Western and English-speaking countries (Abdel-Khalek & El Nayal, 2015). While Huebner (2004) stated that life satisfaction in adolescents is associated with cultural factors, the number of studies in this field is limited. According to Huebner, Laughlin, Valois and Gilman (2004), intercultural studies are needed to investigate the cultural impact on positive attributes, such as subjective well-being in children. According to Huebner (2004), multidimensional life-satisfaction studies also support intercultural comparability. Based on the findings of this study, culturally-independent primary and secondary prevention studies can be planned in order to increase hope levels of adolescents.

Park and Huebner (2005) examined correlations between perceived differences in culture and life satisfaction using Korean and US adolescents. Korean adolescents reported less satisfaction with family, friends, school, self, and living environment, as well as a lower life satisfaction than adolescents living in the United States. The level of self-satisfaction has a stronger correlation with global life satisfaction than it does for Korean adolescents or US adolescents. The researchers discussed these findings in the context of individualist and collectivist cultural frameworks as the moderator of well-being. In another study, life satisfaction did not differ significantly between the Australian sample and Hong Kong sample (Pan, Wong, Joubert, & Chan, 2010).

One group of researchers compared self-compassion, life satisfaction, and positive- and negative-affect characteristics of university students from Turkey with other countries (England, France, Poland, Romania, Italy, Brazil, Spain, and Ukraine) (Deniz, Arslan, Ozyesil, & Izmirli, 2012). They had found that the Turkish students significantly differed from the students from the other countries regarding their life-

satisfaction levels. Studies revealed that life satisfaction had an impact on extraversion or neuroticism and was also an important indicator for psychological attributes, such as self-esteem, focus of control, anxiety, depression, and social stress in the early adolescence period (Civitçi, 2009). In studies on children and adolescents, the relationships between life satisfaction and family support (Bradley & Corwyn, 2004; Nansook, 2004; Nansook, 2005; Petito & Cummins, 2000), parental and friend relationships (Levin & Currie, 2010; Nickerson & Nagle, 2004), self-esteem, physical appearance (Huebner, Gilman, & Laughlin, 1999), gender (Dew & Huebner, 1994; Neto,1993; Verkuyton, 1996), academic achievement (Salmela-Aro & Tynkkynen, 2009; Crede, Wirthwein, McElvany, & Steinmayr, 2015), social emotional learning skills (Sahin-Baltaci, 2013), and socioeconomic status (Sirin, 2005) have been investigated.

Gender, the attitude of parents, socioeconomic status, and income are significant variables that are widely studied alongside life satisfaction and hope levels in adolescents. According to the studies on life satisfaction of primary school students, many findings suggest no difference in overall life satisfaction regarding gender (Casas et al., 2007; Civitçi, 2009; Ikiz & Gormez, 2010; Fogle et al., 2002; Gilman & Huebner 2006; Goldbeck et al., 2007; Gun & Bayraktar, 2008; Huebner ,1994; Huebner, Valois, Paxton, & Drane, 2005; Nickerson & Nagle, 2004; Seligson et al., 2003; Sahin-Baltaci, 2013). On the other hand, Goldbeck et al. (2007) suggested that life satisfaction of males was higher than that of females, while Koker (1991) found that life satisfaction was higher in females. According to Diener and Diener (1995), economical status of any given nation was related to its people's life satisfaction. Abdel-Khalek and El Nayal (2015) found a positive association between gross domestic product and satisfaction with life. Ash and Huebner (2001) reported that disadvantaged students from lower socioeconomic backgrounds reported lower life satisfaction than students with higher socioeconomic status. Similarly, Raboteg-Šarić, Brajša-Žganec and Šakić (2009) reported that adolescents' perceptions of their family's economic status had a modest positive correlation with their life satisfaction. Another significant variable studied along with life satisfaction in adolescents is the attitude of parents. Studies suggest that adolescents who perceived their parents' attitudes positively had a higher life satisfaction than those who perceived it negatively (Civitçi, 2009; Demo & Acock, 1996; Gilman & Huebner, 2006; Milevsky, Schlechter, Netter, & Keehn, 2007; Petito & Cummins, 2000; Suldo & Huebner, 2004; Sahin-Baltaci, 2013). Acun-Kapikiran, Korukcu and Kapikiran (2014) reported that young adolescents whose decisions were respected, supported, and given autonomy by their parents have higher life satisfaction. They also found a negative correlation between an authoritarian parental attitude and life satisfaction.

Hope has been examined along with other variables, such as gender, life satisfaction, optimism, subjective wellbeing, meaning in life, and coping with stress. One study's findings suggest that the hope levels of adolescents did not differ significantly across genders (Atik & Kemer, 2009; Carvajal, Evans, Nash, & Getz, 2002; Snyder et al., 1991; Snyder et al., 1997). In order to better understand the origins of hope, the relationship between parental commitment, stressful life events, personality variables, and hope was examined in a sample of 647 middle school students in a

southeastern US state (Otis, Huebner, & Hill, 2016). They reported statistically-significant correlations between hope and four determinant variables, and student's grade levels and socioeconomic status (SES) levels. Dursun (2012) found that motivation towards goals as a sub-dimension of hope increased life satisfaction in a study of university students. Studies suggested that individuals with higher hope levels had a better academic success rate (Curry et al., 1997) and better physical and psychological well-being (Stanton et al., 2002). It is thought that a cross-cultural construct correlates positively with self-esteem, perceived problem-solving abilities, control perceptions, optimism, positive efficacy, and positive outcome expectancies (Synder et al., 1991).

Adolescence is a period in which many problems are experienced. Adolescents who are pleased and happy about their lives and who look at their life with hope meet vital criteria in terms of both their emotional and social development and in having a "positive power" that is available to facilitate their lives in the years to come (Civitçi, 2009). Understanding hope provides a functional perspective in focusing on the strong points and needs of a child (Atik & Kemer, 2009). The years of adolescence that are of critical importance for developing personality are also the years in which many personal, social, and family problems are experienced. Therefore, teaching hopeful thinking caters to primary and secondary prevention against social and physical problems. Individuals with higher hope levels can naturally devise more strategies (planning ways to achieve goals) to cope with stress when they face any stressor, and they trust in their skills to use these strategies (motivation towards goals). High hopers do not experience anger or other similar negative feelings when they encounter an obstacle on their way to the goal, because they also have other goals to achieve that would also make them happy (Snyder, Feldman, Taylor, Schroeder, & Adams, 2000).

Furthermore, as suggested by Snyder (2002) and Carr (2011), hope is affected by familial and cultural characteristics. Therefore, families and psychological counselors in schools have a great responsibility to give such positive traits at early ages, to support efforts to cope with difficulties in life, to hold on to life, and to survive. Similarly, Snyder et al. (2002) highlighted the importance of understanding the impact of hope on a child's life by using psychological counselors. The differences between hope and life satisfaction were greatly influenced by culture, as expected, at different stages of life (Bronk, Hill, Lapsley, Talib, & Finch, 2009). Huebner (2004) and Myers and Diener (1995) argue that life satisfaction and hope are associated with cultural characteristics, and further studies are needed to examine these relationships. Parents in every culture reflect their attitudes related to raising children in their functioning and in their daily activities, for the purpose of passing on their own value systems and main attitudes to their children (Kagitcibasi, 2007). Collectivistic Eastern societies, in which the self is a more interdependent concept, emphasize the importance of harmony with members of important groups, such as family and school; in such cultures, individuals' thoughts, feelings, and behaviors are significantly influenced by other people's perspectives (Markus & Kitayama, 1991, 1994). In contrast, in individualist cultures such as North America, where the self is perceived as an independent entity, internal attributes such as personal interests, inner feelings, and

personal beliefs tend to be more valued (Kashima, Siegal, Tanaka, & Kashima, 1992, in citied Park, 2000). In today's world, living side-by-side with different cultures is inevitable and multiculturalism has become popular; it is therefore crucial to increase the number of studies that examine cultural differences, as well as cultural similarities. In the concept of multiculturalism, where individuals become competent in more than one culture without losing their cultural identities, intercultural interaction is obligatory (Ozyurek, Cetin, Yildirim, Evirgen, & Ergun, 2016). Prioritizing similarities can ensure that people of different cultures who must live together can accept and recognize each other. In addition, comparisons can be made between and among different countries that represent individualist and collectivist cultures, to support the interpretation of intercultural comparisons by examining the characteristics of individuals and societies. This study can contribute to the cultural perspective on life satisfaction and hope studies in adolescents.

According to Bronk, Hill, Lapsley, Talib and Finch (2009), adults need to set a goal to achieve a satisfaction feeling. For this reason, the ideal time to actively deal with individuals may be late childhood or early puberty. Supports that are designed to help young people discover their lifestyle goals and determine how they will work for them should be presented during adolescence and adulthood. For these reasons mentioned above, this study was aimed at discovering whether a difference exists between Turkish (representing collectivistic culture) and American (representing individualistic culture) adolescents in their life satisfaction and hope levels, by examining hope and life satisfaction in Turkish and American adolescents with other variables, such as gender, socioeconomic status (SES), and parental attitudes.

Method

Research Design

This study aimed to find out whether Turkish and American adolescents differ in their life satisfaction and hope levels, by examining hope and life satisfaction in Turkish and American adolescents according to variables such as gender, socioeconomic status (SES), and parental attitudes. To achieve this goal, the study used a descriptive research design during the data collection and the analysis phases.

Research Sample

Participants consisted of 336 Turkish and 354 American secondary school students. The Turkish participants included 185 (55.1 %) female and 151 (44.9 %) male students. Their ages ranged from 12 to 14 years old (M = 12.76, SD = 0.87) and were studying at seven different secondary schools in a city in the south of Turkey. The American participants included 185 (52.3 %) female and 169 (47.7 %) male students. Their ages ranged from 12 to 14 years old (M = 13.29, SD =0.78) and were attending summer school at University of California Berkeley.

Research Instruments and Procedures

To determine levels of hope, this study used the English form of the "Children's Hope Scale", a six-items measure developed by Snyder et al. (1997), and the same scale adapted into Turkish by Atik and Kemer (2009). For life satisfaction, the English form of "Multidimensional Student's Life Satisfaction Scale – Short Form", a five-item measure developed by Huebner et al. (2004), was used, and the same scale was adapted into Turkish by Siyez and Kaya (2008). In addition, student personal information forms were used to determine demographic information and perceived parental attitudes. In the students' personal information forms, brief explanations were made about the attitudes of parents, so that students had a general understanding about parental attitudes. Individuals' socioeconomic status (SES) data were not collected; however, when the types of schools (public and private) and school districts are taken into consideration, it is estimated that students come from middle and upper SES families.

Official permission to collect data for Turkish participants was obtained primarily from the Ministry of National Education and from local authorities. For the American participants, permission was obtained from the summer school director and their family. Students participated voluntarily. Prior to the survey, the students were informed about the study, and that their responses were kept confidential and only used for research. The duration of the scales was approximately 20 minutes.

Children's Hope Scale English Form: The Children's Hope Scale (Snyder, Hoza et al., 1997) (CHS) is made up of six items equally split between the pathways and the structures of the agency; it was created to measure hopeful thinking towards targets in children and adolescents between 8 and 16 years of age. Participants were expected to rate the extent to which they assessed themselves on a 6-point scale. CHS has been proven to have acceptable internal consistency and test-retest reliability. Valle, Huebner and Suldo (2004) stated alpha coefficients of 0.83 and 0.84 for children aged 10-14 and 15-19 years. Test-retest reliability of CHS was shown in a 2-week interval (r = 0.73) and a 1-month interval (r = 0.71). The Cronbach's Alpha coefficient of the Children's Hope Scale was calculated in this study and found to be 0.80.

Children's Hope Scale Turkish Form: To evaluate the Turkish students' hope level in this study, we used the Children's Hope Scale, a six-item measure which was adapted into Turkish by Atik and Kemer (2009). Findings about the structural validity of the scale were supported by the two-factor structure in the original study. The factor analysis yielded two factors in compliance with the original factor structure (motivation towards the goal and ways to achieve the goal). Similar to the original study, items 1, 3, and 5 were loaded into the sub-dimension of "motivation towards the goal," while items 2, 4, and 6 were loaded into "ways to achieve the goal". Factor loads in the first factor ranged between 0.33 and 0.72, while those in the second factor ranged between -0.81 and -0.41. The dimension of motivation towards the goal explained about 44% of the variance, while the dimension of ways to achieve the goal explained 14% of the variance. The two-factor structure explained about 58% of the total variance. For the convergent validity of the scale, the correlation between self-

esteem and academic success was examined by means of the Children's Hope Scale (CHS). The results point to the fact that the hope level was correlated with self-esteem and academic success. A positive significant correlation was found between CHS scores and the scores of the Rosenberg Self Esteem Scale [r = 0.48, n = 758, p<0.01]. In the study where the academic means of the children were used, a positive significant correlation was achieved between hope scores and academic success [r = 0.23, n = 758, p<0.01]. The Cronbach's Alpha internal consistency coefficient of CHS for the whole scale was found to be 0.74, while the test-retest correlation coefficient was 0.57. The Cronbach's Alpha coefficient of the Children's Hope Scale was calculated in this study as 0.78.

The Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS) English Form: The BMSLSS (Huebner et al., 2004) is a five-item measure which measures family, school, friends, self, and living environment. Some of the items in the measure give the total life satisfaction score. Items are rated on a seven-point Likert scale, with responses ranging from "Terrible" (1) to "Delighted" (7). Cronbach alpha coefficients for the total score have been reported as 0.75 for middle school students. After removal of any single substance in BMSLSS, alpha coefficients ranging from 0.80 to 0.85 were consistently obtained. The construct validity of BMSLSS is supported in two ways. The significance of the first total life satisfaction score was assessed. Only one factor showed a larger eigenvalue than 1, and the results of the screen test showed that only one factor was significant. This single factor accounted for 50% of the total variance. When a factor loading cut off value of .40 was used, it was found that all five items were acceptable loaded at the first factor. Coefficients ranged from 0.65 to 0.73 (Huebner, Suldo, &Valois, 2003). The Cronbach's Alpha coefficient of the BMSLSS was calculated in this study as 0.82.

The Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS) Turkish Form: In this study, Life Satisfaction Scale of Short Multidimensional Students (BMSLSS), adapted into Turkish by Siyez and Kaya (2008), was used to evaluate the life satisfaction of Turkish students. The scores on the BMSLSS Turkish version had acceptable test-retest reliability (r = 0.82) and internal consistency (r = 0.89). Item-total correlations varied from 0.64 to 0.78. To assess the validity of the BMSLSS structure, a discovery factor analysis was conducted. The factor structure of BMSLSS was analyzed for class levels and general example (see Table 4). It was found that all five materials satisfactorily loaded in a single factor. For the entire sample, factor loadings were .49 to .82 and eigenvalue was equal to 2.89, while the single factor constituted 48% of the total variance. The Cronbach's Alpha coefficient of Multidimensional Students' Life Satisfaction Scale calculated in this study was 0.81.

Data Analysis

The data were scanned for parametric statistical assumptions. The normality, homogeneity of variances, and linearity assumptions for each cell were tested at multivariate levels. In this study, *t*-test and two-way MANOVA tests were used. The significance was set at *p*<0.05. Before the analysis, the researchers checked whether the data showed a univariate normal distribution for both groups. The data were

controlled whether they were coherent to univariate and multivariate analyses. Twenty-one data exceeding 3.29 in the Turkish groups, and 6 data exceeding 3.29 in the American groups, were excluded from the data set (Tabachnick & Fidell, 2007). Box's M test was conducted on the remaining 690 pieces of data, in order to examine the homogeneity of the variance/covariance matrices as a premise of MANOVA analysis. The findings suggest that variance and co-variance factors between dependent variables were the same for all levels, and there was no significant difference among them [Turkish data; Box's M: 127.615, $F_{(105/6251)}$= 1.002 p>.05; American data, Box's M: 131.672, $F_{(99/5017)}$= 1.096 p>.05]. Furthermore, the linear correlation between dependent variables, as another premise, was tested by Pearson's correlation coefficient, and a moderately-positive significant correlation (r=0.53, *p*<0.001) was calculated. For the MANOVA analysis method to yield accurate results, dependent variables should not give too high correlations among themselves. The fact that the correlation value among dependent variables was equal to or lower than 0.90 (Tabachnick & Fidell, 2007) shows that there was no multicollinearity problem.

Results

Descriptive statistics, skewness, and kurtosis values are presented in Table 1. As can be seen in the table, skewness and kurtosis values in all data were between -1.0 and +1.0 (Muthén & Kaplan 1985), which is within acceptable limits for a normal distribution.

Table 1

Descriptive Statistics about Variables

		n	*M*	*df*	Skewness	Kurtosis
Hope	Turkish Students	336	29.44	4.61	-.653	-.333
	American Students	354	29.41	4.04	-.628	.133
Life Satisfaction	Turkish Students	336	35.95	4.49	-.518	-.328
	American Students	354	35.23	4.39	-.484	-.295

In the study, the *t*-test was conducted first in order to determine whether life satisfaction and hope levels varied according to the country variable; the results are presented below in Table 2.

Table 2

Results of the t-Test Related to Hope and Life Satisfaction Based On Country

		n	*M*	*df*	t	*p*
Hope	Turkish Students	336	29.44			
	American Students	354	29.41	688	.067	.946
Life Satisfaction	Turkish Students	336	35.95			.034*
	American Students	354	35.23	688	2.121	

*p < .05

As can be seen in Table 2, there is a significant difference between Turkish and American students' life-satisfaction levels (t(688) = 2.121, $p < .05$), but no significant difference in hope levels (t(688) = .067, $p > .05$). Accordingly, it was observed that the level of life satisfaction of Turkish students was higher than that of American students, whereas there was no significant difference between Turkish and American students in their hope levels.

After the *t*-test, a two-factor MANOVA analysis was conducted in order to determine the impact of gender, SES, and parental attitudes on hope and life-satisfaction levels of Turkish and American students. Table 3 shows the mean hope and life-satisfation level scores of Turkish and American students according to gender, socioeconomic status, and parental attitudes, while Table 4 shows the MANOVA results.

Table 3.

Descriptive Statistics of Turkish and American Students

				Hope		Life satisfaction	
Dependent Variables			n	*M*	S	*M*	S
Gender	Turkish	Girls	185	29.74	4.66	36.03	4.56
		Boys	151	29.06	4.54	35.84	4.40
	American	Girls	185	29.14	4.16	35.08	4.45
		Boys	169	29.71	3.88	35.39	4.33
SES	Turkish	Lower	189	28.76	4.78	35.61	4.46
		Middle	75	29.98	4.45	36.33	4.52
		Upper	72	30.62	4.01	36.41	4.50
	American	Lower	19	28.73	4.25	33.84	4.86
		Middle	163	28.96	4.26	35.17	4.54
		Upper	162	29.95	3.79	35.50	4.06

Table 3 Continue

				Hope		Life satisfaction	
	Turkish	democratic	108	30.14	4.22	36.10	4.24
		authoritarian	105	28.85	4.60	36.27	3.98
Parental Attitudes		overprotective	91	28.91	5.04	35.61	4.95
	American	democratic	197	30.38	3.62	36.63	4.86
		authoritarian	66	27.92	4.36	32.63	4.54
		overprotective	87	28.29	4.11	34.03	4.06

As shown in Table 4, a significant difference was observed among Turkish students in their hope levels according to socioeconomic status ($F_{(2-333)}$ = 5.031, p <0.05, η2 =0.029). According to the Bonferroni test conducted to find the source of difference, the hope level scores of students with a higher socioeconomic status were significantly higher than that of those with lower socioeconomic status (p<0.01). In American students, parental attitudes led to significant differences in both hope scores ($F_{(2-347)}$ = 14.514, p <0.01, η2 =0.007) and life satisfaction scores ($F_{(2-347)}$ = 28.573, p <0.01, η2 =0.14). Similarly, the combination of parental attitude and socioeconomic status gave way to significant differences in both hope ($F_{(8-576)}$ = 2.880, p <0.05, η2 =0.038) and life-satisfaction scores ($F_{(8-576)}$ = 2.879, p <0.05, η2 =0.038). According to the Bonferroni test results, the hope and life-satisfaction scores of students with democratic parenting attitudes were significantly higher than those of students with authoritarian or overprotective parents (p<0.01).

Table 4

Two-Factor MANOVA Results

		Turkish			American		
Hope	*df*	**F**	*p*	η^2	**F**	*p*	η^2
Gender	1	1.781	.183	.005	.018	.895	.000
SES	2	5.031	.007*	.029	.835	.435	.006
Parental Attitudes	2	2.626	.074	.017	14.514	.000**	.007
Parental Attitudes * Gender	2	.020	.980	.000	.089	.915	.001
Parental Attitudes * SES	4	.394	.813	.006	2.880	.023*	.038
Parental Attitudes * SES * Gender	4	.253	.907	.004	.236	.871	.002
Life Satisfaction	*df*	*F*	*p*	η^2	*F*	*p*	η^2
Gender	1	.141	.708	.000	1.513	.220	.005
SES	2	1,178	.309	.007	1.157	.316	.008

Table 4 Continue

Hope	Turkish				American		
	df	**F**	*p*	η^2	**F**	*p*	η^2
Parental Attitudes	2	.585	.557	.004	28.573	.000*	.141
Parental Attitudes * Gender	2	.134	.874	.001	.096	.909	.001
Parental Attitudes * SES	4	.561	.692	.009	2.879	.023*	.038
Parental Attitudes * SES * Gender	4	.626	.644	.010	.130	.942	.001

*p < .05, **p < .001

Discussion, Conclusion and Recommendations

The present study did not find any difference between the hope levels of Turkish students and those of American students. One possible explanation for this finding can be demonstrated by the fact that adolescent problems are universal; academic performance is given high importance in every culture, and these students were in a very busy period of their academic lives. Hope level is positively related to physical well-being (Barnum et al., 1998; Stanton et al., 2002). It is a developmental duty to show adaptation to quick physical changes and developments in every culture. Turkish and American students in this study were in the early adolescence period, and students in both groups faced similar physical, psychological, and academic problems during this period. Some studies suggest a correlation between hope and academic performance/anxiety (Curry et al., 1997; Snyder et al., 2002). Thus, the hope levels of Turkish and American students display similarities.

The second finding was that life satisfaction of Turkish students was higher than that of the American students. Some studies support this finding (Deniz, Arslan, Ozyeşil, & Izmirli, 2012). The higher life-satisfaction level of the Turkish students can be explained by cultural and environmental factors. Life satisfaction in adolescence is affected by personal factors, such as body image and a positive sense of self, as well as environmental factors (Dew & Huebner, 1994). These environmental factors vary from culture to culture. Myers and Diener (1995) suggest that close relationships and culture have a greater impact on life satisfaction. American society is more individualistic, while Turkish society is rather collectivistic (Kagitçibasi, 2006). Therefore, strong relationships with family and the environment may lead to greater life satisfaction of Turkish individuals (Kaya & Siyez, 2008). In communitarian societies, interpersonal relations are much closer and more supportive. This may explain why the life-satisfaction levels of Turkish students were found to be higher than that of the American students.

Other findings regarding gender variables are in accordance with the literature, as the present study also observed that the life satisfaction (Casas et al. ,2007; Ikiz &

Gormez, 2010; Fogle et al., 2002; Gilman & Huebner,2006; Goldbeck et al., 2007; Gun & Bayraktar, 2008; Huebner, 1994; Huebner et al., 2005; Nickerson & Nagle, 2004; Ozcan &Kiraz, 2017, Seligson et al. ,2003; Sahin-Baltaci, 2013) and hope level (Atik & Kemer, 2009; Carvajal, Evans, Nash, & Getz, 2002; Snyder et al.,1991; Snyder et al., 1997) of Turkish and American students did not differ according to gender. As Hubener (2004) stated, studies on children and adolescents have reported no gender differences in life satisfaction between children and adolescents consistently in grades 3 to 12.

Another finding of the present study was that the hope levels of the Turkish students with high SES were higher than that of students with medium and low SES. Higher SES could create a sense of confidence in accommodating goals and needs, especially for the future, which is a finding similar to those of Civitci (2009) and Unal (2006). SES did not lead to any significant difference in life satisfaction levels of Turkish students. Interesting, both hope and life-satisfaction levels of American students did not display any difference according to SES, which is a finding that is not in line with the previous research, which suggests that life satisfaction increases as socioeconomic status increases (Huebner et al., 2005; Otis, Huebner, & Hill, 2016; Seligson et al., 2003,). This finding could be due to the fact that students may not have high economic expectations from their families at this developmental stage. The levels of hope and expectations for a bright future displayed by Turkish students change according to their socioeconomic status. This may be explained by considering that families within Turkish culture are expected to meet all sorts of needs of their children. However, in American culture, individualism is prioritized, and families expect their children to become independent and self-sufficient at an early age (Ozyürek, Cetin, Yildirim, Evirgen, & Ergün, 2016). In other words, children in Turkish society may believe it is their right to have opportunities provided by their families, and the socioeconomic status of the family determines these opportunities. On the other hand, American children may have hopeful expectations because of their individual characteristics, rather than their families' socioeconomic status. This is because American families attribute more importance to self-development (self-confidence, self-sufficiency, etc.) and raising individualistic children (Yagmurlu, Citlak, Dost, & Leyendecker, 2009).

The results showed that parental attitudes did not cause any significant differences in hope and life-satisfaction levels of the Turkish students, whereas they caused significant differences in both hope and life-satisfaction levels of the American students. The difference observed in American students is in line with the literature: having a positive parental attitude will have an impact on students by helping them look at their future with hope (Unal, 2006). Several studies suggest that adolescents who perceive their parents' attitudes positively (democratic-receptive) have higher life satisfaction than those who perceive their parents negatively ("irrelevant", "authoritarian", "overprotective") (Demo & Acock 1996; Gilman & Huebner, 2006; Petito & Cummins, 2000; Shorey et al., 2003; Suldo & Huebner, 2004). In a recent study, authoritative parenting was found to relate to higher levels of self-esteem and life-satisfaction and to lower levels of depression (Milevsky, Schlechter, Netter, & Keehn, 2007). According to the literature, adolescents who have better relationships with their

parents have higher life-satisfaction levels (Bradley & Corwyn, 2004; Levin & Currie, 2010; Nansook, 2004; Nansook, 2005; Nickerson & Nagle, 2004; Petito & Cummins, 2000). Individuals displaying a democratic parenting attitude showed respect to their children, made decisions together, and had positive relationships with their children. Therefore, it is expected that those students who perceive their parents as democratic have higher life satisfaction than those who perceive their parents to be authoritarian or overprotective.

The results obtained from Turkish students differ from the literature (Acun-Kapikiran, Korukcu, & Kapikiran, 2014; Cenkseven-Onder, 2012; Civitci, 2009; Unal, 2006; Sahin-Baltaci, 2013). Acun-Kapikiran, Korukcu and Kapikiran (2014) stated that parents who pressure early adolescents into doing things hinder their freedom; those whose parents make decisions for them had lower levels of life satisfaction. Similarly, Yalnizca-Yildirim and Cenkseven-Onder (2018) stated that parents' acceptance and supportive behaviors towards adolescents' autonomy were the predictors of almost all dimensions of life satisfaction. The reason why this expected result was not observed in Turkish students may be that the meaning ascribed to 'authoritarian' and/or 'overprotective' is perceived in a positive manner in the Turkish family structure. This finding is in accordance with the idea that authoritarian parenting in American culture is related to a lack of compassion and refusal to help, while it is related to compassion and providing help in the Turkish culture (Kagıtçibasi, 1970).

The similarity between hope levels of Turkish and American adolescents can be attributed to the fact that the characteristics of the period of adolescence are more dominant than cultural factors. Moreover, adolescents in this specific age group particularly use information technology with very high levels of skill and knowledge. Interaction and communication increase the intercultural dimension, owing to the fact that information technologies have lifted any kind of border among cultures, leading to a decrease in the impact of cultural differences. Based on the findings of this study, primary and secondary prevention studies independent from cultures can be planned in order to increase the hope levels of adolescents.

As with all studies, this study includes certain limitations. The most important limitation of this research is that parental attitude is determined not on a scale but on the perceptions of adolescents. For this reason, it is recommended that parental attitudes be determined on a parental-attitude scale in similar studies. Second, this study utilized self-report measures. Considering that adolescence is marked by rapid changes in many directions, it may be advisable to use mixed-methods research in future studies. Despite shortcomings, this study's outcomes may have provided useful guidance to researchers and school counselors.

References

Abdel-Khalek A. M., &. El Nayal M. A. (2015). Satisfaction with life among young adults in four arab countries, *Psychological Reports: Sociocultural Issues in Psychology*, *117*(3), 931-939.

Acun-Kapikiran, N., Korukçu, O., & Kapikiran, S. (2014). Erken ergenlikte anne-baba tutumlarının yaşam doyumu ve depresyonla ilişkisi: benlik saygısının aracılık rolü [The relation of parental attitudes to life satisfaction and depression in early adolescents: the mediating role of selfesteem]. *Kuram ve Uygulamada Egitim Bilimleri*, *14*(4), 1246-1252.

Akman, Y., & Korkut, F. (1993). Umut olçegi uzerine bir calısma [A study on the scale of Hope]. *Hacettepe Universitesi Egitim Fakultesi Dergisi 9*, 193-202.

Ash C., & Huebner E. S. (2001). Environmental events and life satisfaction reports of adolescents: a test of cognitive mediation. *School Psychology International, 22*, 320-336.

Aydin, B. (2010). Üniversite ogrencilerinin duygusal zeka ve umut duzeyleri ile psikolojik saglamlıkları arasindaki iliskinin incelenmesi [*The investigate the relationship between emotional intelligence, hope and resilience and the role of emotional intelligence and hope in predicting resilience].* Yayınlanmamış Yüksek Lisans Tezi. Karadeniz Teknik Universitesi, Trabzon.

Atik, G. & Kemer, G. (2009). Cocuklarda umut ölçegi'nin psikometrik ozellikleri: gecerlik ve guvenirlik calismasi [Psychometric properties of children's hope scale: validity and reliability study]. *İlkogretim Online*, *8*(2), 379-390.

Barnum, D. D., Snyder, C. R., Rapoff, M. A., Mani, M. M., & Thompson, R. (1998). Hope and social support in the psychological adjustment of children who have survived burn injuries and their matched controls. *Children's Health Care*, *27*(1), 15-30.

Bradley, R. H., & Corwyn, R. F. (2004). Life satisfaction among european american, african american, chinese american, mexican american, and dominican american adolescents. *International Journal of Behavioral Development*, *28*, 385-400.

Bronk, K.C, Hill, P.L., Lapsley, D.K., Talib, T.L. & Finch, H. (2009). Purpose, hope, and life satisfaction in three age groups. *The Journal of Positive Psychology*, *4*(6),500-510.

Carr, A. (2011). *Positive Psychology: The science of happiness and human strength* (2nd ed.). New York & London: Routledge.

Carvajal, S. C., Evans, R. I., Nash, S. G., & Getz, J. G. (2002). Global positive expectancies of the self and adolescents' substance use avoidance: Testing a social influence mediational model. *Journal of Personality*, *70*(3), 422-442.

Casas, F., Figuer, C., Gonzalez, M., Malo, S., Alsinet, C., & Subarroca, S. (2007). The well-being of 12 - to 16-year-old adolescents and their parents: Results from 1999 to 2003 Spanish samples. *Social Indicators Research*, *83*, 87-115.

Cenkseven-Onder, F. (2012). Parenting style and life satisfaction in Turkish adolescents. *Educational Research and Reviews, 7*(26), 577-584.

Civitçi, A. (2009). Ilkogretim ogrencilerinde yasam doyumu: bazi kisisel ve ailesel ozelliklerin rolu [Life satisfaction in junior high school students: the role of some personal and familial characteristics]. *Uludag Universitesi Egitim Fakültesi Dergisi*, *22*(1), 29-52.

Crede, J., Wirthwein, L., McElvany, N., & Steinmayr, R. (2015). Adolescents' academic achievement and life satisfaction: the role of parents' education. *Frontiers in Psychology, 6* (52), 1-8.

Curry, L. A., Snyder, C. R., Cook, D. L., Ruby, B. C., & Rehn, M. (1997). Role of hope in academic and sport achievement. *Journal of Personality and Social Psychology, 7*(6), 1257-1267.

Demo, D. H., & Acock, A. C. (1996). Family structure, family process, and adolescent well-being. *Journal of Research on Adolescence, 6*(4), 457-488.

Deniz, M. E., Arslan, C., Ozyesil, Z., & Izmirli, M. (2012). Oz-anlayıs, yasam doyumu, negatif ve pozitif duygu: Türk ve diger ulke universite ogrencileri arasında bir karsilastirma [Self compassion, life satisfaction, negative and positive affect: a comparison between turkey and other different countries' university students]. *Mehmet Akif Ersoy Universitesi Egitim Fakultesi Dergisi, 12* (23), 428–446.

Dew, T., & Huebner, E. S. (1994). Adolescents' perceived quality of life: an exploratory investigation. *Journal of School Psychology*, *32*, 185-199.

Diener, E. , & Diener, M. (1995). Cross-cultural correlates of life satisfaction and selfesteem. *Journal of Personality and Social Psychology*, *68*, 653-663.

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276-302.

Dursun, P. (2012). The role of meaning in life, optimism, hope, and coping styles in subjective well-being. Unpublished Doctoral Thesis. Middle East Technical University, Ankara.

Gilman, R., & Huebner, E. S. (2006). Characteristics of adolescents who report very high life satisfaction. *Journal of Youth and Adolescence, 35*, 293-301.

Fogle, L. M., Huebner, E. S., & Laughlin, J. E. (2002). The relationship between temperament and life satisfaction in early adolescence: Cognitive and behavioral mediation models. *Journal of Happiness Studies, 3*, 373-392.

Huebner E. S. (2004). Research on assessment of life satisfaction of children and adolescents. *Social Indicators Research*, *66*, 3-33.

Huebner, E. S., Gilman, R., & Laughlin, J. E. (1999). A multimethod investigation of the multidimensionally of children's well-being reports: Discriminant validity of life satisfaction and self-esteem, *Social Indicators Research, 46*, 1-22.

Huebner, E. S., Suldo, S. M., & Valois R. F. (2003). Psychometric properties of two brief measures of children's life satisfaction: the students' life satisfaction scale (SLSS) and the brief multidimensional students' life satisfaction scale (BMSLSS). Paper prepared for the Indicators of Positive Development Conference March 12-13.

Huebner, E. S., Suldo, S. M., Valois, R. F., Drane, J. W., & Zullig, K. (2004). Brief multidimensional students' life satisfaction scale (BMSLSS): Gender, race, and grade effects. *Psychological Reports*, *94*, 351-356.

Huebner, E.S., Valois, R.F., Paxton, R.J., & Drane, J.W. (2005). Middle school students' perceptions of quality of life. *Journal of Happiness Studies*, *6*, 15-24.

Ikiz, F. E., & Gormez, S. K. (2010). Ilkogretim ikinci kademe ogrencilerinde duygusal zeka ve yasam doyumunun incelenmesi [Investigation of emotional intelligence and life satisfaction in secondary school students]. *Ilkögretim Online*, *9*(3), 1216-1225.

Kagitcibasi. C. (1970). Social norms and authoritarianism: A Turkish-American comparison. *Journal of Personality and Social Psychology*, 16 (3), 444-451.

Kagitcibasi. C. (2006). Yeniden insan insana [*New people and people].* Evrim Yayinevi, Istanbul.

Kagıtcibasi. C. (2007). *Family, self and human development across cultures: Theory and Applications*. Hillsdale, NJ: Lawrence Erlbaum.

Kaya, A., & Siyez, D. M. (2008). Validity and reliability of the brief multidimensional students' life satisfaction scale with Turkish children. *Journal of Psychoeducational Assessment, 26* (2), 139-147.

Kaya, A., & Siyez, D. M. (2008). Sociometric status and life satisfaction in Turkish primary and secondary school students. *Eurasian Journal of Educational Research, 32, 69-82.*

Leung, J. P., & Leung, K. (1992). Life Satisfaction, self-concept, and relationship with parents in adolescence. *Journal of Youth And Adolescence*, *21*, 653-665.

Levin, K. A., & Currie, C. (2010). Family structure, mother-child communication, father-child communication, and adolescent life satisfaction: A cross-sectional multilevel analysis. *Health Education*, *110* (3), 152-168.

Milevsky, A., Schlecter, M., Netter, S., & Keehn, D. (2007). Maternal and paternal parenting style in adolescents: Association with self-esteem, depression and life satisfaction. *Journal of Child and Family Studies*, 16, 39-47.

Muthen, B. O., & Kaplan, D. (1985). A comparison of some methodologiesfor the factor analysis of non-normal likert variables. *British Journal of Mathematical and Statistical Psychology*, *38*, 171-189.

Myers, D. G., & Diener, E. (1995). *Who İs Happy*?, Psychological Science, *6*, 10-19.

Nansook, P. (2004).The role of subjective well-being in positive youth development,*The ANNALS of the American Academy of Political and Social Science*, *591* (1), 25-39.

Nansook, P. (2005). Life satisfaction among korean children and youth a developmental perpective, *School Psychology International*, *26* (2), 209-223.

Nickerson, A. B., & Nagle, R. J. (2004). The influence of parent and peer attachments on life satisfaction in middle childhood and early adolescence, *Social Indicators Research*, *66*, 35-60.

Neto, F. (1993). The satisfaction with life scale: Psychometric properties in an adolescent sample, *Journal of Youth and Adolescence, 22*, 125-134.

Otis, K.L., Huebner, E.S., & Hill, K.J. (2016). Origins of early adolescents' hope personality, parental attachment, and stressful life events. *Canadian Journal of School Psychology, 31*(2), 102-121.

Ozcan, B., & Kiraz, A. (2017). Kıbrıs'ın kuzeyinde yaşayan ergenlerin yaşam memnuniyetleri [Life satisfaction of adolescents living in Northern Cyprus]. *Tarih Kültür ve Sanat Araştırmaları Dergisi, 6*(3), 88-106.

Ozyurek, A.; Cetin, A.; Yildirim, R.; Evirgen, N., & Ergun, S. (2016). Farkli kulturlerde aile cocuk etkilesimlerinin ogretmen bakis acisina gore incelenmesi [Analysis of the child-parent interaction in different cultures according to teachers viewpoınt]. *Uluslararası Sosyal araştırmalara Dergisi, 9*(43), 1477-1484.

Park, N. S. (2000). Lıfe satısfactıon among chıldren and adolescents: cross-cultural and developmental comparısons. *Unpublished Doctorate Thesis.* Department of Psychology, University of South Carolina. US.

Park, N., Huebner, E. S., Laughlin, J. E., Valois, R. F., & Gilman, R. (2004). A cross-cultural comparison of the dimensions of child and adolescent life satisfaction reports, *Social Indicators Research*, 66, 61-79.

Park, N., & Huebner, E .S. (2005). A cross-cultural study of the levels and correlates of life satisfaction among adolescents. *Journal of Cross-Cultural Psychology*, 36, 444-456.

Pan, J.Y., Wong, D. F. K., Joubert, l., & Chan, C.L.W. (2010). The protective function of meaning of life on life satisfaction among chinese students in australia and hong kong: a cross-cultural comparative study. *Journal of American College Health, 57*(2), 221-232.

Petito, F., & Cummins, R.A. (2000). Quality of life in adolescence: The role of perceived control, parenting style and social support, *Behaviour Change*, *17*, 196-207.

Raboteg-Šarić, Z., Brajša-Žganec, A., & Šakić, M. (2009). Life satisfaction in adolescents: the effects of perceived family economic status, self-esteem and quality of family and peer relationships, *Drus Istraz. Zagreb God., 3* (101), 547-564.

Salmela-Aro K., & Tynkkynen L. (2009). Trajectories of life satisfaction across the transition to post-compulsory education: do adolescents follow different pathways?, *Journal of Youth Adolescence*, *39* (8), 870-881.

Seligson, J.L., Huebner, E. S., & Valois, R.F. (2003). Preliminary validation of the brief multidimensional students' life satisfaction scale (BMSLSS). *Social Indicators Research*, *61*, 121-145.

Sirin, S. R. (2005). Socio economic status and academic achievement: a meta-analytic review of research. *Review of Educational Research, 75*, 417-453.

Siyez, D. M., & Kaya, A. (2008). Psychometric properties of the Turkish version of the brief multidimensional students' life satisfaction scale (BMSLSS). *Journal of Psychoeducational Assesment*, *26*, 139-147.

Snyder, C. R. (2002). Hope theory: rainbows in the mind. *Psychological Inquiry*, *13*(4), 249-275.

Snyder C. R., Feldman, D. B., Taylor, J. D., Schroeder, L. L., & Adams III, V. H. (2000). The roles of hopeful thinking in preventing problems and enhancing strengths. *Applied & Preventive Psychology, 9*, 249-270.

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., & Sigmon, S. T. (1991). The will and the ways: Development and validation of an individual differences measure of hope. *Journal of Personality and Social Psychology, 60*(4), 570-585.

Snyder, C. R., Hoza, B., Pelham, W. E., Rapoff, M. Ware, L., Danovsky, M., & et al. (1997). The development and validation of the Children's Hope Scale. *Journal of Pediatric Psychology*, *22*(3), 399-421.

Snyder, C.R., & Lopez, S. J. (2007). *Positive Psychology: the scientific and practical explorations of human strengths*. US: Sage Publications, Inc.

Snyder, C. R., Shorey, H. S., Cheavens, J., Mann Pulvers, K., Adams, V. H., & Wiklund, C. (2002). Hope and academic success in college. *Journal of Educational Psychology*, *94*(4), 820-826.

Stanton, A. L., Danoff-Burg, S., & Huggins, M. E. (2002). The first year after breast cancer diagnosis: Hope and coping strategies as predictors of adjustment. *Psycho-oncology*, *11*, 93-102.

Suldo, S.M., & Huebner, E.S. (2006). Is extremely high life satisfaction during adolescence advantageous? *Social Indicators Research*, *78*, 179-203.

Sahin-Baltaci, H. (2013). Turkish 6th-8th grade students' social emotional learning skills and life satisfaction. *International Journal on New Trends in Education and Their Implications*, *4*(2), 1-14.

Tabachnick, B. G., & Fidell, L.S. (2007). *Using multivariate statistics,* (5th ed.). Needham Heights, MA: Allyn and Bacon Publishers.

Unal, A. (2006). Ilkogretim ogrencilerinin gelecek ile ilgili umutlarinin yapisal esitlik modelleriyle belirlenmesi [*Grade students of expectations related of future determinations by types of structural equation models*]. Yayınlanmamış Yüksek Lisans Tezi, Osmangazi Universitesi. Eskişehir.

Valle, M. F., Huebner, E. S., & Suldo, S. M. (2004). Further evaluation of the Children's Hope Scale. Journal of Psychoeducational Assessment, *22*(4), 320-337.

Verkuyton, M. (1996). The impact of ethnic and sex differences on happiness among adolescents in the Netherlands. *Journal of Social Psychology, 126*, 259-264.

Yagmurlu, B., Citlak, B., Dost, A., & Leyendecker, B. (2009). Türk annelerin çocuk sosyalleştirme hedeflerinde eğitime bağlı olarak gözlemlenen farklılıklar [Child socialization goals of Turkish mothers: an investigation of education related within-culture variation]. *Türk Psikoloji Dergisi, 24* (63), 1-15.

Yalnizca-Yildirim, S., & Cenkseven-Onder, F. (2018). Lise Öğrencilerinin Yaşam Doyumunun Yordayıcıları Olarak Anne-Baba Tutumları ve Duygusal Zeka [Emotional intelligence and parental attitudes as predictors of high school students' life satisfaction]. *International Online Journal of Educational Sciences, X* (X), X –X. doi:10.15345/iojes.2018.01.009.

Türk ve Amerikalı Ortaokul Öğrencilerinin Umut ve Yaşam Doyum Düzeylerinin Karşılaştırılması

Atıf:

Özet

Problem Durumu: İnsanlık tarihi boyunca pek çok savaş, hastalık ve doğal afetlere rağmen, insanoğlunun yaşama tutunma ve hayatta kalma çabası galip gelmiştir. Elbette insanı bu kadar güçlü yapan pek çok kişilik özelliği vardır. Yaşam güçlükleri karşısında, bireye mücadele gücü veren, mücadeleyi anlamlı kılan en önemli güç umuttur. Umut, hedefi elde etmeyi isteme ve hedefi elde edebilmek için kendisinde güç hissetme (agency) ve hedefi elde edebilmek için yollar bulabilme becerisi (Pathways) olmak üzere iki boyutlu tanımlanmıştır. Umut hedefe ulaşmada bütün pratik yollar tükendiğinde yaşanan bir duygu olmakla birlikte sadece karanlık zamanlarda hissedilen pasif bir duygu değildir. Umut, bireyleri olumsuz yaşam olaylarına karşı koruyan önemli bir psikolojik güçtür. Bu güç bireylerin, her tür yaşam

zorluğuna karşın amaçlar belirleyerek, parlak bir geleceğin onları beklediği inancıyla yaşamda kararlılıkla ilerlemelerini sağlamaktadır. Bireylerin bir hedef belirleyip, bu hedefe ulaşmak için planlı biçimde davranmasını sağlayan umut, yaşam doyumunu ile ilişkilidir. Yaşam doyumu, kişinin yaşamının bütününe ya da özel alanlarına (aile hayatı, okul deneyimleri vb.) dair sahip olduğu olumlu, öznel değerlendirmeler olarak tanımlanmaktadır. Çocuk ve ergenlerdeki yaşam doyumunun kültürel ve sosyal faktörlerle ilişkili olduğu, ancak bu konuda yapılan çalışmaların sayıca az olduğunu belirtilmektedir. Ergenlerin duygusal yaşantıları, önyargıları ve sosyal cazibeleri üzerinde, okul çağındaki akran ilişkileri ve bu ilişkilerde akranlar tarafından kabul edilme, aile ve çevreyle ilişkiler yaşam doyumu üzerinde önemli bir belirleyici olmaktadır. Umut ve Yaşam doyumu kültürel ögelerden etkilenmektedir. Bununla birlikte kültürel farklılıkları ortaya koymaya yönelik araştırmalar oldukça sınırlıdır.

Araştırmanın Amacı: Bu araştırmanın temel amacı, Türk ve Amerikalı ortaokul öğrencilerinin yaşam doyumu ve umut düzeylerinin farklılık gösterip göstermediğini ortaya koymaktır. Ayrıca, cinsiyet, sosyo-ekonomik düzey ve ana-baba tutumlarına göre Türk ve Amerikalı öğrencilerde umut ve yaşam doyumunu incelemek amaçlanmıştır.

Araştırmanın Yöntemi: Bu araştırmada Türk ve Amerikalı ortaokul öğrencilerinin yaşam doyumu ve umut düzeylerinin farklılık gösterip göstermediğini ortaya koymak amacıyla betimsel araştırma yöntemi kullanılmıştır. Araştırmaya 336 Türk ve 354 Amerikalı Ortaokul öğrencisi katılmıştır. Türk öğrencilerin 185'i (% 55.1) kız, 151'i (% 44.9) erkektir ve yaşları 12 ile 14 (*M* = 12.76, *SD* = .87) arasında değişmektedir. Amerikalı öğrencilerin 185'i (% 52,3) kız, 169'u (% 47,7) erkektir ve yaşları 12 ve 14 (*M* = 13,29, *SD* =.78) arasında değişmektedir. Türk öğrenciler; Türkiye'nin güneyinde yer alan bir ilin merkezindeki yedi farklı ortaokulda öğrenim gören gönüllü öğrencilerden oluşmaktadır. Amerikalı öğrencilerden oluşan diğer çalışma grubu, Kaliforniya Berkeley Üniversitesinin öğrencilere yönelik düzenlediği yaz okuluna devam eden gönüllü öğrencilerden oluşmaktadır. Araştırmada 8-16 yaş aralığındaki çocuk ve ergenler için geliştirilen Çocuklar İçin Umut Ölçeği ve Çocuk Ergenler için Kısaltılmış-Çok Boyutlu Yaşam Doyumu ölçeğinin İngilizce ve Türkçe formları kullanılmıştır.

Çocuklar için Umut Ölçeği İngilizce Formu; Toplam altı maddeden oluşan ölçeğin yapı geçerliği doğrulayıcı faktör analizi ile test edilmiş ve 2 faktörlü (amaca güdülenme ve amaca ulaşma yolları) yapı doğrulanmıştır. Ölçeğin test tekrar test güvenirlik katsayısı .73 olarak bulunmuştur. Cronbach Alpha katsayısı ise .83 olarak hesaplanmıştır. Madde toplam korelasyon katsayıları ise .51 ve .69 arasında değişmektedir. Bu araştırma için hesaplanan Cronbach Alpha katsayısı .80'dir.

Çocuklar İçin Umut Ölçeği Türkçe Formu (ÇUÖ); Ölçeğin yapı geçerliğine ilişkin bulgular, orijinal çalışmadaki iki faktörlü yapıyı destekler niteliktedir. Faktör analizi sonucunda orijinal faktör yapısıyla uyumlu 2 faktör (amaca güdülenme ve amaca ulaşma yolları) elde edilmiştir. Amaca güdülenme boyutu varyansın yaklaşık olarak %44'ünü açıklarken, amaca ulaşma yolları boyutu varyansın %14'ünü açıklamıştır. İki faktörlü yapı toplam varyansın yaklaşık %58'ini açıklamıştır. ÇUÖ puanları ile Rosenberg Benlik Saygısı Ölçeği puanları arasında pozitif ve anlamlı bir ilişki

bulunmuştur. ÇUÖ'nün tüm ölçek için Cronbach alfa iç-tutarlık katsayısı .74 olarak bulunurken, test-tekrar test korelasyon katsayısı .57'dir. Bu araştırma için hesaplanan Cronbach Alpha katsayısı ise.78'dir.

Kısaltılmış-Çok Boyutlu Yaşam Doyumu İngilizce Formu (BMSLSS); ölçek her bir madde yaşam doyumunun (aile, okul, arkadaş, kendi ve çevre) beş farklı boyutunu ölçen beş maddeden oluşmaktadır. Ölçeğin Cronbach alfa iç-tutarlık katsayısı .85'dir. Açıklayıcı faktör analizine göre, tüm maddeler varyansın % 50'sini açıklamaktadır ve madde yükleri .65 ile .73 arasında değişmektedir. Bu araştırmada hesaplanan Cronbach Alpha katsayısı .82'dir.

Kısaltılmış-Çok Boyutlu Yaşam Doyumu Türkçe Formu; Ölçeğin test-tekrar test güvenirlik katsayısı.83, Cronbach Alpha katsayısı ise.89'dur. Madde toplam korelasyon katsayıları .64 - .78 arasında değişmektedir. Açıklayıcı faktör analizine göre, tüm maddeler varyansın % 48'ini açıklamaktadır ve madde yükleri .49 ile .82 arasında değişmektedir. Bu araştırmada hesaplanan Cronbach Alpha katsayısı .81'dir.

Araştırmanın Bulguları: Araştırmada, Türk ve Amerikalı ortaokul öğrencilerinin yaşam doyum düzeyleri arasında Türk öğrenciler lehine anlamlı bir fark bulunmuşken, umut düzeyleri arasında anlamlı bir fark bulunmamıştır. Bir diğer bulguya göre, Türk öğrencilerin sosyo-ekonomik düzeylerine göre umut düzeyleri arasında anlamlı bir fark bulunmuştur. Farkın kaynağını bulmak için yapılan Bonferroni testine göre üst sosyo-ekonomik düzeydeki öğrencilerin umut düzeyleri puanları alt sosyoekonomik düzeydeki öğrencilerin puanlarından anlamlı olarak daha yüksektir. Amerikalı öğrencilerde; anne-baba tutumu hem umut hem de yaşam doyumu puanlarında anlamlı farklılığa yol açmıştır. Aynı şekilde ana-baba tutumu* SED etkileşimi hem umut hem de yaşam doyumu puanlarında anlamlı farklılığa yol açmıştır. Bonferroni testi sonuçlarına göre, demokratik anne-baba tutumuna sahip öğrencilerin umut ve yaşam doyumu puanları otoriter ve koruyucu ana-baba tutumuna sahip öğrencilerin puanlarından anlamlı olarak daha yüksektir.

Araştırmanın Sonuçları ve Öneriler: Araştırmada, Türk ve Amerikalı öğrencilerin umut düzeyleri arasında fark bulunmazken, Türk öğrencilerin yaşam doyumlarının Amerikalı öğrencilerden daha yüksek olduğu bulunmuştur. Umut düzeyleri arasında fark çıkmaması ergenlik sorunlarının evrensel olması ve hangi kültürde olursa olsun, akademik başarının önemsendiği, akademik yaşamın yoğun olduğu bir dönemde olmaları ile açıklanabilir. Umut düzeyi ile fiziksel iyilik hali arasında pozitif ilişki vardır. Ergenlik döneminde hangi kültürde olursa olsun hızlı bedensel değişim, gelişim ve değişime uyum sağlamak gelişim görevidir. Türk ve Amerikalı öğrenciler, ön-ergenlik dönemindedirler. Her iki gruptaki öğrenciler de bu dönemdeki bedensel, psikolojik ve akademik sorunları yaşamaktadırlar. Umut ile akademik başarı/kaygı arasındaki ilişkiyi ortaya koyan araştırmalar elde edilen sonucu destekler niteliktedir. Bu nedenlerle, Türk ve Amerikalı öğrencilerin umut düzeyleri benzerlik göstermiş olabilir. Türk öğrencilerin yaşam doyumu düzeylerinin Amerikalı öğrencilerden yüksek çıkması kültürel ve çevresel faktörlerle açıklanabilir. Ergenlik içinde yaşam doyumu; beden imgesi ve pozitif benlik algısı değerlendirmeleri gibi kişisel olduğu kadar çevresel faktörlerden de etkilenir. Bu çevresel faktörler kültürden kültüre

değişir. Literatürde, yakın ilişkilerin ve kültürün yaşam doyumunu açıklamada daha fazla etkiye sahip olduğunu belirtilmektedir. Aile ve çevreyle ilişkiler bireyin yaşam doyumunu etkileyebilmektedir Toplulukçu toplumlarda kişilerarası ilişkiler daha yakın ve destekleyicidir. Bu nedenle Türk öğrencilerin yaşam doyumları Amerikalı öğrencilerin yaşam doyumlarından daha yüksek çıkmış olabilir. Umut düzeyinin Türk ve Amerikalı ergenlerde farklılaşmaması, ergenlik dönemi özelliklerinin kültürel etkilerden daha baskın olduğu şeklinde yorumlanabilir. Son olarak, araştırma bulgularından yola çıkarak, ergenlerin umut düzeylerini artırmaya yönelik kültürden bağımsız temel ve ikincil önleme çalışmaları planlanabilir. Ayrıca, anne-babalık davranışlarının çocuk/ergenlerin üzerindeki önemini ve olası sonuçlarını vurgulamak amacıyla ebeveynlere yönelik seminer ve eğitimlerin verilmesi önerilmektedir. Her çalışmada olduğu gibi bu araştırmanın da sınırlılıkları vardır. En önemli sınırlılık, araştırmada ele alınan ana-baba tutumunun ergenlerin algılarına dayalı olarak belirlenmiş olmasıdır. Benzer çalışmalarda ana-baba tutumunun bir ölçekle belirlenmesi önerilmektedir.

Anahtar sözcükler: Ergenler, sosyo- ekonomik düzey, kültür, cinsiyet, ana-baba tutumu

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Evaluation of Burnout Levels in Teachers regarding Socio-Demographic Variables, Job Satisfaction and General Self-Efficacy*

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A R T I C L E I N F O	A B S T R A C T
	Purpose: This study aims to examine the occupational burnout levels of teachers working in special education and rehabilitation centers affiliated with the Ministry of National Education regarding socio-demographic variables, job satisfaction, and general self-efficacy levels. **Research Methods:** The descriptive method and relational scanning model were used in the study. The research group consists of 297 females and 155 males. This total of 452 teachers participated in the Special Education Specialist Training Course in Aydın/Kuşadası, Mersin, and Erzurum provinces between 04/20/2015 and 07/10/2015 for participants in different cities of Turkey. A Personal Information Form created by the researchers, along with the Burnout Scale-Short Form (BS-SF), Minnesota Job

Satisfaction Scale, and General Competence Belief Scale (GCBS) were used in the research. In the analysis of the data, t-test, One-Way Analysis of Variance (ANOVA), Pearson correlation coefficient, and multiple regression analysis were used. **Findings:** As a result of the analysis, significant negative correlations were found between teachers' occupational burnout levels and levels of job satisfaction and general competence beliefs. Also, job satisfaction and general competence belief levels together were a significant precursor of occupational burnout levels.

Implications for Research and Practice: The work environment of special education teachers should be improved, and they should be provided social opportunities. The emphasis should be on family education studies. The burden of special education teachers should be reduced by providing the necessary counseling and guidance services for families parenting children with disabilities.

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Introduction

The burnout concept was first voiced by Freudenberger (1974) as a phenomenon of physical, emotional, and mental exhaustion accompanied by underachievement, depersonalization, and apathy at work. In particular, burnout is more common in occupations that require face-to-face communication and intense interaction (Cokluk, 2003). Researchers have tried to identify causes of individual and organizational burnout in research directed towards teachers in this context (Colak, 2017; Emery & Vandenberg, 2010; Fernet et al., 2012; Girgin & Baysal, 2005; Kapar, 2016). Individual causes of burnout include age, educational level, personality and emotional characteristics, expectations, values, goals, motivation, professional experience, marital status and number of children, family characteristics, and living conditions (Gozum, 1996). These factors affect individuals in different ways.

Research examining burnout in teachers who work with disabled people has spread in recent years (Akinci, 2016; Aksoy, 2007; Arslan & Aslan, 2014; Aydemir, 2013; Girgin & Baysal, 2005; Mistan, 2017; Oruc, 2007; Ozcan, 2016; Sahin & Sahin, 2012; Tuncbilek, 2016; Yuksel, 2009). Demographic variables such as age, gender, and marital status related to burnout have been examined in most of this research. In the research findings, no significant difference was found in terms of burnout variables such as gender (Arslan & Aslan, 2014; Cabuk, 2015; Sucuoglu & Kuloglu, 1996; Sahin & Sahin, 2012), marital status (Arslan & Aslan, 2014; Cabuk, 2015; Kaybasi, 2008; Oruc, 2007; Sahin & Sahin, 2012), whether or not receiving support from colleagues (Celik, 2016; Cabuk, 2015), age and duration of duty (Aydemir, 2013; Cam, 1989; Cabuk, 2015; Sucuoglu & Kuloglu, 1996; Tumkaya, 1996; Tuncbilek, 2016), or recognition by managers (Aksoy, 2007; Cam, 1989; Cabuk, 2015). A negative relationship was found between manager support and burnout levels.

On the other hand, job satisfaction, expressed as an emotional reaction to work experiences, arises from employee attitudes about their work (Avsaroglu, Deniz, & Kahraman, 2005). Individuals lose their initial organizational loyalty and working qualifications by being unable to cope with stressful situations brought about by business life, and they become uninterested in their jobs. For personal and organizational reasons, employees experience dissatisfaction with work first and then experience burnout (Otacioglu, 2008). The literature shows that research on the relationship between occupational burnout and job satisfaction has begun with teachers in recent years (Ari, 2015; Erturk & Kececioglu, 2012; Filiz, 2014; Gunduz, Capri, & Gokcakan, 2013; Kinman, Wray & Strange, 2011; Sagir et al., 2014). However, there are only a few studies on occupational burnout and job satisfaction among teachers working in special education and rehabilitation (Ciftci, 2015; Mistan, 2017; Tarakci, Tutuncuoglu & Tarakci, 2012; Yalcin & Bek, 2010).

Similarly, studies of occupational burnout and teachers' competence beliefs, one of the most important concepts of social learning theory, and are done mostly on specific beliefs rather than general competence beliefs (Evers, Brouwers & Tomic, 2002; Friedman, 2003). At this point, it stands out that new research is needed to reveal the relationship between general competence beliefs and teachers' professional burnout of

teachers, including special education teachers. The teaching profession, which has a with high-stress level, becomes even more stressful when it comes to educating children with disabilities. Based on these students' characteristics and the intensity of direct contact with the students, special education teachers are more likely to experience burnout than the other teachers. The burnout level of the teachers working in private institutions is higher than those who work in state institutions (Akinci, 2016, Girgin & Baysal, 2005; Weiskopf, 1980).

Burnout is an important issue in the special education field. Difficulties in controlling these students' behavior and the students being difficult and tiring to teach are risk factors for burnout in special education teachers (Sucuoglu & Kuloglu, 1996). Most of the teachers in special education and rehabilitation centers in Turkey are graduates from fields other than special education. This situation can become exhausting for teachers who are working out of their fields of education. Thus, these teachers are included in the burnout risk group due to occupational responsibilities and applications that require special knowledge and skills.

Problems that arise as a result of teacher burnout can negatively impact both the individual and the education and training services. Identifying burnout levels of participants regarding socio-demographic variables, job satisfaction, and general competence beliefs can contribute to examining the variables causing burnout, determining future practices to be carried out for teachers to prevent burnout, improving socioeconomic conditions and environment where teachers provide services. This could lead to new studies on the subject.

In light of the above information, the general aim of this study is to examine the occupational burnout levels of teachers working in special education and rehabilitation centers affiliated with the Ministry of National Education regarding socio-demographic variables, job satisfaction, and general competence belief scores. Answers are sought for the below questions:

1- Do the occupational burnout scores of teachers in special education and rehabilitation centers differ according to their gender, age, marital status, branch, duration of duty, their perceived fitness for the job, whether they receive support from their colleagues, whether they are appreciated by their superiors, or their loyalty to the job?

2- Are job satisfaction and general competence belief scores predictors of burnout scores of teachers in special education and rehabilitation centers?

Method

Research Design

The relational scanning model with descriptive method was used in this study.

Research Sample

The research group consists of 297 females and 155 males, a total of 452 teachers who participated in the "Special Education Specialist Training Course" in Aydın/Kuşadası, Mersin, and Erzurum provinces between 04/20/2015 and 07/10/2015 for participants in different cities in Turkey. Thirty-three (7.5%) of the teachers are graduates of the department of child development and education; 257 (56.9%) are from the department of primary school teaching, and 161 (35.6%) are from the department of early childhood education. From the group, 166 (36.7%) teachers were age 20-29; 97 (21.5%) were age 30-39; 44 (9.7%) were age 40-49, and 145 (32.1%) were age 50 and older. Of the teachers, 243 (53.8%) were married, and 209 (46.2%) were single. 150 (33.2%) of them were in the teaching profession for five years or less; 95 (21.0%) for 6-10 years; 86 (19.0%) for 11-15 years, and 121 (26.8%) for 16 years or more.

Research Instruments and Procedures

Burnout Scale-Short Form (BS-SF). The Burnout Scale-Short Form was created by Pines (2005); validity and reliability studies of its Turkish version were done by Capri (2013). It consists of ten items and is a scale of seven grades (1=Never to 7=Always) to measure individuals' occupational burnout level. It was determined that the internal consistency coefficients of the scale calculated with data acquired from different groups of ethnic backgrounds, occupations, and students vary between .85 and .92.

Minnesota Job Satisfaction Scale. The Minnesota Job Satisfaction Scale, developed by Weiss, Dawis, England, and Lofquist (1967) and adapted to Turkish by Baycan (1985), is a 20-item, five-point Likert, where the five options range from "Never Satisfied" to "Very Satisfied" and measure the degree of satisfaction. The original reliability coefficient of the scale was .83, and the test-retest reliability of the scale was found to be .89 in many studies conducted abroad. The reliability study in Turkey was conducted by Baycan (1985), and the internal consistency coefficient was found to be .77.

General Competence Belief Scale (GCBS). The initial form was developed by Jerusalem and Schwarzer (1981) as 20 items and then reduced to a ten-item form by Jerusalem and Schwarzer (1992) and adapted to Turkish by Celikkaleli and Capri (2008). Items of the Likert type scale are scored between 1 and 4 in the original form. The lowest score in the scale is 10, and the highest score is 40. First, validity and reliability studies were conducted in three different cultures by Schwarzer and Schroder (1997), and the Cronbach Alpha reliability coefficients were calculated as .84, .81 and .91, respectively.

Personal Information Form. This form, which contains information related to the participants' gender and occupational variables, was prepared by the researchers.

After informing the participants about the purpose of the research and its voluntary basis, practices were conducted in the course environment of participants. In the implementation process, basic guidelines related to the implementation of the scales and the purpose of the research were explained normatively to all participants.

Data Analysis

The data obtained from the measuring instruments were transferred to the computer environment and made ready for corresponding statistical processing. SPSS 16.0 software package was used for statistical analysis of the data obtained from the study. The t-test was applied for binary comparisons, and one-way analysis of variance (ANOVA) was applied for multiple comparisons to determine whether teachers' professional burnout levels differed significantly regarding socio-demographic variables. The Scheffe test was applied as the post hoc test to determine the source of differentiation, while the eta-squared ($\eta2$) value was used to determine the effect size. Also, Pearson Correlation Coefficient was used to identify the relation between occupational burnout levels and levels of job satisfaction and general competence beliefs of teachers. Multiple regression analysis was used to address the contribution of job satisfaction and general competence belief scores in predicting the occupational burnout scores. The error margins in the analyses were assumed to be 0.01 and 0.05.

Results

Findings obtained from statistical analyses of data collected in the direction of the research purpose are presented in this section.

1- The occupational burnout levels of participants do not differ based on gender, age, marital status, branch, duty term, whether thinking themselves fit for the job, whether being supported by colleagues, being appreciated by superiors, and devotion to the job.

Findings on Gender

Findings of whether the occupational burnout levels of participants differ depending on their gender are shown in Table 1.

Table 1

The t-Test Results on Gender

Dependent Variable	Gender	n	$\overline{X}$	S	t	p	Significant Difference	η_2
Occupational Burnout	Female (F)	297	2.67	.93	.56	.579	-	-
	Male (M)	155	2.62	.94				

*p<.05

When Table 1 is examined, it is seen that the occupational burnout scores of the participants do not differ significantly according to gender (t (450) = .56, p>.05).

Findings on Age

Findings related to whether the occupational burnout levels of participants differ depending on their age are given in Table 2.

Table 2

One-Way Analysis of Variance (ANOVA) Test Results on Age

Dependent Variable	Age	n	$\overline{X}$	S	F	p	Significant Difference	η_2
Occupational Burnout	20-29	166	2.87	.96	6.28	.000*	20-29 > 40-49, 50+	.040
	30-39	97	2.66	.95				
	40-49	44	2.53	.85				
	50+	145	2.65	.93				

*p<.05

Table 2 shows that there is a statistically significant difference according to age in the average of the scores of occupational burnout (F (3-448) = 6.28, p <.05) of the participants. According to the results of the Scheffe test, which is applied as a post hoc test to investigate the source of this difference, the occupational burnout scores of those in the age range of 20-29 are significantly different and higher than those 40-49 and 50 or more in terms of ages of the participants. Also, the effect of the age variable on the average of occupational burnout (η2 = .040) scores was found to be at a minor level according to eta-squared variables. It can be said that 4% of the observed variance in occupational burnout scores depends on the age variable.

Findings on Marital Status

Findings related to whether the occupational burnout levels of participants differ depending on marital status are shown in Table 3.

Table 3

The t-Test Results of Marital Status

Dependent Variable	Marital Status	n	$\overline{X}$	S	t	p	Significant Difference	η_2
Occupational Burnout	Married	243	2.58	.60	1.56	.119	-	-
	Single	209	2.72	.63				

*p<.05

When Table 3 is examined, it is seen that the occupational burnout scores (t (450) = 1.56; p> .05) of participants do not differ significantly according to their marital status.

Findings on Branch

Findings related to whether the occupational burnout levels of participants differ depending on their branch are given in Table 4.

Table 4

The One-Way Analysis of Variance (ANOVA) Test Results on Branch

Dependent Variable	Branch	n	$\overline{X}$	S	F	p	Significant Difference	η_2
Occupational Burnout	Child Development	34	2.50	.80				
	Primary School Teaching	257	2.62	.91				
		161	2.72	.97	1.04	.354	-	-
	Preschool							

*p<.05

In Table 4, there is no statistically significant difference regarding the average of occupational burnout (F (2-449) = 1.04; p> .05) according to the branches of participants.

Findings on Duty Term

Findings related to whether the occupational burnout levels of participants differ depending on their duty term are shown in Table 5.

Table 5

The One-Way Analysis of Variance (ANOVA) Test Results on Duty Term

Dependent Variable	Duty Term (Years)	n	$\overline{X}$	S	F	p	Significant Difference	η_2
Occupational Burnout	1-5	150	2.80	.94			1-5,	
	6-10	95	2.71	.93			6-10	
	11-15	86	2.62	.97	3.73	.011*	>	.024
	16 and over	121	2.43	.85			16 and over	

*p<.05

According to Table 5, a significant difference can be seen statistically in the average of occupational burnout (F (3-448) = 3.73, p <.05) according to the duration of duty of the participants. According to the results of the Scheffe test, applied as a post hoc test to investigate the source of this difference, the occupational burnout scores of those who worked for 1-5 and 6-10 years were significantly different and higher than those who worked for 16 years and over participants. Also, the effect of the duty term variable on the average of occupational burnout ($\eta2$ = .024) scores was found to be at a small level; it can be said that 2.4% of the observed variance in occupational burnout scores depends on the duty term variable.

Findings on Fit for the Job

Findings related to whether the occupational burnout levels of participants differ depending on if they think themselves fit for the job are shown in Table 6.

Table 6

The One-Way Analysis of Variance (ANOVA) Test Results on Fit for the Job

Dependent Variable	Fit for the job	n	$\overline{\text{X}}$	S	F	p	Significant Difference	η_2
Occupational Burnout	Not Fit (NF)	23	2.44	1.03	9.02	.000*	PF > NF, F, GF	.056
	Partially Fit (PF)	107	3.01	1.06				
	Fit (F)	225	2.61	.87				
	Good Fit (GF)	97	2.38	.75				

*p<.05

Table 6 shows a statistically significant difference in the average of occupational burnout scores (F (3-448) = 9.02; p <.05) according to the variable of whether the participants think themselves fit for the job. According to the results of the Scheffe test, applied as post hoc test to investigate the source of this difference, the occupational burnout scores of those Partially Fit for the job (PF) are significantly different and higher than those of the Not Fit (NF), Fit (F), and Good Fit (GF) regarding the variable of whether participants think themselves fit for the job. Further, the effect of the variable on the average of occupational burnout ($\eta2$ = .056) scores was found to be at a minor level. It can be said that 5.6% of the observed variance in occupational burnout scores were related to the variable of whether teachers think themselves fit for the job.

Findings on Colleagues Support

Findings related to whether the occupational burnout levels of participants differ depending on colleagues' support are shown in Table 7.

Table 7

The One-Way Analysis of Variance (ANOVA) Test Results Colleagues Support

Dependent Variable	Colleagues' support	n	$\overline{X}$	S	F	p	Significant Difference	η_2
Occupational Burnout	Yes	237	2.57	.91				
	No	63	2.74	.96	6.79	.167	-	-
	Sometimes	152	2.73	.94				

*p<.05

In Table 7, there is no statistically significant difference in the average scores of occupational burnout (F (2-449) = 1.67; p> .05) according to the variable of colleagues' support of teachers working in special education and rehabilitation centers.

Findings on Superior Appreciation

Findings related to whether the occupational burnout levels of participants differ depending on being appreciated by superiors are given in Table 8.

Table 8

The One-Way Analysis of Variance (ANOVA) Test Results on Superior Appreciation

Dependent Variable	Superiors' appreciation	n	$\overline{X}$	S	F	p	Significant Difference	η_2
Occupational Burnout	Yes	225	2.40	.80				
	No	83	3.05	1.10	18.80	.000*	No, Sometimes > Yes	.077
	Sometimes	144	2.79	.89				

*p<.05

Table 8 shows that there is a statistically significant difference in the average of the scores of occupational burnout (F (2-449) = 18.80, p <.05) regarding superiors' appreciation of teachers who work in special education and rehabilitation centers. According to the results of the Scheffe test, applied as post hoc test to investigate the source of this difference, in terms of superiors' appreciation, the occupational burnout scores of teachers who are not appreciated by superiors and who are sometimes appreciated by superiors are significantly different from and higher than those who are appreciated by superiors. Additionally, the effect of the variable of appreciation by

superiors on the average of occupational burnout ($\eta2$ = .077) scores was found to be moderate according to the obtained eta-squared values, and it can be said that 7.7% of the variance observed in occupational burnout scores depends on the variable of appreciation by superiors.

Findings on Job Devotion

Findings related to whether the occupational burnout levels of participants differ depending on their devotion to the job are shown in Table 9.

Table 9

The One-Way Analysis of Variance (ANOVA) Test Results on Job Devotion

Dependent Variable	Devotion to job	n	$\overline{\text{X}}$	S	F	p	Significant Difference	η_2
Occupational Burnout	Devoted (D)	353	2.55	.87				
	PartiallyDevoted (PD)	62	2.95	.99	8.47	.000*	PD, ND > D	.036
	Not Devoted (ND)	37	3.04	1.14				

*p<.05

In Table 9, it is seen that there is a statistically significant difference in the average of scores of occupational burnout (F (2-449) = 8.47, p<.05) according to the teachers' devotion to the job. According to the results of the Scheffe test, applied as post hoc test to investigate the source of this difference, in terms of devotion to the job, the occupational burnout scores of teachers who are not devoted to the job and who are partially devoted to the job are significantly different from and higher than those who are devoted to the job. Additionally, the effect of the variable of devotion to the job on the average of occupational burnout ($\eta2$= .036) scores was at a minor level according to the obtained eta-squared values. It can be said that 3.6% of the variance observed in occupational burnout scores depends on the variable of devotion to the job.

2- Findings of whether job satisfaction and general competence belief levels are predictors of occupational burnout levels of participants.

Correlation analysis was performed to determine the relationship between occupational burnout scores and job satisfaction and general competence belief scores of participants. Then multiple regression analysis was applied to the data to examine the contribution of job satisfaction and general competence belief scores of participants in predicting their occupational burnout scores.

Table 10 shows the results of correlation analysis and the mean and standard deviation values associated with the relationship between the scores of job satisfaction and general competence beliefs and occupational burnout scores for participants.

Table 10

Results of Correlation Analysis Regarding the Relationship Between Job Satisfaction and General Competence Belief Scores and Occupational Burnout Scores

Variables	1	2	3	$\overline{X}$	S
1. Occupational Burnout	1			2.65	.93
2. Job Satisfaction	-.37**	1		29.73	4.96
3. General Competence Belief	-.26**	.27**	1	3.69	.58

**p<.01; *p<.05

When Table 10 is examined, significant negative correlations were found between occupational burnout scores and the scores of job satisfaction (r = -.37, p <.05) and general competence belief (r = -.26, p <.05) of the participants. However, positive correlations were found between job satisfaction and general competence belief scores of participants (r = .27; p <.05).

Based on these results, to examine the contribution of job satisfaction and general competence belief scores in predicting occupational burnout scores of the participants, job satisfaction and general competence belief scores were included in the multiple regression analysis, and the results are given in Table 11.

Table 11

Results of Multiple Regression Analysis Regarding the Relationship Between Job Satisfaction and General Competence Belief Scores and Occupational Burnout Scores

Variables	Occupational Burnout				
	B	SH	β	t	p
Constant	4.87	.26	-	18.51	0.00
Job Satisfaction	-.53	.07	-.33	-7.32	0.00
General Competence Belief	-.03	.01	-.17	-3.72	0.00

R= .41,　　　R²= .17

$F_{(2-449)}$= 44.43,　　p=0.00**

**p<.01

According to Table 11, job satisfaction and general competence belief scores of participants together have a significant negative correlation with the teachers' professional burnout scores (R = .41, R2 = .17, p <.01). Both job satisfaction and general competence belief scores of the participants were significantly predictive of occupational burnout scores. Also, job satisfaction and general competence belief scores together account for 17% of the variance for occupational burnout scores. Finally, according to the standardized regression coefficients (β), the order of importance of the predictors over the teachers' occupational burnout scores was determined as job satisfaction (-.33) and general competence belief (-.17).

According to the results obtained from the study, it was found that while there was no significant difference in the teachers' occupational burnout scores regarding the variables of gender [($t_{(450)}$= .56, p>.05)], marital status [($t_{(450)}$= 1.56; p>.05)], branch [($F_{(2-449)}$= 1.04; p>.05)], and colleagues' support [($F_{(2-449)}$= 1.67; p>.05)]. Also, there were significant differences in terms of age [($F_{(3-448)}$= 6.28, p<.05)], duty term [($F_{(3-448)}$= 3.73; p<.05)], fit for the job [($F_{(3-448)}$= 9.02; p<.05)], superiors' appreciation [($F_{(2-449)}$= 18.80, p<.05)] and devotion to the job [($F_{(2-449)}$= 8.47, p<.05)]. In addition, the effect of the variable of superiors' appreciation was moderate ($\eta2 = 0.08$), while the effect of other variables with significant difference was found to be small on the average of the teachers' burnout scores in terms of the eta-squared values obtained to determine the effect size. Significant negative correlations were found between occupational burnout scores and job satisfaction (r = -0.37; p <.01) and general competence belief scores (r = -0.26; p <.01); job satisfaction and general competence belief scores together (R = .041, R2 = 0.17, p <.01) are significant predictors of 17% of the variance for occupational burnout scores.

Discussion, Conclusion, and Recommendations

In the study, significant negative correlations were found between occupational burnout scores of teachers and job satisfaction and general competence beliefs scores, and it was found that job satisfaction and general competence belief scores together were significant predictors of occupational burnout scores. Also in this study, occupational burnout scores were examined regarding socio-demographic variables. There was no significant difference regarding the gender variable. Similar results have been obtained in some studies about the burnout of teachers (Arslan & Aslan, 2014; Cabuk, 2015, Sucuoglu & Kuloglu, 1996; Sahin & Sahin, 2012). Similar results were obtained in research on the academic staff of Surgevil (2005), doctors and nurses of Ozkan (2008), nurses of Sahin (2009), and primary school inspectors of Tanriverdi (2008). Although there is no significant difference in the research results, burnout scores of female teachers are higher than male teachers. The literature reports that more women experience emotional burnout (Cimen, 2007; Surgevil, 2005; Sahin, 2009). There are also other research findings that men experience burnout more than their female counterparts (Demirbas, 2006; Tumkaya, 1996). In studies conducted by Girgin and Baysal (2005) and Ciftci (2015) in private educational institutions, it was found that the burnout level of male teachers working in these institutions is higher than that

with female teachers. In the literature, it is seen that different results related to gender exist. In this study, it is thought that the indifference of burnout in male and female teachers is because special education services are carried out under equal conditions for male and female teachers, and male and female teachers are similarly affected by working conditions.

As a result of the analysis made to examine whether burnout levels of teachers were different according to marital status, it was found that marital status of the teachers is not a predictor of burnout. When the literature was examined, it was found that there was no significant difference between teachers' burnout scores regarding marital status in the researches performed by Oruc (2007), Kaybasi (2008), Sahin & Sahin (2012), Arslan & Aslan (2014) conducted. On the other hand, some research findings indicate that single teachers have higher burnout levels than do married teachers (Celik, 2016). The lack of a significant difference regarding the marital status of the teachers suggests that factors that cause burnout are similar for married and single teachers.

Significant differences were found between burnout scores according to age and duration of duty. There was a significant difference between the 20-29 age group and the 40-49 age group; burnout in the 20-29 age group was the maximum, and burnout in those 50 and above was the least. As teachers' duty term increases, the level of burnout decreases. The burnout level of teachers who have 1-5 years of job experience is the highest. This finding supports the study results of Cam (1989), Tumkaya (1996), Sucuoglu & Kuloglu (1996), Aydemir (2013), Cabuk (2015) and Tuncbilek (2016). As duty term and age of teachers in special education increases, they may feel that they have become more successful and competent, have more realistic expectations about the work, have gained experience, and feel more successful. When studies with age variable within the country are examined, different findings also exist in the literature. However, most research findings indicate that the level of burnout decreases as age increases. Burnout decreases when age increases as found in surveys conducted on health care workers (Aslan, 1997; Cam, 1989), special education teachers (Sucuoglu & Kuloglu, 1996), school administrators (Izgar, 2001), police officers (Sanli, 2006), and teachers (Cimen, 2007). However, in some studies, no relationship was found between age and burnout (Surgevil, 2005; Tanriverdi, 2008). Similarly, there was no difference between the burnout levels of teachers regarding age and years of work in a study conducted on special education teachers (Sahin & Sahin, 2012). Increased professional experience with age, learning more skills to cope with burnout (Sahin, 2009), increased competence through professional experience are reasons the level of burnout decreases as age increases. Work experience, seniority, becoming more resistant to burnout, gaining a footing, and learning ways to cope with difficulties are effective for burnout (Aslan, 1997). The possibility of burnout decreases with increased professional experience. The fact that younger teachers are exhausted can be explained by the fact that younger teachers are more stressed (Forlin, 2001), lack work experience, are unable to make independent decisions, are idealists, and have difficulties managing the students' behavior. It is thought that the average burnout of teachers in the 20-29 age group in the study is high; most teachers at this age are

married and have children, so the excess work and household burdens may affect their burnout level.

Due to the low number of special education programs in universities and special education graduate teachers, individuals with degrees in different fields can work in special education and rehabilitation centers by participating in short-term in-service courses. There was no significant difference in the burnout scores of graduates of child development, primary school teaching, and preschool teaching departments in the study. Since most of the teachers who graduated from different fields are not assigned to state institutions, they may be forced to work in this area; they may have low expectations because their goal was to be assigned to state institutions. Burnout is related to expectations, and the low expectations of teachers who graduated from different areas may have caused burnout. The research results are similar to the results of the research of Sucuoglu & Kuloglu (1996), Aksoy (2007), and Kaybasi (2008).

There was no significant difference between the level of burnout among the participants and the variable of having support from colleagues. This finding supports the results of surveys conducted by Quick (2015) and Steel (2016). Strasmeier (1992) explained that teachers' lack of support from colleagues increased burnout. Peer support is an essential element regarding burnout and has a protective effect. The lack of a significant difference in the research can be explained by the fact that teachers working in special education and rehabilitation centers provide individual education to students and communicate with students and parents rather than colleagues.

Superiors' appreciation is one of the factors related to the work environment. The burnout levels of teachers who are never appreciated by superiors have been higher than teachers who have been appreciated or sometimes appreciated; results are significant. Aksoy (2007), Cam (1989), and Cabuk (2015) found that there was a negative relationship between managerial support and burnout scores. It can be said that teachers who are appreciated by administrators decrease their burnout through improved motivation, commitment to work, and sense of belonging.

Significant differences were found when the burnout scores were examined according to whether the participants think their professions are suitable for them. Burnout scores of those who find their profession unsuitable are higher than those of teachers who find the teaching profession fits. The results obtained support research on this topic (Aksoy, 2007; Cabuk, 2015; Oruc, 2007). The high burnout scores of teachers who do not find their profession suitable for them can be attributed to their working in a different field from their undergraduate program.

The fact that teachers are working in a different field from their original field of study affects their commitment to work. There is a significant difference between devotion to job and burnout scores. It can be said that teachers working in a different field and the difficulties of special education have negative impacts on teachers' devotion to the job. Therefore, their burnout levels increase.

Regarding the results obtained from the study, there was no significant difference in the teachers' occupational burnout scores regarding marital status, gender, branch,

and colleagues' support variables. There were significant differences regarding age, duty period, suitable for the job, appreciation by superiors and devotion to the job. Significant negative correlations were found between teachers' occupational burnout scores and job satisfaction and general competence beliefs scores. Job satisfaction and general competence belief scores together were significantly predictive of occupational burnout scores.

Teachers should be informed about burnout syndrome. Especially, precautions should be taken to increase the positive feelings of teachers who have experienced professional burnout. Organizing in-service training, courses, and seminars which will contribute to professional development of teachers in the field of special education will also be helpful for burnout. The working environment of teachers working in the area of special education should be improved, and they should be provided social opportunities. The emphasis should be on family education studies. The burden of special education teachers should be reduced by providing the necessary counseling and guidance services for families parenting children with disabilities. The need for trained personnel in the area of special education should be satisfied. As a result, the number of special education departments in universities must be increased, and these departments should provide graduates in a number that meets their needs. It is thought that assessing burnout with some variables such as life satisfaction, marital adjustment, loading patterns, stress, problem-solving, self-efficacy would be useful in new research on participants.

References

Akinci, M. (2016). *Özel eğitim kurumlarında (rehabilitasyon) ve devlet okullarında calışan öğretmenlerin tükenmişlik düzeyleri [The level of burnout of teachers who work in private schools (rehabilitation) and public schools].* (Master dissertation). Beykent Üniversitesi, Sosyal Bilimler Enstitüsü, İstanbul.

Aksoy, S. U. (2007). *Eskişehir ili özel eğitim kurumlarında çalışan öğretmenlerin tükenmişlik düzeylerinin değerlendirilmesi* [*An assessment on the level of burnout of teachers who work in private institutions in Eskişehir province].* (Master dissertation). Osmangazi Üniversitesi, Sağlık Bilimleri Enstitüsü, Eskişehir.

Ari, E. (2015). Öğretmenlerin iş doyumlarının mesleki tükenmişlik üzerine etkisinin yapısal eşitlik modeli ile araştırılması [Examination on the influence of Job Satisfaction of Teachers on Occupational Burnout by Structural Equation Modeling]. *The Journal of International Social Research*, 8(39), 549-565.

Arslan, G. & Aslan, G. (2014). Zihin engelli bireylere eğitim veren öğretmenlerin tükenmişlik düzeylerinin İncelenmesi (Tokat İli Örneği). [Examination of the burnout levels of teachers who give education for mentally handicapped individuals (Tokat Province Sample)]. *Eğitim Bilimleri Araştırmaları Dergisi*, 4(2), 49-66.

Aslan, H. (1997). Kocaeli'nde bir grup sağlık çalışanında işe bağlı gerginlik, tükenme ve iş doyumu [Tension, exhaustion and job satisfaction of healthcare professionals in Kocaeli]. *Toplum ve Hekim,*12(82), 24-29.

Avsaroglu, S., Deniz, M. E. & Kahraman, A. (2005). Teknik öğretmenlerde yaşam doyumu iş doyumu ve mesleki tükenmişlik düzeylerinin incelenmesi [Examination of Satisfaction with life, job satisfaction and occupational burnout levels of technical teacher]. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,* 14, 115-129.

Aydemir, H. (2013). *Özel eğitim alanında çalışan öğretmenlerin tükenmişlik düzeyleri ve yaşam doyumlarının incelenmesi* [*Analysis on the burnout levels and life satisfaction of teachers working in special education].* (Master dissertation). Abant İzzet Baysal Üniversitesi, Eğitim Bilimleri Enstitüsü, Bolu.

Cabuk, A. (2015). *Özel eğitim alanında çalışan öğretmenlerin tükenmişlik düzeylerinin bazı değişkenler açısından incelenmesi* [*Evaluation on the burnout levels of teachers working in private education institutions in terms of certain variables].*   (Master dissertation). Beykent Üniversitesi, Sosyal Bilimler Enstitüsü, İstanbul.

Cam, O. (1989). *Hemşirelerde tükenmişlik ve çeşitli değişkenlere göre incelenmesi* [*Burnout in nurses and its evaluation according to different variables].* (Doctoral dissertation). Ege Üniversitesi, Sağlık Bilimleri Enstitüsü, İzmir.

Capri, B. (2006). Tükenmişlik ölçeği'nin Türkçe uyarlama geçerlik ve güvenirlik çalışması [A study on validness and reliability of burnout scale adapted in Turkish]. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 2(1), 62-77.

Celik, F. (2016). *Özel eğitim alanında çalışan öğretmenlerde tükenmişlik: Adıyaman ili örneği* [*Burnout in teachers who work in private education institutions: Adıyaman Province Sample].* (Master dissertation). Türk Hava Kurumu Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara.

Celikkaleli, O. & Capri, B. (2008). Genel yetkinlik inancı ölçeğinin Türkçe formunun geçerlilik ve güvenirlik çalışmaları [A study on validness and reliability of general competency scale adapted in Turkish]. Ç*ukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,* 17(3), 93–104.

Ciftci, H. D. (2015). Özel eğitim merkezlerinde çalışan öğretmenlerin mesleki yetkinlik ve tükenmişlik düzeyleri arasındaki ilişkinin belirlenmesi [Determination on the relationship between professional competence and burnout levels of teachers working in private education centers]. *Mediterranean Journal of Humanities*, 5(1), 221-241.

Cimen, S. (2007). *İlköğretim öğretmenlerinin tükenmişlik yaşantıları ve yeterlik algıları*[*Burnout experiences and competency perception of primary school teachers].* (Master dissertation). Kocaeli Üniversitesi, Sosyal Bilimler Enstitüsü, Kocaeli.

Cokluk, O. (2003). Örgütlerde tükenmişlik. Elma, C. & Demir, K. (Ed.), *Yönetimde Çağdaş Yaklasımlar. (2th ed.)* [Burnout in Organizations. Elma, C. & Demir, K.

(Ed.), *Contemporary Approaches in Management. (2th ed.])*. Ankara: Anı Yayıncılık.

Colak, Y. (2017). *İlkokul ve ortaokullarda görev yapan yönetici ve öğretmenlerin tükenmişlik düzeylerinin incelenmesi [Analysis on the burnout levels of managers and teachers working in primary and secondary schools].* (Master dissertation). Gaziantep Üniversitesi, Eğitim Bilimleri Enstitüsü, Gaziantep.

Demirbas, A. R. (2006). Üç *farklı hastanenin yöneticilerinin ve klinikte çalışan sağlık personelinin tükenmişlik durumları* [*Burnout states of managers working at different hospitals and healthcare personels working at clinics].* (Master dissertation). Ankara Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara.

Emery, D. W. &Vandenberg, B. (2010). Special education teacher burnout and Act. *International Journal Of Special Education,* 25(3), 119-131.

Erturk, E. & Kececioglu, T. (2012). Çalışanların iş doyumları ile mesleki tükenmişlik düzeyleri arasındaki ilişkiler: Öğretmenler üzerine bir uygulama [Relationship between job satisfaction and occupational burnout levels of workers: A practice on teachers]. *Ege Akademik Bakış*, 12(1), 39-52.

Evers, W., Brouwers, A. & Tomic, W. (2001). Burnout and self-efficacy: A study on teachers' belief when implementing an innovative educational system in the netherland. *British Journal of Educational Psychology,* 72, 227-243.

Fernet, C., Guay, F., Snecal, C. & Austin, S. (2012). Predicting ıntraindividual changes ın teacher burnout: The role of perceived school environment and motivational factors. *Teaching and Teacher Education,* 28, 514-525.

Filiz, Z. (2014). Öğretmenlerin iş doyumu ve tükenmişlik düzeylerinin incelenmesi [Examination on job satisfaction and the burnout level of teachers]. *Uluslararası Yönetim İktisat ve İşletme Dergisi,* 10(23), 157- 171

Forlin, C. (2001). Inclusion: İdentifying potential stressors for regular class teachers. *Educational Research*, 43(3), 235–245.

Girgin, G. & Baysal, A. (2005). Tükenmişlik sendromuna bir örnek: Zihinsel engelli öğrencilere eğitim veren öğretmenlerin mesleki tükenmişlik düzeyi [An example of burnout syndrome: Occupational burnout of teachers who give education for mentally handicapped students]. *TSK Koruyucu Hekimlik Bulteni*, 4(4), 172-187.

Gozum, S. (1996). K*oruyucu sağlık hizmetlerinde görev yapan hemşire ve ebelerde iş doyum, tükenmişlik ve işe devamsızlığı etkileyen faktörlerin araştırılması [Research on the factors affecting job satisfaction, burnout and absenteeism of nurses and midwifes working at preventive health services]. (*Unpublished doctoral dissertation). Atatürk Üniversitesi, Sağlık Bilimleri Enstitüsü, Erzurum.

Gunduz, B., Capri, B. & Gokcakan, Z. (2013). Mesleki tükenmişlik, işle bütünleşme ve iş doyumu arasındaki ilişkilerin incelenmesi [Analysis on the relationship between occupational burnout, combination with work and job satisfaction].

Eğitim Bilimleri Araştırmaları Dergisi, 3(1), 29-49.

İzgar, H. (2001). *Okul yöneticilerinde tükenmişlik [Burnout in School Administrators]* Ankara: Nobel Yayınları.

Kapar, G. (2016). *Lise öğretmenlerinin mesleki tükenmişlik ve iş doyumu düzeyleri üzerine bir çözümleme: Van örneği* [*An analysis on the occupational burnout and job satisfaction level of high school teachers: Van Sample].* (Master dissertation). Yüzüncü Yıl Üniversitesi, Sosyal Bilimler Enstitüsü, Van.

Kaybasi, Y. (2008). Bazı değişkenler açısından öğretmenlerin mesleki tükenmişlik düzeyleri [The occupational burnout levels of teachers in terms of certain variables]. S*osyal Bilimler Dergisi*, 20, 191-212.

Kinman, G., Wray, S. & Strange, C. (2011). Emotional labour, burnout and job satisfaction in teachers: The role of workplace social support. *International Journal of Experimental Educational Psychology,* 31(7), 843-856.

Mistan, B. (2017). *Özel eğitim kurumlarında çalışan öğretmenlerin iş doyumu ve mesleki tükenmişlik düzeylerinin bazı değişkenler açısından incelenmesi [Evaluation on the job satisfaction and occupational burnout level of teachers working in private education institutions in terms of certain variables].* (Master dissertation). Necmettin Erbakan Üniversitesi, Eğitim Bilimleri Enstitüsü, Konya.

Oruc, S. (2007). *Özel eğitim alanında çalışan öğretmenlerin tükenmişlik düzeylerinin bazı değişkenler açısından incelenmesi: Adana ili örneği* [*Evaluation on the burnout levels of teachers working in private education institutions in terms of certain variables: Adana Province Sample].* (Master dissertation). Çukurova Üniversitesi, Sosyal Bilimler Enstitüsü, Adana.

Otacioglu, S. G. (2008). Müzik öğretmenlerinde tükenmişlik sendromu ve etkileyen faktörler [Burnout syndrome in music teachers and its influencing factor]. *İnönü Üniversitesi, Eğitim Fakültesi Dergisi*, 9(15), 103-116.

Ozcan, E. (2016). *Özel eğitim okulunda görev yapan öğretmenlerin tükenmişlik düzeylerinin karşılaştırılması* [*Comparison on the burnout level of teachers working in private schools].* (Master dissertation). Ufuk Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara.

Ozkan, S. (2008). *Rol çatışması ve rol belirsizliğinin hekim ve hemşirelerin tükenmişlik düzeyleri üzerine olan etkileri* [*The effects of role conflict and role ambiguity on the burnout levels of medical doctors and nurses].* (Master dissertation). Hacettepe Üniversitesi, Sağlık Bilimleri Enstitüsü, Ankara.

Sagir, M., Ercan, O., Duman, A. & Bilen, K. (2014). Matematik öğretmenlerinin mesleki tükenmişlik ve iş tatmin düzeyleri arasındaki ilişki [Relationship between the occupational burnout and job satisfaction level of math teachers].

Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 11(27), 277-294.

Strassmeier, W. (1992). Stres amongst teachers of children with mental handicaps. *International Journal of Rehabilitation Research,* 15, 235–239.

Sucuoglu, B. & Kuloglu, N. (1996). Özürlü çocuklarla çalışan öğretmenlerde tükenmişliğin değerlendirilmesi [Evaluation on the burnout level of teachers who work with disabled children]. Tü*rk Psikoloji Dergisi,* 10(36), 44-60.

Surgevil, O. (2005). *Tükenmişlik ve tükenmişliği etkileyen örgütsel faktörler: Akademik personel üzerinde bir uygulama* [*Burnout and organizational factors that affect burnout].* (Master dissertation). Dokuz Eylül Üniversitesi, Sosyal Bilimler Enstitüsü, İzmir.

Sahin, D. (2009). *Ankara Keçiören Eğitim ve Araştırma Hastanesi hemşirelerinin rol çatışması-rol belirsizliği ve tükenmişlik durumları* [*Role conflict-role ambiguity and burnout states of nurses in Keçiören Ankara Training and Research Hospital].* (Master dissertation). Ankara Üniversitesi, Sağlık Bilimleri Enstitüsü, Ankara.

Sanli, S. (2006). *Adana ilinde çalışan polislerin iş doyumu ve tükenmişlik düzeylerinin bazı değişkenler açısından incelenmesi* [*Evaluation on the job satisfaction and burnout levels of policemen working in Adana province in terms of certain variables].* (Master dissertation). Çukurova Üniversitesi, Sosyal Bilimler Enstitüsü, Adana.

Tanrıverdi, L. (2008). *İlköğretim müfettişlerinin iş tatmini ile tükenmişlik düzeylerinin incelenmesi* [*Analysis on job satisfaction and the burnout level of primary school inspectors].* (Master dissertation). Yeditepe Üniversitesi, Sosyal Bilimler Enstitüsü, İstanbul.

Tarakci, E., Tutuncuoglu, F. & Tarakci, D. (2012). Özel eğitim ve rehabilitasyon alanında çalışan meslek elemanlarının öz-yeterlilik ve tükenmişlik düzeylerinin incelenmesi [Examination of Self-Sufficiency and burnout level of members of profession working in private education and rehabilitation sector]. *Fizyoterapi Rehabilitasyon,* 23(1), 26-35.

Tumkaya, S. (1996). Öğ*retmenlerdeki tükenmişlik görülen psikolojik belirtiler ve başa çıkma davranışları* [*Psychological signs and dealing ways for burnout in teachers].* (Doctoral dissertation). Çukurova Üniversitesi, Sosyal Bilimler Enstitüsü, Adana.

Tuncbilek, S. (2016). *Özel eğitim okul öğretmenlerinin mesleki tükenmişlik duygusu ve iş tatminleri arasındaki ilişki: Ankara ili örneği* [*Relationship between the feeling of occupational burnout and job satisfaction of teachers working at private schools: Adana province sample].* (Master dissertation). Dumlupınar Üniversitesi, Sosyal Bilimler Enstitüsü, Kütahya.

Weiskopf, P. E. (1980). Burnout among teachers of exceptional children. *Exceptional Children*, 47(1), 18-23.

Yalcın, B. S. & Bek, H. (2010). Özel eğitim ve rehabilitasyon merkezlerinde çalışan eğitimcilerin mesleki yeterlilik algısı ile iş doyumlarının incelenmesi [Analysis on the professional competency perception and job satisfaction of educators

working at private education and rehabilitation centers]. *Uluslararası Tarih ve Sosyal Araştırmalar Dergisi,* 3, 55-70.

Öğretmenlerin Mesleki Tükenmişliklerinin Sosyo-Demografik Değişkenler ile İş Doyumu ve Genel Yetkinlik İnancı Açısından İncelenmesi

Özet

Problem Durumu: Meslek yaşamı insan yaşamının önemli ve vazgeçilmez bir alanıdır. İnsanlarla yüz yüze iletişimin yoğun olduğu alanlarda çalışanlarında yoğun duygusal tepkiler gözlenmektedir. Çalışanlar, çalışma koşulları ve örgütsel yapı nedeniyle yüksek düzeyde stresle karşı karşıya kalabilmekte ve uzun süreli stres tükenmişliğe dönüşebilmektedir. Eğitim ve hizmet sektörü çalışanları daha fazla tükenmişlik yaşamaktadır. Stres düzeyi yüksek meslekler arasında yer alan öğretmenlik mesleği, engelli çocukların eğitimi söz konusu olduğunda daha da stresli hale gelmektedir. Özel eğitimde doğrudan temasın yoğunluğu, çocukların özellikleri, gereksinimleri, bu çocukların davranışlarını kontrol etmede güçlükler yaşanması ve öğretimin zor ve yorucu olması tükenmişlik açısından özel eğitim öğretmenleri için risk faktörleri olarak değerlendirilmektedir. Özel eğitim ve rehabilitasyon merkezlerinde çalışan öğretmenlerin çoğu, özel eğitim alanı dışında farklı alanlardan mezun öğretmenlerdir. Bu durum, öğretmenlerin lisans eğitimini almadıkları bir alanda ve farklı özellikteki çocuklarla çalışmak durumunda kalmaları ve beklenti ve mesleki rolleri öğretmenler için yıpratıcı ve yorucu olabilmektedir. Özel eğitim ve rehabilitasyon merkezinde çalışan öğretmenler, mesleğin gerektirdiği sorumluluklar ve özel bilgi ve beceri gerektiren uygulamaları nedeniyle tükenmişlik riski taşıyan grupta yer almaktadırlar. Öğretmen tükenmişliğinin sonucunda oluşan sorunlar, hem bireyi hem de eğitim ve öğretim hizmetlerini olumsuz etkileyebilmektedir. Özel eğitim ve rehabilitasyon merkezlerinde çalışan öğretmenlerin sosyo-demografik değişkenler ile iş doyumu ve genel yetkinlik inancı açısından tükenmişlik düzeylerinin belirlenmesi, tükenmişliğe neden olan değişkenlerin incelenmesine, konuya ilişkin önlemler alınmasına, tükenmişlik konusunda öğretmenlere yönelik yapılacak çalışmaların belirlenmesine, öğretmenlerin hizmet sundukları ortamlar ve sosyo-ekonomik koşulların iyileştirilmesine, konu ile ilgili yeni çalışmaların yapılmasına katkılar sunabileceği düşünülmektedir. Bu çalışmanın genel amacı, Milli Eğitim Bakanlığı'na bağlı özel eğitim ve rehabilitasyon merkezlerinde çalışan öğretmenlerin mesleki tükenmişlik

puanlarının sosyo-demografik değişkenler ile iş doyumu ve genel yetkinlik inancı puanları açısından incelenmesidir.

Araştırmanın Yöntemi: Bu çalışmada betimsel yöntemle yapılmış ilişkisel tarama modeli kullanılmıştır. Araştırma grubu, Milli Eğitim Bakanlığı tarafından Özel eğitim ve rehabilitasyon merkezinde görevli öğretmenlere yönelik Aydın/Kuşadası, Mersin ve Erzurum illerinde açılan "Özel Eğitim Alanında Destek Verecek Uzman Öğretici Yetiştirme Kursu"na Türkiye'nin farklı illerinden katılan 297 kadın 155 erkek olmak üzere toplam 452 öğretmenden oluşmaktadır. Araştırmada, Tükenmişlik Ölçeği Kısa Formu, Minnesota İş Doyum Ölçeği, Genel Yetkinlik İnancı Ölçeği ve kişisel bilgi formu kullanılmıştır. Uygulamalar; katılımcıların kurs ortamlarında gerçekleştirilmiştir. Uygulama sürecinde, tüm katılımcılara araştırmanın amacı ve ölçeklerin uygulanmasına ilişkin temel yönergeler standart bir şekilde açıklanmıştır.

Verilerin Analizi : Araştırmadan elde edilen verilerin istatistiksel analizi için SPSS 16.0 paket programı kullanılmıştır. Öğretmenlerin mesleki tükenmişlik puanlarının sosyo-demografik değişkenler açısından anlamlı düzeyde farklılaşıp farklılaşmadığını belirlemek amacıyla verilere ikili karşılaştırmalar için t testi, çoklu karşılaştırmalar içi Tek Yönlü Varyans Analizi (ANOVA) uygulanmıştır. Farklılaşmanın kaynağını belirlemek üzere post hoc test olarak verilere Scheffe testi uygulanırken, etki büyüklüğünü belirlemek için de eta kare (η2) değerine bakılmıştır. Ayrıca öğretmenlerin mesleki tükenmişlik puanları ile iş doyumu ve genel yetkinlik inancı puanları arasındaki ilişkinin belirlenmesi için Pearson korelasyon Katsayısı ve iş doyumu ile genel yetkinlik inancı puanlarının mesleki tükenmişlik puanlarını yordamadaki katkılarını ele almak için çoklu regresyon analizi kullanılmıştır.

Araştırmanın Bulguları: Araştırmadan elde edilen sonuçlara göre, öğretmenlerin mesleki tükenmişlik puanları üzerinde cinsiyet [($t_{(450)=}$ .56, p>.05)],medeni durum [($t_{(450)}$= 1.56; p>.05)], branş [($F_{(2-449)}$= 1.04; p>.05)] ve çalışma arkadaşlarından destek görüp görmeme [($F_{(2-449)}$= 1.67; p>.05)]değişkenleri açısından anlamlı bir farklılık elde edilmezken, yaş [($F_{(3-448)}$= 6.28, *p*<.05)], görev süresi [($F_{(3-448)}$= 3.73; p<.05)], mesleğini kendine uygun görme [($F_{(3-448)}$= 9.02; p<.05)], yöneticilerinden takdir görme [($F_{(2-449)}$= 18.80, *p*<.05)] ve mesleğe bağlılık [($F_{(2-449)}$= 8.47, *p*<.05)] değişkenleri açısından anlamlı bir farklılık elde edildiği görülmüştür. Buna ek olarak, etki büyüklüğünü belirlemek üzere elde edilen eta kare değerleri açısından öğretmenlerin mesleki tükenmişlik puan ortalamaları üzerinde, yöneticilerinden takdir görme değişkeninin etkisi orta düzeyde (η2= 0.08) bulunurken, diğer anlamlı fark elde edilen değişkenlerin etkisinin ise küçük düzeyde olduğu bulunmuştur. Diğer yandan, öğretmenlerin mesleki tükenmişlik puanları ile iş doyumu (r= -0.37; p<.01) ve genel yetkinlik inancı puanları (r= -0.26; p<.01) arasında negatif yönde anlamlı ilişkiler elde edilmiş ve iş doyumu ile genel yetkinlik inancı puanlarının birlikte, mesleki tükenmişlik puanlarına ilişkin varyansın % 17'sini açıklayarak, mesleki tükenmişlik puanlarının anlamlı birer yordayıcı olduğu (R= .041, R²= 0.17, p<.01) görülmüştür.

Araştırmanın Sonuçları ve Öneriler: Araştırmadan elde edilen sonuçlara göre, öğretmenlerin mesleki tükenmişlik puanları üzerinde branş, cinsiyet, çalışma arkadaşlarından destek görüp görmeme ve medeni durum değişkenleri açısından

anlamlı bir farklılık elde edilmezken, görev süresi, yaş, mesleğe bağlılık, yöneticilerinden takdir görme ve mesleğini kendine uygun görme değişkenleri açısından anlamlı bir farklılık elde edildiği görülmüştür. Diğer yandan, öğretmenlerin mesleki tükenmişlik puanları ile iş doyumu ve genel yetkinlik inancı puanları arasında negatif yönde anlamlı ilişkiler elde edilmiş ve iş doyumu ile genel yetkinlik inancı puanlarının birlikte mesleki tükenmişlik puanlarının anlamlı birer yordayıcı olduğu görülmüştür. Tükenmişlik sendromu konusunda öğretmenlerin bilgilendirilmesi, özellikle mesleğinde tükenmişlik yaşayan öğretmenlere önlemler alınması, öğretmenlerin özel eğitim alanında mesleki gelişimleri katkı sağlayacak, hizmet içi eğitim, kurs ve seminerlerin düzenlenmesi, öğretmenlerin tükenmişliklerini azaltabilir. Özel eğitim alanında yetişmiş personel ihtiyacı giderilmelidir. Bu yüzden üniversitelerde özel eğitim bölümlerinin sayısı arttırılmalı, bu bölümlerde ihtiyacı karşılayacak sayıda mezun verilmelidir. Özel eğitim ve rehabilitasyon merkezinde çalışan öğretmenlere tükenmişliği konusunda, yapılacak yeni araştırmalarda, yapılacak yeni araştırmalarda, problem çözme, yaşam doyumu, stres, evlilik uyumu, öz-yeterlik, yükleme biçimleri gibi farklı değişkenlerle incelenmesinin yararlı olacağı düşünülmektedir.

Anahtar Kelimeler: Mesleki Tükenmişlik, İş Doyumu, Genel Yetkinlik İnancı, Özel Eğitim Öğretmenleri

Relationship between School Principals' Leadership Behaviors and Teachers' Organizational Trust*

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A R T I C L E I N F O	A B S T R A C T
	Purpose: A comfortable and happy work environment, where all the teachers are sincere and true to each other and sure that what they say and do will not be used against them, is a basic need for a teacher. It is thought that meeting this expectation is up to the feeling of trust, especially in the principal, and then in colleagues and students and parents. The aim of the study is to reveal the relationship between school principals' leadership behaviors and teachers' organizational trust, and at what level leadership behaviors predict teachers' organizational trust.
	Research Methods: A correlational survey model was used to select participants (n=722).

Findings: The results show a significant and positive relationship between democratic leadership behaviors and all dimensions of organizational trust, while autocratic and laissez-faire leadership behaviors have a significant and negative relationship with all dimensions of organizational trust. When compared to autocratic and laissez-faire leadership behaviors, democratic leadership is the most significant predictor of principal trust. In addition, democratic leadership is the only significant and positive predictor of trust in colleagues, students, and parents, even though it is at a low level.

Implications for Research and Practice: The results of the study show that democratic principal behaviors affect not only teachers' principal trust but also their trust in colleagues, students, and parents. Therefore, school principals should take education seminars to increase their awareness about the importance democratic leadership.

Introduction

Leadership is one of the most intriguing and foremost subjects in the administration field. Leadership is briefly defined as influencing a group of people in order to achieve a common goal (Northouse, 2010), but it also requires the leader to consider many different organizational behaviors such as organizational support, organization trust, citizenship, commitment, justice, culture, climate, and employee job satisfaction. These behaviors may be affected by school principals' leadership styles and they may affect employee performance and the productivity of the organization.

At schools that are considered educational organizations, teachers want and need to trust their principal, colleagues, students, and parents. In this context, it is thought that the leadership behaviors school principals show may satisfy the need of teachers' feeling trust. In a service sector like education, the quality of the school output is considered to be mainly related to school principals' leadership behaviors and teachers' feelings of organizational trust depending on those behaviors. In this regard, the aim of the present study is to reveal the relationship between school principals' leadership behaviors and teachers' organizational trust, as well as to determine at what level principals' leadership behaviors predict teachers' organizational trust.

There are nearly as many leadership definitions as the number of people who try to define it; researchers have defined it by using key terms such as personality traits, leader behaviors, interaction between leader and followers, role relations, perception of followers and its impact on followers, and organizational culture (Yukl, 1989). In accordance with this explanation, a leader can be defined as a person who can gather a group of people around himself for a common goal, and who has the abilities and skills to inspire and influence those people. In other words, a leader influences others, shows them where and how to go, and sets a clear mission and goal (Aksit, 2010). Regarding these definitions, leadership is a process that implies complicated relations between a leader and followers, and that requires a leader to influence them but not to use authority. It is only possible to mention leadership when there is a group of people seeking a common goal (Simsek, 2009). There are different classifications about leadership styles in literature, but this study mainly focuses on autocratic, democratic, and laissez-faire leadership behaviors and hereby these three leadership behaviors are mentioned.

Autocratic leadership style: Autocratic leaders think that followers need to be directed and kept under control all times. This kind of leader assigns tasks and defines how to do them, but stays away from promoting communication between group members. Autocratic leadership has both positive and negative aspects. This leadership type especially helps new recruits learn the rules and standards for their job, and effectively motivates followers to finish a given task. However, this type of leadership may force followers to comply with rules, resulting in them becoming dependent on the leader while not feeling free in the organization. As a result, followers may lose their creativity, and their endeavors to improve themselves may get damaged. They may also lose interest in their jobs, their job satisfaction may

decrease, and their attitude towards their jobs may turn into hatred and anger (Northouse, 2009).

Democratic leadership style: Democratic leaders collaborate with followers in order to find solutions to the problems they face. They support followers, and propose suggestions instead of giving orders. Their personal traits and struggles to elevate group goals makes the followers like, respect, and trust them (Aksit, 2010). These leaders make decisions by consulting their followers, and, except for the crisis, the decisions taken by the whole group direct the organization. They also encourage the followers to take part in activities such as planning and making decisions. These leaders are open to communication in all directions, and the feeling of success ensures job satisfaction for the group members. Through this method, conflicts in the organization are solved and both motivation and productivity increase. The negative side of this leadership type is that it may slow down the decision-making process during a crisis (Sabuncuoglu & Tuz, 1998).

Laissez-faire leadership style: Laissez-faire leaders need the least amount of authority to lead. They leave the followers on their own and let them make their own plans and programs. What is positive about this leadership type is that it enables the followers to determine their own plans and policies, making them feel free to make decisions accordingly, and it also triggers their creativity. This leadership type is suitable in research and development departments, or when the followers are professionals in their field, for encouraging their creative and innovative ideas. However, it may cause destructive results when division of labor or the sense of responsibility is poor between group members (Eren, 1998).

Trust means having positive thoughts about others, relying on their words and behaviors, and having a willingness to trust them (Cook & Wall, 1980). The concept of trust also involves a sincere interest and affection towards other people (Wech, 2002). Trust means volunteering to be vulnerable to the acts of the trustee without any need to watch or control him/her, based upon the expectation that the trustee will do an important thing for the truster (Mayer, Davis, & Schoorman, 1995).

Organizational trust is a multidimensional concept, emphasizing organizational characteristics that constitute trust and ensure organization members act in a particular way. Organizational trust also involves the creation of a safe atmosphere where nobody is afraid of punishment so that the members of the organization voluntarily make themselves vulnerable (Adams & Wiswell, 2008). Organizational trust is the reliability of an organization perceived by the members, and it relies on the belief that the organization will act in favor of members, at least not disfavoring them (Tan & Tan, 2000). In other words, it is defined as the belief of the members that their rights will be protected in the organization, and they will encounter ethical behaviors (Cubukcu & Tarakcioglu, 2010). According to Tuzun (2007), organizational trust consists of positive expectations about other group members' intentions and attitudes, and relies on organizational roles, relationships, and experiences.

In organizations where the feeling of trust is dominant, there is an open and participative environment, the members adopt their responsibilities, productivity and

organizational commitment is high, the culture of reconciliation is prevalent, and the inclination to work in groups, job satisfaction and levels of taking part in decision making process increase (Teyfur, Beytekin, & Yalcinkaya, 2013). In addition, organizational trust decreases costs, increases cooperation between members, arouses a feeling of contributing more to the workplace, makes it easy to obey organizational rules, and minimizes conflicts (Erdem, 2003). In this study, organizational trust is examined in terms of schools and is categorized into three dimensions: principal trust, trust in colleagues, and trust in students and parents.

Principal trust: Positive relations, which are regarded as the most important sources in an organization between the principal and followers, are based on the feeling of trust. When the followers trust in the principal this implicitly makes them trust in the organization. In general, as the trust in the principal and organization increases, participation in the decision-making process, job satisfaction, performance, organizational commitment, perceptions about organizational success and justice, information sharing, search of consensus, willingness to try more for the wellbeing of the organization, and productivity increase, while conflicts and intention to leave the job decrease (Topaloglu, 2010). In schools, principal trust is about teachers' trust in their principal's honesty, how well the principal is interested in teachers' problems, consistent relationships between them, the level of proficiency of the principal in his/her job, whether s/he keeps his or her promises, and whether they share information about members with others (Yilmaz, 2009).

Trust in colleagues: This is defined as the belief that colleagues are competent, fair, and reliable, and they are going to treat others in the organization ethically. Trust in colleagues makes the employees support each other, and thus not exploit each other in any way (Ferres, Connell, & Travaglione, 2004). In schools, trust in colleagues is about relying on other teachers in the organization, not being suspicious of them, believing in their words and promises, believing that what they talk about between each other will not be shared, and that the relationship between teachers is open and consistent (Yilmaz, 2009). Teachers always share information about their teaching methods, deficiencies, and needs. However, if they do not think their colleagues are reliable, they may not risk believing that their words may be used against them.

Trust in students and parents: Trust in students means teachers' believing in students' words, and that they will take charge of their duties. It also involves the mutual feeling of trust between these two parties. Trust in parents expresses teachers' belief that they will be supported by parents; parents will take charge of their duties and keep their promises (Samanci, 2007). When the teachers consider their students as reliable, they do their best to form learning environments in order to increase their academic success. In return, when the students trust in their teachers, they tend to take more risks to learn new things (Goddard, Tschannen, Moran, & Hoy, 2001).

Since a school's management system based on legal authority makes the feelings of risk and vulnerability in the principal-teacher relationship inevitable, trust becomes the most natural and important part of this relationship. Leadership style plays an important role in this relationship, and researches also show that leadership style is

influential on the feeling of trust. In return, teachers' perception of trust increases when the principals take charge of their positions. School principals' supportive behaviors, sensitivity to teachers' needs, openness to teachers' ideas and feedback, setting a good example, creating a healthy climate at school, respecting teachers' vocational decisions, and collaborative attitudes enable them to be perceived as reliable by the teachers (Adams, 2008).

Once the principals and teachers trust each other and feel the support of the families, they easily try new implementations. In addition, the feeling of trust fosters an exchange of information explicitly between the principals and teachers and allows them to learn new things from each other. They also honestly talk about the implementations that work or do not work, which means they disclose their deficiencies and makes themselves vulnerable. Otherwise, without a feeling of trust it is impossible for school stakeholders to communicate sincerely (Bryk & Schneider, 2003).

The leadership behaviors of school principals are influential on all stakeholders, especially teachers. The leadership behaviors of the principal affects all the work conducted at a school, or the organizational behaviors of the teachers may differ. One of these organizational behaviors is organizational trust. All the things the principals do, implement, and say may increase or decrease organizational trust. It is thought to be quite normal that a feeling like trust, which is based on human relations, is affected by the relationship with the principal and affects relationships with him or her.

It is known that school principals' leadership behaviors affect many organizational behaviors in a school, such as organizational trust. At schools, the leadership behaviors of the principals who are responsible for all administrative activities and their approach to teachers, students, and parents may determine the environment of trust expected to occur and the success of the school accordingly. So, this study will help determine the leadership behaviors that create a school environment in which teachers work comfortably and without care. It will also determine how leadership behaviors effect teachers' perceptions about organizational trust. This study is also thought to be significant as it points out which leadership behaviors increase teachers' organizational trust levels. Accordingly, the results of the study will guide school principals if they happen to work with teachers having troubles with trust issues.

According to a literature review within accessed resources, there are no studies dealing with the relationship between democratic, autocratic, and laissez-faire leadership types and teachers' perceptions about organizational trust at schools. Therefore, this study is thought to contribute to the educational administration field. The main objective of the study is to indicate the relationship between principals' leadership behaviors and teachers' organizational trust. Within this context, the following research questions will be addressed:

1. Is there a significant relationship between the teachers' perceptions about school principals' leadership behaviors and their organizational trust levels?

2. At what level do the teachers' perceptions about their principals' leadership behaviors predict their organizational trust levels?

Method

Research Design

This is a correlational study that aims to determine the relationship between school principals' leadership behaviors and teachers' organizational trust, and at what level school principals' leadership behaviors predict teachers' organizational trust. A correlational survey model was used in this study. Survey models aim to describe the current situation or as it has been in the past (Karasar, 2007).

Research Sample

The population of the current study comprises 7233 teachers working at 252 public primary and secondary schools in the central districts (Akdeniz, Toroslar, Yenisehir, and Mezitli) of Mersin, Turkey (Mersin Directorate of National Education [MoNE], 2017). The data were collected from 722 teachers (308 male and 414 female), selected through simple random sampling. According to the calculation of sample size out of a population whose number of members is certain (Saunders, Lewis, & Thornhill, 2009), the study sample is at a 95% confidence level and a 5% error interval, which are thought to be satisfactory numbers. Detailed information about gender, age, educational status, school level, amount of time spent at a school, and union membership status is given in Table 1:

Table 1

Descriptive Statistics for Participants' Gender, Age, Educational Status, School Level, Amount of Time Spent at a School, and Union Membership Status

Demographic Details		N	%
Gender	Male	308	42.7
	Female	414	57.3
	Total	722	100
Age	22-27	38	5.3
	28-33	121	16.8
	34-39	195	27.0
	40-45	152	21.1
	46-51	125	17.3
	52-57	62	8.6
	58 +	29	4.0
	Total	722	100

Table 1 Continue

Demographic Details		N	%
	Undergraduate	74	10.2
Educational Status	Graduate	610	84.5
	Postgraduate	38	5.3
	Total	722	100
	Primary	316	43.8
School Level	Secondary	406	56.2
	Total	722	100
	0-5 years	441	61.1
	6-10 years	131	18.1
Amount of Time Spent at a School	11-15 years	93	12.9
	16 + years	57	7.9
	Total	722	100
	Yes	559	77.4
Union Membership Status	No	163	22.6
	Total	722	100

Research Instruments and Procedures

The data of the study were collected through the "Principal Behaviors Scale", developed by Kurt and Terzi (2005), and the "Omnibus Trust Scale", developed by Hoy and Tschannen Moran (2003).

The principal behaviors scale: developed by Kurt and Terzi (2005), this scale involves 29 items and 3 sub-dimensions that are democratic-participative principal behaviors (9 items), autocratic principal behaviors (9 items), and laissez-faire principal behaviors (11 items). These three sub dimensions comprising the principal behaviors scale explained 43.698% of total variance. The reliability study of the scale was conducted using an internal consistency coefficient. The Cronbach's Alpha coefficient was .66. The Cronbach's Alpha coefficient of the sub dimensions of the scale was found to be .85 in the "democratic-participative principal behaviors", .87 in the "autocratic principal behaviors", and .83 in the "laissez-faire principal behaviors" (Kurt and Terzi, 2005). The reliability analysis performed for this study shows that the Cronbach's Alpha coefficient is .95 in the "democratic-participative principal behaviors", .90 in the "autocratic principal behaviors", and .93 in the "laissez-faire principal behaviors". The scale is a 5-point Likert type scale that was assigned points from the most negative to positive as never (1,00-1,79), scarcely (1,80-2,59), sometimes (2,60-3,39), mostly (3,40-4,19), and always (4,20-5,00).

The omnibus trust scale: developed by Hoy and Tschannen Moran (2003), this scale was used in the current study to measure teachers' perceptions about organizational trust. The scale was originally in the English language but was translated into Turkish, and validity and reliability analyses were performed by Gokduman (2012). After the

analysis, three sub dimensions were found: principal trust, trust in colleagues, and trust in students and parents. The Cronbach's Alpha coefficient of the scale was found to be .87. Cronbach's Alpha coefficient of the sub dimensions of the scale was found to be .71 in the "principal trust", .77 in the "trust in colleagues", and .87 in the "trust in students and parents" (Gokduman, 2012). The reliability analysis done for this study shows that the Cronbach's Alpha coefficient is .88 in the "principal trust", .90 in the "trust in colleagues", and .88 in the "trust in students and parents". The omnibus trust scale consisting of 26 items is a 5-point Likert type scale that was assigned points from the most negative to positive as strongly disagree (1,00-1,79), disagree (1,80-2,59), partially agree (2,60-3,39), agree (3,40-4,19), and strongly agree (4,20-5,00).

Data Analysis

The SPSS 20.0 software pack was used to analyze the research data obtained from the participants. A correlation analysis was conducted to reveal if there is a significant relationship between the teachers' perceptions about their principals' leadership behaviors and their organizational trust. In addition, a multiple regression analysis was conducted in order to determine at what level the teachers' perceptions about their principals' leadership behaviors predict their organizational trust.

The main objective in the regression models is to get the equality that is based on the relationship between dependent and independent variables. In this study, the bilateral relationship between dependent and independent variables is examined. While creating regression models, it is desired that independent variables have significant relationships with dependent variables. So, it is thought that these variables will contribute to the regression model intended to be created. Incidentally, since the bilateral relationship between independent variables is under .80, there is not a multicollinearity (multiple relationships) problem, which is a main problem of multiple linear regressions (Buyukozturk, 2012).

In order to determine whether the parametric test can be used or not, whether the dependent variable is normally distributed in each condition of the independent variable was determined. For this purpose, the size of the sample and the standard values of the skewness of the data were taken together. As it was inferred from data analysis that the number of units per each condition of the independent variable was n>30, the standard values of the skewness of the dependent variable of organizational trust (-3.00, -0.25, 1.48) were found to be in the range of -3 and +3 in the standard values of the skewness (Buyukozturk, 2012; Klein et al., 2000), and the distribution was found to be normal.

Results

The first question of the study concerns whether there is a significant relationship between the teachers' perceptions about their principals' leadership behaviors and their organizational trust. The results of the correlation analysis are indicated in Table 2.

Table 2

The Correlation Analysis Results about the Relationship between the Principals' Leadership Behaviors and Teachers' Organizational Trust

	1	2	3	4	5	6	$\overline{X}$	SS
Democratic Principal	1						3.59	.91
Autocratic Principal	-.540**	1					2.47	.90
Laissez-faire Principal	-.581**	.640**	1				1.95	.88
Principal Trust	.726**	-.552**	-.650**	1			3.53	.79
Trust in Colleagues	.294**	-.166**	-.177**	.462**	1		3.44	.74
Trust in Students and Parents	.254**	-.109**	-.109**	.334**	.589**	1	3.00	.63

**p<.01

According to the results of the correlation analysis in Table 2, there is a significant and positive relationship between democratic principal behaviors and all sub dimensions of organizational trust: principal trust (r=.72), trust in colleagues (r=.29), and trust in students and parents (r=.25). According to these findings, the scores of principal trust, trust in colleagues, and trust in students and parents increase with an increase in democratic principal behaviors. However, autocratic principal behaviors have a significant and negative relationship with principal trust (r=-.55), trust in colleagues (r=-.16), and trust in students and parents (r=-.10). Furthermore, laissez-faire principal behaviors also have a significant and negative relationship with principal trust (r=-.65), trust in colleagues (r=-.17), and trust in students and parents (r=-.10). According to these findings, the scores of principal trust, trust in colleagues, and trust in students and parents decrease with an increase in autocratic and laissez-faire principal behaviors.

The second question of the study concerns at what level the teachers' perceptions about their principals' leadership behaviors predict their organizational trust. The results of the simple regression analysis are given in Tables 3, 4, and 5.

Table 3

The Regression Analysis Results about at What Level Principal Behaviors Predict Teachers'
Principal Trust

Model	Unstandardized coefficients		Standardized coefficients	t	R	R^2
	β	Std error	Beta			
1. (Constant)	1.270	.082		15.394**		
Democratic Principal Behaviors	.630	.022	.726	28.304**	.726	.527
2. (Constant)	2.501	.128		19.607**		
Democratic Principal Behaviors	.456	.025	.525	18.252**	.778	.605
Laissez-faire Principal Behaviors	-.311	.026	-.345	-11.966**		
3. (Constant)	2.685	.143		18.752**		
Democratic Principal Behaviors	.437	.026	.503	16.912**	.781	.609
Laissez-faire Principal Behaviors	-.272	.029	-.301	-9.250**		
Autocratic Principal Behaviors	-.077	.028	-.088	-2.776**		

F $_{\text{democratic principal behaviors}}$ = 801,137**

F $_{\text{democratic principal behaviors, laissez-faire principal behaviors}}$ = 551.277**

F $_{\text{democratic principal behaviors, laissez-faire principal behaviors, autocratic principal behaviors}}$ = 373.516**

Dependent Variable: Principal Trust, **p<.05

As seen in Table 3, democratic, laissez-faire, and autocratic principal behaviors predict principal trust at a significant level. According to step-by-step regression analysis results, three steps are included in the analysis. Democratic principal behaviors processed in the first step predict almost 53% of "Principal trust" [R=.726, R^2=.527]. In the second step, laissez-faire principal behaviors are included in the model besides democratic principal behaviors, and these two variables predict 60,5% of "Principal trust" [R=.778, R^2=.605]. In the third step, autocratic principal behaviors are included in the model besides democratic and laissez-faire principal behaviors, and these three variables predict 60,9% of "Principal trust" [R=.781, R^2=.609]. According to Beta and R^2 values, the relative significance order of predictor variables on principal trust is "democratic principle behaviors", "laissez-faire principal behaviors", and "autocratic principle behaviors".

Table 4

The Regression Analysis Results about at What Level Principal Behaviors Predict Teachers'
Trust in Colleagues

Model	Unstandardized coefficients	Standardized coefficients		t	R	R^2
	β	Std error	Beta			
1.(Constant)	2.593	.107		24.175**	.294	.086
Democratic Principal Behaviors	.239	.029	.294	8.241**		
F _{democratic principal behaviors} = 67.910**						
Dependent Variable: Trust in Colleagues, **p<.05						

As seen in Table 4, democratic principal behaviors predict trust in colleagues at a significant level (R=.294, R^2=.086, p<.05). According to these findings, democratic principal behaviors account for 8,6% of the total variance in "Trust in colleagues". Democratic principal behaviors predict teachers' trust in colleagues in a positive way and at a significant level (Beta= .294, p<.05).

Table 5

The Regression Analysis Results about at What Level Principal Behaviors Predict Teachers'
Trust in Students and Parents

Model	Unstandardized coefficients		Standardized coefficients	t	R	R^2
	β		Std error	Beta		
1.(Constant)	2.370	.093		25.425**	.254	.065
Democratic Principal Behaviors	.177	.025	.254	7.053**		
F _{democratic principal behaviors} = 49.743**						
Dependent Variable: Trust in Students and Parents, **p<.05						

As seen in Table 5, democratic principal behaviors predict trust in students and parents at a significant level (R=.254, R^2=.065, p<.05). According to these findings, democratic principal behaviors account for 6,5% of the total variance in trust in students and parents. Democratic principal behaviors predict trust in students and parents in a positive way and at a significant level (Beta= .254, p<.05).

Discussion, Conclusion, and Recommendations

In this study, the relationship between school principals' leadership behaviors and teachers' organizational trust has been examined in accordance with teacher perceptions. The results of the study show that there is a relationship between teachers' perceptions about their principals' leadership behaviors and their organizational trust, and democratic principal behaviors predict all dimensions of organizational trust, but especially principal trust.

Upon analyzing the relationship between teachers' perceptions about school principals' leadership behaviors and teachers' organizational trust, there is a positive and significant relationship between democratic principal behaviors and all dimensions of organizational trust, while there is a negative and significant relationship between laissez-faire, autocratic principal behaviors and all dimensions of organizational trust. According to these findings, it can be stated that as school principals' democratic behaviors increase, the level of teachers' organizational trust increases. Analyzing the literature, this result of the study is completely parallel to Celik (2016), who found a positive, medium, and significant relationship between democratic leadership and principal trust, trust in colleagues, and trust in students and parents. In addition, he also found that the highest positive and significant relationship is between democratic leadership and principal trust variables. In similar studies, Cemaloglu and Kilinc (2012), and Ozyigit (2012) determined there is a negative and significant relationship between laissez-faire principal behaviors and trust in the principal and trust in school. In the accessed studies conducted abroad, there is no study that deals with the relationship between organizational trust and leadership behaviors handled in this study, but some studies dealing with the relationship between leadership behaviors and other organizational behaviors were found. Aunga and Masare (2017) revealed a medium and positive relationship between democratic leadership and teachers' performance. Bhatti, Maitlo, Shaikh, Hashmi, and Shaikh (2012) examined the relationship between autocratic and democratic leadership and teachers' job performance in private and public schools, and reached the result that democratic leadership has a high relationship with teachers' job performance. Ndaipa (2016) also found a significant relationship between democratic leadership style and school climate. Regarding these results, it is possible to say that the positive and significant relationship between democratic principal behaviors and teachers' organizational trust stems from teachers' participation in decision making and management, and the principals taking their offers seriously, considering their individual differences and needs, and giving them opportunities to show their creativity, all of which are considered to be desirable and positive for the efficiency of the schools.

According to the findings of the study, democratic principal behaviors predict teachers' perceptions about principal trust in a positive way and at a high level, which explains about 53% of the total variance in principal trust. It is also seen that democratic leadership is the only significant predictor of teachers' perceptions about trust in colleagues, students, and parents, even though it is at a low level. In the accessed studies conducted in Turkey and abroad, there is no study that deals with

whether democratic, autocratic, and laissez-faire leadership behaviors predict organizational trust. Yet, there are some studies dealing with the predictive effects of different leadership styles on organizational trust. According to Yilmaz's (2004) study, supportive principal behaviors predict teachers' principal trust at a high level, while they predict teachers' trust in colleagues and in students and parents at a medium level. Yilmaz and Altinkurt (2012) examined the relationship between leadership behaviors, organizational justice, and organizational trust, and found that supportive leadership and organizational justice are the significant predictors of teachers' perceptions about organizational trust. They also reached the result that supportive leadership and organizational justice account for two thirds of principal trust, one third of trust in colleagues, and about one fifth of trust in stakeholders. Lima Rua and Araujo (2013) revealed the predictive effect of transformational leadership on organizational trust in their studies conducted in Portugal. Adiguzelli (2016) examined the relationship between distributed leadership and organizational trust according to teachers' views, and found that distributed leadership is a significant predictor of organizational trust. Beycioglu, Ozer, and Ugurlu (2012) also found that distributed leadership at schools positively affects trust among colleagues and trust in the principals. Bas (2012) determined that all dimensions of instructional leadership predict all dimensions of organizational trust, and Sendjaya and Pekerti (2010) found that servant leadership is a significant predictor of organizational trust in their studies. Teyfur, Beytekin, and Yalcinkaya (2013) reached the results in their studies that the ethical leadership skills of school administrators significantly affect the organizational trust level in primary schools. Based on the findings of this study, it is understood that democratic leadership is the most significant predictor of teachers' perceptions about principal trust. In addition, democratic principal behaviors in schools also affect teachers' trust in colleagues, and trust in students and parents. In accordance with this finding, Reyhanoglu (2006) and Tuzun (2006) point out that it is possible to generalize followers' principal trust as trust in the organization, which supports the results of the present study.

In conclusion, there is a relationship between school principals' leadership behaviors and teachers' organizational trust, and school principals' leadership behaviors predict teachers' organizational trust in terms of teacher perceptions. Regarding the findings of the study, the following suggestions are recommended:

1. The results show that democratic principal behaviors presented by the leader are highly effective on principal trust; likewise, principal trust also affects trust in colleagues and trust in students and parents. So, school principals must take in-service training organized by the Ministry of Education to show and understand the importance of democratic leadership behaviors.

2. School principals must be more open to communication, deal with teachers' problems more often, and be more transparent and consistent in their actions in order to increase teachers' perceptions about principal trust.

3. In the present study, the relationship between school principals' leadership behaviors and teachers' organizational trust was examined according to teachers'

perceptions. Therefore, it is recommended that similar studies be conducted addressing school principals' own views about their leadership behaviors.

References

Adams, C. M. (2008). Building trust in schools: A review of the empirical evidence. In Hoy, W. K. & DiPaola, M. (Eds.). *Improving Schools: Studies in Leadership and Culture* (p. 29-54). USA: Information Age Publishing.

Adams, S. & Wiswell, A. K. (2008). *Dimensionality of organizational trust.* Retrieved October 24, 2016 from

http://files.eric.ed.gov/fulltext/ED504674.pdf

Adiguzelli, Y. (2016). Dagitilmis liderlik ile orgutsel guven arasindaki iliskinin ogretmen goruslerine gore incelenmesi [Examining the relationship between distributed leadership and organizational trust in accordance with teacher perceptions]. *Egitim ve Bilim*, 41, 269-280.

Aksit, H. (2010). *Yonetim ve yoneticilik [Managing and management]* (2nd ed.). Istanbul: Kumsaati Yayın Dagitim.

Aunga, D. A. O. & Masare, O. (2017). Effects of leadership styles on teacher's performance in primary schools of Arusha District Tanzania. *International Journal of Educational Policy Research and Review*, 4, 42-52.

Bas, G. (2012). Correlation between school principals' instructional leadership behaviours and teachers' organizational trust perceptions. *Middle Eastern & African Journal of Educational Research*, 1, 5-18.

Beycioglu, K., Ozer, N. & and Ugurlu, C. T. (2012). Distributed leadership and organizational trust: the case of elementary schools. *Social and Behavioural Sciences*, 46, 3316-3319.

Bhatti, N., Maitlo, G. M., Shaikh, N., Hashmi, M. A. & Shaikh, F. M. (2012). The impact of autocratic and democratic leadership style and job satisfaction. *International Business Research*, 5, 192-201.

Bryk, A. S. & Schneider, B. (2003). Trust in schools: A core resource for school reform. *Educational Leadership*, 60, 40-45.

Buyukozturk, S. (2012). *Sosyal bilimler icin veri analizi el kitabi [Data analysis handbook for social studies]* (16th ed.). Ankara: Pegem Akademi.

Cemaloglu, N. & Kilinc, A. C. (2012). Okul mudurlerinin liderlik stilleri ile ogretmenlerin orgutsel guven duzeyleri arasindaki iliski [The relationship between school principals' leadership styles and level of teachers' organizational trust]. *Mehmet Akif Ersoy Universitesi Egitim Fakultesi Dergisi*, 23, 132-156.

Cook, J. & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology*, 53, 39-52.

Celik, H. (2016). *Demokratik liderlik ve orgutsel guven iliskisi: Balikesir merkez ilceleri ornegi [The relationship between democratic leadership and organizational trust: Balıkesir central districts case].* (Unpublished master's thesis), Balikesir Universitesi, Balikesir.

Cubukcu, K. & Tarakcioglu S. (2010). Orgutsel guven ve baglilik iliskisinin otelcilik ve turizm meslek lisesi ogretmenleri uzerinde incelenmesi [Examining the relationship between organizational trust and commitment on the teachers working at hotel management and tourism vocational high schools]. *Isletme Arastirmalari Dergisi*, 2, 57-78.

Erdem, F. (2003). Orgutsel yasamda guven [Trust in organizational life]. In Erdem, F. (Edt). *Sosyal bilimlerde guven* (p. 153-182). Ankara: Vadi Yayinlari.

Eren, E. (1998). *Orgutsel davranis ve yonetim psikolojisi [Organizational behaviour and management physchology]* (5th ed.). Istanbul: Beta Basim.

Ferres, N., Connell, J. & Travaglione, A. (2004). Co-worker trust as a social catalyst for constructive employee attitudes. *Journal of Managerial Psychology*, 19, 608-622.

Goddard, R. D., Tschannen-Moran, M. & Hoy, W. K. (2001). A multilevel examination of the distribution and effects of teacher trust in students and parents in urban elementary schools. *The Elementary School Journal*, 102, 3-17.

Gokduman, D. (2012). *Ilkogretim okulu ogretmenlerinin orgutsel guven algilarinin bazi degiskenler acisindan incelenmesi [Examining primary school teachers' perceptions about organizational trust in terms of some variables].* (Unpublished master's thesis), Ahi Evran Universitesi, Kirsehir.

Hoy, W. K. & Tschannen-Moran, M. (2003). The conceptualization and measurement of faculty trust in schools: The omnibus T-Scale. In Hoy, W. K. & Miskel, C. G. (Eds.). *Studies in leading and organizing schools* (p. 181-208). Connecticut: Information Age Publishing.

Karasar, N. (2007). *Bilimsel arastirma yontemi: kavramlar, ilkeler, teknikler [Scientific research method: concepts, principals, techniques]* (17th ed.). Ankara: Nobel Yayincilik.

Klein et al., 2000 – Klein, K.J., Bliese, P.D., Kozlowski, S.W.J., Dansereau, F., Gavin, M.B., Griffin, M.A., Hofmann, D.A., James, L.R., Yammarino, F.J., & Bligh, M.C. (2000). Multilevel analytical techniques: Commonalities, differences, and continuing questions. In K. J. Klein & S.W.J. Kozlowski (Eds.). *Multilevel theory, research and methods in organizations: Foundations, extensions, and new directions* (p. 512-553). San Francisco, CA: Jossey-Bass.

Kurt, T. & Terzi, A. R. (2005). Ilkogretim okulu mudurlerinin yoneticilik davranislarinin ogretmenlerin orgutsel bagliligina etkisi [The impact of primary school principals' leadership behaviours on teachers' organizational commitment]. *Milli Egitim Uc Aylik Sosyal Bilimler ve Egitim Dergisi*, 166. Retrieved May 25, 2016 from http://dhgm.meb.gov.tr/yayimlar/dergiler/Milli_Egitim_Dergisi/166/index3-kurt.htm

Lima Rua, O.M.M.M. & Araujo, J.M.C. (2013). The influence of the transformational leadership in the organizational trust. *Harvard Deusto Business Research*, 2, 55-66.

Mayer, R. C., Davis, J. H. & Schoorman F. D. (1995). An integrative model of organizational trust. *The Academy of Management Review*, 20, 709-734.

MoNE (2017). Mersin Directorate of National Education.

Ndaipa, C. J. (2016). Leadership styles adopted by headteachers and the influence on staff performance in primary schools of Chimoio cluster in Mozambique. *The Eurasia Proceedings of Educational & Social Sciences*, 5, 107-115.

Northouse, P. G. (2009). *Introduction to leadership: Concepts and practice* (1st ed.). California: Sage Publications.

Northouse, P. G. (2010). *Leadership: theory and practise* (5th ed.). California: Sage Publications.

Ozyigit, P. (2012). *Resmi ilkogretim okulu ogretmenlerinin okul mudurlerine duyduklari guven ile okul mudurlerinin liderlik stilleri arasindaki iliski: Istanbul ili Anadolu yakasi ornegi [The relationship between public primary school teachers' trust in the principal and leadership styles of the principals: Istanbul province Anatolian side case].* (Unpublished master's thesis), Maltepe Universitesi, Istanbul.

Reyhanoglu, M. (2006). *Ar-ge isbirliklerinde guven: Ankara'daki teknoparklarda faaliyet gosteren isletmelerde bir arastirma [Trust in research&development cooperation:A research conducted at technopark enterprices in Ankara].* (Unpublished doctoral dissertation), Ankara Universitesi, Ankara.

Sabuncuoglu, Z. & Tuz, M. (1998). *Orgutsel psikoloji [Organizational psychology]* (3rd ed.). Bursa: Alfa Yayincilik.

Samanci, G. (2007). *Orgutsel guven ve orgutsel vatandaslik davranisi [Organizational trust and organizational citizenship behaviour].* (Unpublished master's thesis), Afyon Kocatepe Universitesi, Afyonkarahisar.

Saunders, M., Lewis, P. & Thornhill, A. (2009). *Research methods for business students* (5th ed.). London: Pearson Education.

Sendjaya, S. & Pekerti, A. (2010). Servant leadership as antecedent of trust in organizations. *Leadership & Organization Development Journal*, 31, 643-663.

Simsek, H. (2009). *Toplam kalite yonetimi kuram, ilkeler, uygulamalar [Total quality management theory, principals, applications]* (1st ed.). Ankara: Seckin Yayincilik.

Tan, H. H. & Tan C. S. (2000). Toward the differentiation of trust in supervisor and trust in organization. *Genetic, Social and General Psychology Monographs*, 126, 241-260.

Teyfur, M., Beytekin, O. F. & Yalcinkaya, M. (2013). Ilkogretim okulu yoneticilerinin etik liderlik ozellikleri ile okullardaki orgutsel guven duzeyinin incelenmesi (Izmir ili örnegi) [Examining primary school principals' ethical leadership styles and the level of organizational trust at schools (Izmir province case)]. *Dicle Universitesi Ziya Gokalp Egitim Fakultesi Dergisi*, 21, 84-106.

Topaloglu, I. G. (2010). *Isgorenlerin adalet ve etik algilari acisindan orgutsel guven ile orgutsel baglilik iliskisi [The relationship between organizational trust and organizational commitment in terms of workers' perceptions about justice and ethics].* (Unpublished master's thesis), Atilim Universitesi, Ankara.

Tuzun, I. (2006). *Orgutsel guven, orgutsel kimlik ve orgutsel ozdeslesme iliskisi; uygulamali bir calisma [The relationship between organizational trust, organizational identity and organizational identification; an applied study].* (Unpublished doctoral dissertation), Gazi Universitesi, Ankara.

Tuzun, I.K. (2007). Guven, orgutsel guven ve guven modelleri [Trust, organizational trust and trust models]. *Karamanoglu Mehmetbey Universitesi Iktisadi ve Idari Bilimler Fakultesi Dergisi*, 13, 93-118.

Wech, B. A. (2002). Trust context, effect on organizational citizenship behaviour, supervisory fairness, and job satisfaction beyond the influence of leader-member exchange. *Business and Society*, 41, 353-360.

Yilmaz, K. (2004). Okul yoneticilerinin destekleyici liderlik davranislari ile okullardaki guven arasindaki iliski konusunda ilkogretim okulu ogretmenlerinin gorusleri [Primary school teachers' views about the relationship between school principals' supportive leadership and and trust at schools]. *Inonu Universitesi Egitim Fakultesi Dergisi*, *5*, 117-131.

Yilmaz, K. (2009). Ozel dershane ogretmenlerinin orgutsel guven duzeyleri ile orgutsel vatandaslik davranislari arasindaki iliski [The relationship between private teaching institute teachers' organizational trust levels and organizational citizenship behaviours]. *Kuram ve Uygulamada Egitim Yonetimi*, 15, 471-490.

Yilmaz, K. & Altinkurt, Y. (2012). Liderlik davranislari, orgutsel adalet ve orgutsel guven arasindaki iliski [The relationship between leadership behaviours, organizational justice and organizational trust]. *Cukurova Universitesi Egitim Fakultesi Dergisi*, 41, 12-24.

Yukl, G. (1989). Managerial leadership: a review of theory and research. *Journal of Management*, 15, 251-289.

Okul Müdürlerinin Liderlik Davranışları ile Öğretmenlerin Örgütsel Güvenleri Arasındaki İlişki

Özet

Problem Durumu: Günümüz çağdaş toplumlarında ortak bir amacı gerçekleştirmek üzere bir araya gelen insanlar örgütleri oluşturmaktadırlar. Bu örgütlerde yer alan insanlar bir taraftan örgütün ihtiyaç ve amaçlarına yönelik çalışırken bir taraftan da kendi amaçlarını gerçekleştirmeye uğraşmakta ve bunu yaparken bir takım ihtiyaçlarının karşılanmasını beklemektedirler. Bütün çalışanların birbirine karşı açık ve doğru olduğu, iletişim kanallarının her yönüyle açık olduğu, çalışanların söylediklerinin ve yaptıklarının daha sonra aleyhlerinde kullanılmayacağından emin olduğu rahat ve mutlu bir çalışma ortamı bir örgüt çalışanı için en temel ihtiyaçlardan birisidir. Bu beklentinin gerçekleşebilmesi ise en başta örgütün yöneticisine daha sonra da meslektaşlara ve paydaşlara duyulan güvene bağlıdır. Okul özelinde düşünüldüğünde de yönetimsel faaliyetlerden sorumlu olan okul müdürü gösterdiği liderlik davranışlarıyla ve öğretmenlere, öğrenci ve velilere karşı yaklaşımıyla okulda oluşması beklenen güven ortamını ve buna bağlı olarak okulun başarısını birinci elden belirleyebilmektedir. Bu noktada okul müdürünün göstereceği demokratik liderlik davranışlarının örgütsel güveni sağlamada ne kadar önemli olduğu göz önüne alındığında, araştırma sonuçlarının literatüre olumlu katkılarda bulunacağı düşünülmektedir.

Araştırmanın Amacı: Bu araştırmada kamu ilkokul ve ortaokullarında çalışan öğretmenlerin algılarına göre, okul müdürlerinin gösterdiği demokratik-katılımcı, otokratik ve tam serbesti tanıyan liderlik davranışları ile öğretmenlerin örgütsel güvenleri arasındaki ilişkinin incelenmesi amaçlanmıştır. Bu amaca ilişkin şu araştırma sorularına cevap aranmıştır:

1. Öğretmenlerin, okul müdürlerinin göstermiş oldukları liderlik davranışlarına ilişkin algıları ile örgütsel güven düzeylerine ilişkin algıları arasında anlamlı bir ilişki var mıdır?

2. Öğretmenlerin, okul müdürlerinin göstermiş oldukları liderlik davranışlarına ilişkin algıları onların örgütsel güven düzeylerine ilişkin algılarını ne düzeyde yordamaktadır?

Araştırmanın Yöntemi: Bu araştırmada okul müdürlerinin liderlik davranışları ile öğretmenlerin örgütsel güven algıları arasındaki ilişkiyi belirlemek amacıyla ilişkisel tarama modeli kullanılmıştır. Araştırmanın evrenini 2016-2017 eğitim-öğretim yılında Mersin ili merkez ilçelerinde (Akdeniz, Toroslar, Yenişehir ve Mezitli) 252 kamu

ilkokul ve ortaokulunda görev yapan 7233 öğretmen oluşturmaktadır. Çalışma evreninden oransız eleman örnekleme yoluyla seçilen örneklemde, 308 erkek ve 414 kadın öğretmen olmak üzere toplam 722 öğretmenin ölçeği değerlendirmeye alınmıştır. Araştırmanın verilerini toplamak amacıyla gerekli izinler alınarak Kurt ve Terzi (2005) tarafından geliştirilen "Yönetici Davranışları Ölçeği" ve Hoy ve Tschannen Moran (2003) tarafından geliştirilip Gökduman (2012) tarafından Türkçe'ye uyarlanan "Örgütsel Güven Ölçeği" kullanılmıştır. Yönetici davranışları ölçeği, demokratik-katılımcı yönetici davranışları, otokratik yönetici davranışları ve tam serbesti tanıyan yönetici davranışları alt boyutlarından oluşmaktadır. Ölçeğin güvenirliği demokratik-katılımcı yönetici davranışları için .95, otokratik yönetici davranışları için .90 ve tam serbesti tanıyan yönetici davranışları için .93 olarak hesaplanmıştır. Örgütsel güven ölçeği ise yöneticiye, meslektaşlara ve öğrenci ve velilere güven alt boyutlarından oluşmaktadır. Ölçeğin güvenirliği yöneticiye güven için .88, meslektaşlara güven için .90 ve öğrenci ve velilere güven için .88 olarak hesaplanmıştır.

Öğretmen algılarına göre, okul müdürlerinin göstermiş oldukları liderlik davranışları ile öğretmenlerin örgütsel güven algıları arasında anlamlı bir ilişkinin olup olmadığını ortaya koymak için korelasyon analizi yapılmıştır. Yine öğretmen algılarına göre, okul müdürlerinin göstermiş oldukları liderlik davranışlarının öğretmenlerin örgütsel güven algılarını ne düzeyde yordadığını belirlemek için ise çoklu regresyon analizinden yararlanılmıştır.

Araştırmanın Bulguları: Okul müdürlerinin liderlik davranışı alt boyutlarından demokratik yönetici davranışı boyutu ile örgütsel güven alt boyutlarından yöneticiye (r=.726, p<.01), meslektaşlara (r=.294, p<.01), öğrenci ve velilere (r=.254, p<.01) güven arasında pozitif yönde anlamlı ilişki bulunmuştur. Liderlik davranışının diğer alt boyutu olan otokratik yönetici davranışı boyutu ile örgütsel güven alt boyutlarından yöneticiye (r=-.552, p<.01), meslektaşlara (r=-.166, p<.01), öğrenci ve velilere (r=-.109, p<.01) güven arasında negatif yönde anlamlı ilişki bulunmuştur. Liderlik davranışının son alt boyutu olan tam serbesti tanıyan yönetici davranışı boyutu ile örgütsel güven alt boyutlarından yöneticiye (r=-.650, p<.01), meslektaşlara (r=-.177, p<.01), öğrenci ve velilere (r=-.109, p<.01) güven arasında negatif yönde anlamlı ilişki bulunmaktadır. Öğretmen algılarına göre demokratik, otokratik ve tam serbesti tanıyan yönetici davranışlarının öğretmenlerin yöneticiye güvenini ne düzeyde yordadığının tespiti için adımsal regresyon analizi yapılmış ve regresyon analizinin birinci adımında işlem gören demokratik yönetici davranışları yordayıcı değişkeninin yöneticiye güvene ilişkin toplam varyansın yaklaşık %53'ünü açıkladığı görülmüştür [R=.726, R²=.527]. Adımsal regresyon analizinin ikinci adımında demokratik yönetici davranışlarının yanında tam serbesti tanıyan yönetici davranışları değişkeni de modele girmiştir. Demokratik yönetici davranışları ve tam serbesti tanıyan yönetici davranışları değişkenlerinin birlikte yöneticiye güvenin %60,5'ini açıkladığı görülmüştür [R=.778, R²=.605]. Adımsal regresyon analizinin üçüncü adımında demokratik yönetici davranışları ve tam serbesti tanıyan yönetici davranışları değişkenlerinin yanında otokratik yönetici davranışları değişkeni de modele dâhil edilmiştir. Demokratik yönetici davranışları, tam serbesti tanıyan yönetici davranışları ve otokratik yönetici

davranışları değişkenlerinin üçü birlikte yöneticiye güvene ilişkin toplam varyansın yaklaşık %60,9'unu açıklayabilmektedir [R=.781, R²=.609]. Buna ek olarak yine öğretmen algılarına göre okul müdürlerinin demokratik yönetici davranışlarının öğretmenlerin meslektaşlara güveninin (R=.294, R²=.086, p<.05) ve öğrenci ve velilere güveninin (R=.254, R²=.065, p<.05) anlamlı bir yordayıcısı olduğu tespit edilmiştir.

Araştırmanın Sonuçları ve Önerileri: Bu araştırmanın sonuçları, öğretmen algılarına göre, okul müdürlerinin liderlik davranışları ile öğretmenlerin örgütsel güvenleri arasında ilişki olduğunu ortaya koymuştur. Bu ilişki demokratik yönetici davranışlarıyla örgütsel güvenin alt boyutları arasında pozitif yönlü ve anlamlı düzeydeyken otokratik ve tam serbesti tanıyan yönetici davranışlarıyla örgütsel güvenin alt boyutları arasında anlamlı ve negatif yönlüdür. Buna göre okul müdürlerinin demokratik davranışlarının öğretmenlerin örgütsel güvenlerini artırmakta ancak otokratik ve tam serbesti tanıyan davranışlarının öğretmenlerin kurumlarına karşı duyduğu örgütsel güveni azaltmakta olduğu söylenebilir. Araştırma bulguları, demokratik yönetici davranışlarının öğretmenlerin müdürlerine güvenini pozitif yönde ve anlamlı düzeyde yordadığını göstermektedir. Aynı zamanda, demokratik yönetici davranışlarının öğretmenlerin meslektaşlarına ve öğrenci ve velilere güvenini de pozitif yönde ve anlamlı düzeyde yordadığı görülmüştür.

Araştırma bulguları demokratik yönetici davranışlarının müdüre güven üzerinde oldukça etkili olduğunu ve müdüre duyulan güvenin de bütün olarak kuruma, meslektaşlara ve öğrenci ve velilere duyulan güveni olumlu yönde etkilediğini göstermektedir. Bu yüzden okul müdürlerinin demokratik yönetici davranışlarını benimseyip sergilemelerini sağlayacak gerekli hizmet içi eğitimlerin bakanlıkça düzenlenmesi gerekmektedir. Okul müdürleri kendilerine duyulan güveni artırmak için iletişim kanallarını açık tutmalı, öğretmenlerin sorunları ile daha fazla ilgilenmeli ve eylemlerinde daha şeffaf ve tutarlı olmalıdırlar.

Bu araştırmada okul müdürlerinin liderlik davranışlarıyla öğretmenlerin örgütsel güvenleri arasında ilişki öğretmen görüşlerine göre incelenmiştir. Benzer çalışmalar okul yöneticilerinin liderlik davranışlarına ilişkin kendi görüşleri de alınarak yapılabilir.

Anahtar Kelimeler: Demokratik liderlik, otokratik liderlik, tam serbesti tanıyan liderlik, okul müdürüne güven.

The Effect of Augmented Reality Applications in the Learning Process: A Meta-Analysis Study[*]

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A R T I C L E I N F O	A B S T R A C T

Purpose: The aim of this research is to investigate the effect of Augmented Reality (AR) applications in the learning process. **Problem:** Research that determines the effectiveness of Augmented Reality (AR) applications in the learning process with different variables has not been encountered in national or international literature. **Research Methods:** To determine the effect of AR in the learning process, experimental studies conducted in 2007-2017 on the use of AR in education were analyzed by the Meta

Analysis Method. Analyzed articles were selected among the publications in the journals scanned in the Social Sciences Citation Index (SSCI). In this context, 16 studies were examined to identify the effect of AR applications in the learning process. **Findings:** Findings indicated that AR applications increase students' academic achievement in the learning process compared to traditional methods. **Implications for Research and Practice:** It was concluded that AR applications do not show significant differences in academic success in the learning process. For example, the "grade level" variable of the study does not show a significant difference compared to traditional methods. When assessing AR display devices, the largest effect size was related to the use of mobile devices, while the smallest effect size was in the use of webcam-based devices. When comparing sample size in the study, it was identified that the effect size of large sample groups was affected by AR on a medium level, while small samples were affected minimally.

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Introduction

The emergence of innovative technologies helps instructional designers develop learning environments that facilitate learning (Chang, Hsu, & Wu, 2016). Fast and widespread use of wireless communication networks and mobile devices has made access to innovative technologies such as Augmented Reality (AR) considerably easier and has provided significant advantages for technology-assisted learning (Ozdemir, 2017a). AR is a variation of virtual environments commonly called Virtual Reality (VR) (Azuma, 1997), which can be defined as a technology enabling virtual objects produced by computers to be placed on physical objects in real time (Zhou, Duh, & Billinghurst, 2008).

There are two types of AR, namely, image-based AR and location-based AR. In image-based AR, some markers are needed to fix the position of 3D objects onto real-world images (Ibanez, Di-Serio, Villaran-Molina & Delgado - Kloos, 2016). In application, an AR marker is matched with a 3D model or animation, and this marker is perceived by a camera to enable the model or animation to appear on a screen (Pasareti, Hajdin, Patusaka, Jambori, Molnar & Tucsanyi-Szabo, 2011). In location-based AR, the location information of users' mobile devices is used with the help of the global positioning system (GPS) or Wi-Fi-based positioning systems (Wojciechowski & Cellary, 2013). GPS determines the exact location of mobile devices and how far related objects can be exactly calculated from the target location (Pasareti et al., 2011). In both AR types, virtual objects are associated with real-world objects, and a 3D perception is presented to its user (Ke & Hsu, 2015). AR objects can be displayed on mobile devices, projection systems or head-mounted screens (for instance, Google Cardboard). AR helps to increase users' experiences with the real world as opposed to other computer interfaces that pull users away from the real world through the screen (Billinghurst, Kato & Poupyrev, 2001). Therefore, the use of AR technologies provides benefits in a number of fields, including engineering, entertainment and education (Zhou, Duh, & Billinghurst, 2008).

Augmented Reality in Education

AR provides students with the opportunity to practice their knowledge and skills by seamlessly combining digital information with the real-world environment (Wojciechowski & Cellary, 2013). In addition to the practicing real-world senarios, AR can also provide interactive learning environments through interactive activities (Chen & Wang, 2015). AR has the potential to save time and money in the case of high-cost educational needs (Gavish, Gutierrez, Webel, Rodriguez, Peveri, Bockholt & Tecchia, 2015). AR systems, which can be used to increase collaborative learning experiences (Billinghurst, Kato & Poupyrev 2001), enable the teaching of lessons in an innovative and interactive way by presenting information in 3D format, thereby facilitating students' skill acquisition (Wu, Lee, Chang, & Liang, 2013). Besides, AR systems positively affect students' motivation and cognitive learning (Sotiriou & Bogner, 2008). They help to develop their spatial (Kaufmann & Schmalstieg, 2003) and psychomotor-cognitive skills. AR can provide hints and feedback visually, auditorily or sensorially to improve students' experiences (Zhou et al., 2008). Through these

features, AR systems can be integrated into teachers' lecture notes. Thus, the abstract information to be taught can be conveyed to the students in a concrete way. Because AR allows students to observe events that they cannot easily see in a natural environment (Wu Lee, Chang, & Liang, 2013). One of the most important advantages of AR in terms of education is helping to create a comprehensive, blended learning environment which facilitates the development of critical thinking, problem solving and mutually cooperative communicative skills by presenting digital and physical objects together in the same environment (Dunleavy, Dede & Mitchell, 2009). Following is a comparison of other analysis studies on the use of AR in the educational field with our research.

Meta- Analysis Studies Conducted for the Use of AR in the Educational Process

Using meta-analysis, Santos et al. (2014) examined 87 studies in the IEEE Xplore database, which were conducted for the use of AR at the K-12 level. Tekedere and Göker (2016) investigated 15 articles published in SCI/SSCI indexed journals between the years 2005 and 2015 by using the meta-analysis method. Finally, Yılmaz and Batdı (2016) examined the effects size of AR on academic success in 12 studies conducted in national and international areas through the meta-analysis method. The above-mentioned analysis studies are found to be limited when the results of their research-conducted to investigate the effectiveness of AR applications in the learning process in different environments and times is combined. Moreover, research that determines the effectiveness of AR applications in the learning process with different variables (e.g., education areas, educational situations, the use of AR display devices and sample sizes) has not been encountered in national or international literature. In this regard, it is considered that this research will contribute to the field in terms of these variables. The education areas that prefer to use AR technology for educational purposes differ. For this reason, it is considered important to investigate the effect of AR applications on achievement in terms of educational areas. AR technologies are more preferred as an educational tool in several science branches such as physics, chemistry, biology, mathematics and ecology (Ozdemir, 2017b). In these branches of science, teaching is easier when concepts which are abstract and difficult to understand are presented in a concrete way with the help of AR technologies (Ozdemir 2017b). AR also offers many activities that allow students to visualize some educational content (e.g., the magnetic field) that they will not see in the real world (Ibanez et al., 2014). On the contrary, the using of AR applications as an educational tool is much less frequently preferred in areas such as social sciences, business, administration and law (Ozdemir, 2017b). In addition, the analized studies emphasized that AR applications are an important factor in increasing student achievement at every level of education (Bacca at al., 2014; Ozdemir, 2017b). Experimental studies on the use of AR in education seem to have been made at various educational levels, such as secondary, undergraduate and primary education (Ozdemir, 2017b). In this framework, it can be said that the determination of the effect size of AR applications on the students' academic achievements at different educational levels is very important. Since the sample size is very important in determining the effectiveness of the method used for student achievement, it can be said that it should be considered as a variable in meta-analysis

studies. Furthermore, current devices used to display AR applications (e.g., mobile phones, tablets and webcam-based) differ. Usefulness and efficiency of these display devices can be an effective factor in uncovering the success of AR in educational environments. From this point forward, this variable is taken into consideration in this study.

A number of the studies on the use of AR in education (Chen & Tsai, 2012; Gavish et al., 2015; Han, Jo, Hyun, & So, 2015; Huang, Chen, & Chu, 2016; Ibanez, Serio, Villaran & Kloos, 2014; Kamaraine et al., 2013; Ke & Hsu, 2015; Lin, Duh, Li, Wang & Tsai, 2013; Lin, Chen & Chang, 2013; Liou, Bhagat, & Chang, 2016; Sommerauer & Müller, 2014; Yang & Liao, 2014; Zhang, Sung, Hou, & Chang, 2014) indicated that AR applications have an impact on academic achievement. In this regard, grouping the findings of the different studies dealing with AR applications and combining the quantitative findings of these studies will reveal to what extent these applications are effective.

Purpose of the Research

The aim of the research is to investigate the effect of AR applications in the learning process. Therefore, this research aimed to combine the results of the independent studies dealing with the use of AR in education. Sixteen studies were examined to identify the effect of AR applications in the learning process, and this study aimed to answer the following questions:

1.   What is the effect size of the AR applications on students' academic achievement?

2.   Are there significant differences among the effect sizes of AR applications on students' academic achievement as regard to education areas (Natural Sciences and Social Sciences) addressed in studies?

3.   Are there significant differences among the effect sizes of AR applications on students' academic achievement, when the grade levels (primary education, high school and undergraduate level) of students are taken into consideration?

4.   Are there significant differences among the effect sizes of AR applications on students' academic achievement, when the display devices used by students (mobile devices, tablets, and webcam-based devices) are handled?

5.   Are there significant differences among the effect sizes of AR applications on students' academic achievement as regard to the sampling size of the research?

Method

Research Design

The meta-analysis method was used to determine the effect of AR in the learning process. Meta-analysis is a statistical method that attempts to obtain a general conclusion by compounding findings of independent studies (Ergene, 2003). In the

meta-analysis method, results of the findings of similar studies are collected according to certain criteria, analyzed and interpreted (Lipsey & Wilson 1993).

Data Collection

The studies revealing the effectiveness of AR applications on the learning process were included in the research. In this respect, the following phases were pursued:

Literature Review

In this study, experimental studies conducted on the use of AR in education between October 1st, 2007 and February 1st, 2017 were analyzed. In this regard, the articles that use AR applications in the experimental group and the traditional applications in the control group are discussed. In order to reach these articles, this study used a three-stage roadmap as follows: In the first stage, the articles were scanned in "educational research," "education scientific disciplines," "psychology education" and "special education" categories through the Web of Science search engine. The journals scanned in the Social Sciences Citation Index (SSCI) were selected. Keywords such as "augmented reality," "augmented reality system," "mixed reality," "virtual environments," "virtual reality," and "virtual learning environments" were used as search terms. As a result of scanning the journals, an academic journal list was obtained (100 journals in total). In the second stage, the first 15 academic journals in the Google Academic h5-index rank (in the Education Technologies category) were added to the list of journals to be considered for the study (Table 1). In the final stage, six journals were added to the list which were scanned in the first 100-journal list in Web of Science, were not available in the 15-journal list in the second stage but published most articles in respect to the subject matter (Table 2). As a result, 21 academic journals scanned in SSCI were determined for evaluation in the study.

Criteria for the Inclusion of Articles and Determination of the Studies

The articles which were published by February 2017 were analyzed in the current study. In the study, symposium and conference proceedings, book reviews, book chapters, editorial writings, meeting abstracts, biographical items, master's theses and PhD theses written at national and international levels, and the studies published in other languages except in English were excluded. In the journals determined in accordance with the above criteria, this study found a total of 75 articles published on the use of AR in education until February 2017 from October 2007. Of the examined 75 articles, the articles involving the application of pre-tests, post-tests and comparisons among the groups were selected by focusing on the experimental studies. In terms of meta-analysis, studies that do not contain sufficient data to calculate effect sizes were excluded from the analysis. As a result, 16 articles were analyzed in the study according to the determined criteria.

Table 1

15 Journals at the Top List of h5-Indexed Ranking in Google Scholar Metrics, Which Were Obtained as a Result of Scanning the Web of Science Search Engine.

Academic Journal Name	h5-index* (06.02.2017)	Number of articles published on AR
Computers & Education	88	18
British Journal of Educational Technology	48	8
The Internet and Higher Education	43	1
Journal of Educational Technology & Society	41	6
Journal of Computer Assisted Learning	40	3
Intern. Review of Research in Open and Dist. Learning	38	-
Educational Technology Research and Development	32	4
Australasian Journal of Educational Technology	32	-
Intern. Journal of Computer-Supported Collaborative Learning	31	3
IEEE Transactions on Learning Technologies	28	4
Distance Education	27	-
Language, Learning & Technology	26	1
Recall	26	-
Computer Assisted Language Learning	25	-
Journal of Educational Computing Research	25	2
	Total	50

* h5-index means that h article is cited at least h times each in the last five years.

Table 2

Unavailable Journals in the List of the h5-Indexed Ranking of Google Scholar Metrics, Having Most-Published Articles in Respect to the Use of AR in Education

Academic Journals	Number of articles published on AR in education
Interactive Learning Environments	10
Journal of Science Education and Technology	8
Education and Science	3
Comunicar	2
Teachers College Record	1
Environmental Education Research	1
Total	25

Evaluation Criteria

The studies conducted with students were examined in terms of the AR applications. Furthermore, the studies involving the post-test results of the experimental and control groups were analyzed. In this regard, this research examined studies including the values for sample size (n), arithmetic mean ($\overline{X}$), standard deviation (sd) and possibility (p) to calculate effect sizes in the experimental group. In this context, studies that do not give values to calculate the effect size were excluded from the scope of the study. In studies involving more than one AR application, data from any randomly selected test were analyzed.

Coding Stage

Coding must be conducted to reflect the general characteristics of the studies covered in the meta-analysis method. In this study, the data were grouped under three main sections, as follows: The first section was called "study identity." In this section, the names and number of the studies, the countries where they were conducted, the place where they were applied, and the time and author information were included. The second section was called "study content." This section presents data including grade level, educational area, and AR display devices being used. The third section was called "study data." This section gives information about the values used in meta-analysis calculations such as sample size (n), arithmetic mean ($\overline{X}$), standard deviation (sd) and possibility (p).

Variables

In the study, the effect sizes for the usefulness of AR applications in the learning process in the articles included in the meta-analysis were treated as dependent

variables. Effect sizes are defined as standardized values for different-scale instruments in every study (Tarım, 2003). The study characteristics, which are expressed as independent variables of the study, are defined as "educational areas," "grade levels," "AR display devices used," and "sampling size".

Data Analysis

Comprehensive Meta-Analysis (CMA), the MetaWin package program and the Excel program were utilized to analyze the data in the study. CMA and MetaWin programs are used to calculate effect sizes. The primary purpose of this method is to calculate the mean differences in the experimental studies between the experimental and control groups (Hunter & Schmidth, 2004), expressed in the formula: $d = (X_e – X_c)/S_d$. In the field of educational sciences, different meta-analysis studies (Batdı, 2014; Batdı, 2017; Gözüyesil & Dikici, 2014; Günay, Kaya & Aydın, 2014) show that the *d* coefficient is used to determine the effect value. Hedge's *d* expresses coefficients used in the calculations of effect sizes in meta-analysis applications (Hedges & Olkin, 1985), where, *d* is calculated by dividing the differences between experimental and control groups with total standard deviation (Cooper, 1989; Şahin, 2005). The following classification is used to evaluate the obtained effect sizes in this study (Thalheimer & Cook, 2002):

- -0.15 < effect size < 0.15 insignificant
- 0.15 < effect size < 0.40 small
- 0.40 < effect size < 0.75 medium
- 0.75 < effect size < 1.10 large
- 1.10 < effect size < 1.45 larger
- 1.45 < effect size < very good

Since this meta-analysis study is an analysis of previously conducted studies, there is no limit to the number of studies to be included in the analysis. If the effect size of any study for meta-analysis is to be achieved, at least two studies are needed (Dinçer, 2014). When the databases identified by the criteria in the study were considered, 16 studies were analyzed in this study.

The reliability calculation of the coding form was conducted by two coders. In this respect, the inter-rater reliability formula--Reliability = Consensus / (Consensus + Disagreement) by Miles and Huberman (1994)--was conducted to ensure the reliability of the coding form. In this regard, the reliability of the study was found to be 100%.

Findings

Research Questions (RQ)

RQ-1: What is the Effect Size of the AR Applications on Students' Academic Achievement?

When all 16 studies involving the use of AR in the learning environment and the use of traditional methods in the learning environment were taken into account, the experiment group contained 506 students, and the control group contained 435 students. The frequency (f) and percentage (%) values of the different variables of the

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research such as "grade levels," "educational areas," and "AR display devices" are presented in Table 3.

Table 3

Different Variables of the Research

Variable	(f)	(%)
Grade Level		
Primary education	8	50
High school	5	31.25
Undergraduate level	3	19.75
Educational Area		
Natural Sciences	12	75
Social Sciences	4	25
AR Display Device		
Mobile devices	6	38.5
Tablet	5	31.25
Webcam-based devices	5	31.25

When Table 3 is examined in terms of "educational status," it is seen that half of the studies were carried out in the primary-education level (50%). The other half of the studies was conducted with the participants in high schools (31.25%) and the undergraduate level (19.75%). When the "educational area" variable is considered, the studies were predominantly carried out in Natural Sciences (75%) and then in Social Sciences (25%). When the AR display devices are examined, six studies were conducted with mobile devices (38.25%), five studies with tablets (31.25%), and five studies with webcam-based devices (31.25%) respectively.

The homogeneity values, mean effect values and confidence intervals in the effect sizes of the studies were included in the meta-analysis according to a Fixed-Effects Model (FEM) and Random-Effects Model (REM), as displayed in Table 4.

Table 4

The Homogeneity Values, Mean Effect Values and Confidence Intervals in the Effect Sizes of the Studies Included in the Meta-Analysis According to the Effects Models

Type of Model	n	Z	Total Heterogeneity Value (Q)	Average Effect Size (ES)	Mean Confidence Interval for Impact Size	
					Lower Limit	Upper Limit
FEM	16	7.509	53.99	0.508	0.375	0.640
REM	16	3.933	55.018	0.517	0.259	0.775

When Table 4 is examined, it is found that the effect of AR applications on academic success in the learning process is positive, with a 0.508 effect size in FEM. According to the homogeneity test, Q and p values were found to be 55.018 and 0.00, respectively. When the chi-square table is considered, the critical value was 24.996 at a 95% significance level and 15 degrees of freedom. At this point, Q values (55.018) are recognized to be higher than the critical value (24.996). Therefore, the homogeneity test for the distribution of the effect sizes was accepted in REM. In other words, the distribution can be thought to be heterogeneous.

Because of the heterogeneous nature of the study, the analyses were performed according to REM. In this respect, when the 16 studies comparing the effect of a learning environment supported by AR and the effect of a traditional learning environment not supported by AR on academic success were analyzed according to the Random-Effects Model, the upper and lower limits of a 95 confidence interval turned out to be 0.775 and .259, respectively, and the effect value was found to be .517. Therefore, the effect size was at a medium level (.517). It was concluded that AR applications positively affect academic success in the learning process.

RQ-2: Are there significant differences among the effect sizes of AR applications on students' academic achievement in various areas of education (Natural Sciences and Social Sciences) addressed in studies?

The studies conducted to reveal whether there are significant differences in academic success when using AR applications within various educational areas are displayed under two main headings, namely "Natural Sciences" and "Social Sciences" in Table 5.

Table 5

Effect Values with Regard to Educational Areas

Educational Area	n	ES	95% Confidence Interval	
			Lower Limit	Upper Limit
Natural Sciences	12	0.562	0.288	0.836
Social Sciences	4	0.409	0.212	1.031

When Table 5 is examined, it is recognized that the Natural Sciences effect sizes (0.562) is higher than the Social Sciences value (0.409). The *Q* value was found to be 0.195 according to the homogeneity test. When a 95% significance level and 1 degree of freedom is considered in chi-square table, the *Q* value turns out to be 3.841. As *Q* (0.195) is lower than the critical value (3.841). In this study, the homogeneity test for the effect sizes was implemented according to REM. In this respect, it can be stated that there is not a significant difference among the groups with regard to the effect sizes (QB = 0.195, p = 0.659). Therefore, it can be stated that the educational area does not affect AR applications. In other words, AR applications did not differ according to educational area.

RQ-3: Are There Significant Differences Among the Effect Sizes of AR Applications on Students' Academic Achievement, When the Students' Grade Levels (Primary Education, High School and Undergraduate) Are Taken into Consideration?

The studies conducted to reveal the effects of AR applications on academic success according to grade level are displayed under three main headings, namely "primary education," "high school," and "undergraduate" in Table 6.

Table 6

Effect Sizes Regarding Grade Level

Grade Level	n	ES	95% Confidence Interval	
			Lower Limit	Upper Limit
Primary Education	8	0.303	0.002	0.604
High School	5	0.623	0.359	1.319
Undergraduate	3	0.839	0.189	1.057

According to Table 6, the largest effect of AR applications on academic achievement in the learning process turned out to be with the students in undergraduate levels (0.839). Furthermore, it is seen that the effect sizes of AR applications in high schools (0.623) is higher than that in primary education (0.303). The *Q* value was 3.876 according to the homogeneity test. When 95% significance level

and 2 degrees of freedom (df) are considered in the critical-interval value of the chi-square table, this value turned out to be 5.991. In this regard, Q value (3.876) is understood to be lower than the critical value (5.991). Therefore, the homogeneity test with regard to the distribution of effect sizes was accepted in REM. This indicates that the distribution is heterogeneous and there is not a significant difference among the groups in terms of the effect values (QB = 3.876, p= 0.144).

RQ-4: Are there significant differences among the effect sizes of AR applications on students' academic achievement in regard to the display devices used by students (mobile devices, tablets, and webcam-based devices)?

The studies conducted to reveal whether there are significant differences in academic success when using AR applications on various display devices are presented in Table 7 under three main headings, namely, "mobile devices," "tablets," and "webcam-based devices."

Table 7

Effect Values with Regard to AR Display Devices

AR Display Devices	n	ES	95% Confidence Interval	
			Lower Limit	Upper Limit
Mobile Devices	6	0.686	0.180	1.192
Tablets	5	0.667	0.419	0.916
Webcam-based Devices	5	0.159	0.171	0.488

When Table 7 is considered, it was recognized that the largest effect size (0.686) is found among students using mobile devices and the smallest effect (0.159) with those using webcam-based devices. As a result of the homogeneity test, the Q value was identified as 6.371. When 95% significance level and 2 degrees of freedom (df) are considered in the critical-interval value in the chi-square table, this value is seen to be 5.991. In this regard, it is seen that the Q value (6.371) is higher than the critical value (5.991). Therefore, the homogeneity test related to the distribution of effect sizes was implemented according to FED. Thus, it was revealed that the distribution is homogenous and there is a significant difference among the groups with regard to the effect sizes (QB = 6.371; p= 0.0041) based on the display devices being used. In other words, it can be stated that the effect of AR applications on academic success in the learning process is positive when related to the display-devices variable.

RQ 5: Are There Significant Differences Among the Effect Sizes of AR Applications on Students' Academic Achievement in regard to the Sampling Size of the Research?

The studies conducted to reveal whether there are significant differences in academic success when using AR applications in various sampling sizes are provided

in Table 8 under two main headings, namely "small sampling" (1-49) and "large sampling" (50 and over).

Table 8

Effect Sizes with Regard to Sampling Size

			95% Confidence Interval	
Sampling Size	n	ES	Lower Limit	Upper Limit
Large (50 and over)	10	0.647	0.306	0.988
Small (1-49)	6	0.262	0.042	0.565

Table 8 indicated that the average effect size for the use of AR applications in a large sampling is 0.647, and the effect size in a small sampling is 0.262. According to the critical-interval value in a chi-square table with a 95% significance level and 1 degree of freedom (df), this value turned out be 3.841. In this case, the *Q* value (2.734) was understood to be lower than the critical value (3.841). The homogeneity test with regard to the distribution of effect sizes was conducted according to FEM. When the effect size of the groups, which were classified based on sampling size, was examined, it was concluded that the sampling size variable is not an effective variable.

Result, Discussion and Recommendations

Researchers need to test prototypes of AR in the learning process in terms of their benefits and user-friendliness (Santos et al., 2014). The research conducted to investigate the effectiveness of AR technology on students' learning process will give insight into the role of AR for instructional designers and educators.

The findings of the current study indicated that AR applications increase students' academic achievement in the learning process compared with the use of traditional learning methods. This result shows consistencies when the studies zoned in on students in different grade levels (Chiang, Yang, & Hwang, 2014; Gavish et al., 2015; Hsiao, Chang, Lin, & Wang, 2016; Hwang, Wu, Chen, & Tu, 2016; Ibanez, Di Serio, Villaran, & Kloos, 2014; Liou et al., 2016; Liu, 2009; Lin et al., 2015; Sommerauer & Müller, 2014; Yang & Liao, 2014; Lin et al., 2013; Yang & Liao, 2014; Yoon, Elinich, Wang, Steinmeier, & Tucker, 2012; Zhang et al., 2014).

There may be a number of reasons why learning applications supported with AR positively influence students' academic achievement. For example, Chiang et al. (2014) stated in their studies on AR that AR enables students to practice what they are learning in an entertaining environment. In another study, Hsiao et al. (2016) indicated that AR provides better understanding, recall, concentration, interaction, and more-attractive learning environments compared with traditional learning environments.

Likewise, Ibanez et al. (2014) reported that AR increases concentration and facilitates improved subject comprehension. Liou et al. (2016) studied the benefits of AR from various dimensions, thereby revealing that teachers can more-easily and quickly convey concepts to their students who study the learning materials supported by AR prior to their lessons. In another study, Lin et al. (2013) stated that AR is a supportive instrument for constructing students' own knowledge in a way that clarifies the relations among theoretical concepts or principles.

The results of the findings of the 16 studies examined according to meta-analysis indicated that the effect size of AR for Natural Sciences is higher than that for Social Sciences. However, it was determined that the effect sizes for both educational areas were at a medium level and were therefore positive. On the other hand, it was concluded that AR applications do not show significant differences in academic success during the learning process in respect to educational areas. The subjects taught in Natural Sciences courses such as physics, chemistry, biology and mathematics involve predominantly abstract concepts. However, almost all the subjects in social-science courses such as economics, political sciences, psychology and sociology, require abstract thinking. "…by integrating the digital information with real-world assets simultaneously, AR helps to concretize abstract concepts, enables the use of all senses, and enhances the sense of reality, which in turn is a huge contribution to learning" (Ozdemir, 2017a). One of the reasons why the effect sizes of AR among Natural-Science courses are higher than those of Social-Science courses is that the abstract concepts in Natural-Science courses can be concretized more easily in an AR learning environment compared with those in Social Science courses.

The effect sizes for grade level, which is a variable of the study, do not show a significant difference. Nevertheless, the effect sizes for high schools are higher than for other grade levels according to a study by Thalheimer and Cook (2002).

Display devices were studied as one of the variables in the effect of AR. According to the findings of the comparison, the largest effect size was observed with mobile devices, with the smallest effect being with desktop applications displaying webcam-based devices. Therefore, a significant difference among the effect sizes was recognized. At this point, it can be thought that "AR display devices" used for AR applications is an important variable affecting students' academic achievement in the learning process. It was found in a number of studies that the use of mobile devices to display AR applications increased the students' academic success in the learning process in comparison to the use of traditional learning methods (Chiang et al., 2014; Gavish et al., 2015 ; Hsiao et al; Hwang et al., 2016; Ibanez et al., 2014; Lin et al., 2013; Liou et al., 2016; Liu, 2009; Sommerauer & Müller, 2014; Zhang et al., 2014). On the other hand, in some studies (Chang, Chung, & Huang, 2016; Chen & Tsai, 2012) that preferred webcam-based devices to display AR applications, a significant difference was not observed in academic success. With regard to the effect sizes of sampling size in the study, it was identified that the effect value of a large sampling group was at medium level and that of a small sampling group was at a minimal level. Therefore, it was concluded that in regard to the use of AR applications in the learning process, sampling size is not an effective variable to influence academic achievement.

This study dealt with the effect of AR applications in the learning process in respect to academic success. Different research could be conducted to study the effect of AR applications in the learning process as it affects variables such as attitude, anxiety, motivation, etc. Different independent variables such as age or gender could be investigated apart from the independent variables of the current study. Master's and PhD theses related to AR studies conducted at national and international levels could be considered to examine larger sampling sizes.

References

Azuma, R. T. (1997). A survey of augmented reality. *Presence (Cambridge, Mass.)*, *6*(4), 355–385.

Bacca, J., Baldiris, S., Fabregat, R., & Graf, S. (2014). Augmented reality trends in education: a systematic review of research and applications. *Journal of Educational Technology & Society*, *17*(4), 133-149.

Batdı, D. (2014). Etkinlik temelli öğrenme yaklaşımının akademik başarıya etkisi (Metaanalitik ve tematik bir çalışma) [The Effect of Activity-Based Learning Approach on Academic Achievement (A Meta-Analytic and Thematic Study)]. *e-International Journal of Educational Research*, *5*(3), 39-55. DOI: 10.19160/e-ijer.12976.

Batdı, V. (2015). Kavram haritası tekniği ile geleneksel öğrenme yönteminin kullanılmasının öğrencilerin başarıları, bilgilerinin kalıcılığı ve tutumlarına etkisi: Bir meta-analiz çalışması [The Effect of Using the Concept-Mapping Technique and Traditional Methods on the Achievement, Retention and Attitudes of Students: A Meta-Analytic Study]. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, *42*(2), 93-102.

Batdı, V. (2017). Eğitlence Uygulamalarının Akademik Başarıya Etkisi: Meta-Analitik Bir Çalışma [The Effect of Edutainment Applications upon Academic Achievement: A Meta-Analytic Study]. *Gazi Üniversitesi Eğitim Fakültesi Dergisi, 37*(1), 47–62.

Billinghurst, M., Kato, H., & Poupyrev, I. (2001). The magicbook-moving seamlessly between reality and virtuality. *IEEE Computer Graphics and applications*, *21*(3), 6-8.

Cooper, H. M. (1989). Integrating research. A guide for literature reviews (Applied Social Research Methods Series, Vol. 2). London: Sage Publications.

Chang, H. Y., Hsu, Y. S., & Wu, H. K. (2016). A comparison study of augmented reality versus interactive simulation technology to support student learning of a socio-scientific issue. *Interactive Learning Environments*, *24*(6), 1148-1161.

Chang, R. C., Chung, L. Y., & Huang, Y. M. (2016). Developing an interactive augmented reality system as a complement to plant education and comparing

its effectiveness with video learning. *Interactive Learning Environments*, 24(6), 1245-1264.

Chen, C. M., & Tsai, Y. N. (2012). Interactive augmented reality system for enhancing library instruction in elementary schools. *Computers & Education*, *59*(2), 638-652.

Chen, C. P., & Wang, C. H. (2015). Employing Augmented-Reality-Embedded Instruction to Disperse the Imparities of Individual Differences in Earth Science Learning. *Journal of Science Education and Technology*, *24*(6), 835-847

Chiang, T. H., Yang, S. J., & Hwang, G. J. (2014). An Augmented Reality-based Mobile Learning System to Improve Students' Learning Achievements and Motivations in Natural Science Inquiry Activities. *Educational Technology & Society*, *17*(4), 352-365.

Dinçer, S. (2014). *Eğitim bilimlerinde uygulamalı meta-analiz*. Ankara: Pegem Akademi

Dunleavy, M., Dede, C., & Mitchell, R. (2009). Affordances and limitations of immersive participatory augmented reality simulations for teaching and learning. *Journal of Science Education and Technology*, *18*(1), 7-22.

Ergene, T. (2003). Effective interventions on test anxiety reduction: A meta-analysis. *School Psychology International*, *24*(3), 313-328.

Gavish, N., Gutierrez, T., Webel, S., Rodriguez, J., Peveri, M., Bockholt, U., & Tecchia, F. (2015). Evaluating virtual reality and augmented reality training for industrial maintenance and assembly tasks. *Interactive Learning Environments*, *23*(6), 778-798.

Gözüyesil, E., ve Dikici, A. (2014). Beyin temelli öğrenmenin akademik başarıya etkisi: Bir meta-analiz çalışması [The Effect of Brain Based Learning on Academic Achievement: A Meta-analytical Study]. *Educational Sciences: Theory & Practice*, 14(2), 1-2. DOI: 10.12738/estp.2014.2.2103.

Günay, R., Kaya, Y. ve Aydın, H. (2014). Çok kültürlü Eğitim Yaklaşımının Etkililik Düzeyi: Bir Meta-Analiz Çalışması [The Effectiveness Level of Multicultural Education: A Meta-Analysis Study]. *Uşak Üniversitesi Sosyal Bilimler Dergisi*, 7(4): 145-166.

Han, J., Jo, M., Hyun, E., & So, H. J. (2015). Examining young children's perception toward augmented reality-infused dramatic play. *Educational Technology Research and Development*, *63*(3), 455-474.

Hedges, L. V., & Olkin, I. (1985). Statistical methods for meta-analysis. Orlando, FL: Academic Press.

Hsiao, H. S., Chang, C. S., Lin, C. Y., & Wang, Y. Z. (2016). Weather observers: a manipulative augmented reality system for weather simulations at home, in the classroom, and at a museum. *Interactive Learning Environments*, *24*(1), 205-223.

Huang, T. C., Chen, C. C., & Chou, Y. W. (2016). Animating eco-education: To see, feel, and discover in an augmented reality-based experiential learning environment. *Computers & Education*, *96*, 72-82.

Hunter, J. E., & Schmidt, F. L. (2004). Methods of meta-analysis: Correcting error and bias in research synthesis.

Hwang, G. J., Wu, P. H., Chen, C. C., & Tu, N. T. (2016). Effects of an augmented reality-based educational game on students' learning achievements and attitudes in real-world observations. *Interactive Learning Environments*, *24*(8), 1895-1906.

Ibanez, M. B., Di Serio, A., Villaran, D., & Kloos, C. D. (2014). Experimenting with electromagnetism using augmented reality: Impact on flow student experience and educational effectiveness. *Computers & Education*, *71*, 1-13.

Kamarainen, A. M., Metcalf, S., Grotzer, T., Browne, A., Mazzuca, D., Tutwiler, M. S., & Dede, C. (2013). EcoMOBILE: Integrating augmented reality and probeware with environmental education field trips. *Computers & Education*, *68*, 545-556.

Kaufmann, H., & Schmalstieg, D. (2003). Mathematics and geometry education with collaborative augmented reality. *Computers & Graphics*, *27*(3), 339-345.

Ke, F., & Hsu, Y. C. (2015). Mobile augmented-reality artifact creation as a component of mobile computer-supported collaborative learning. *The Internet and Higher Education*, *26*, 33-41.

Lin, H. C. K., Chen, M. C., & Chang, C. K. (2015). Assessing the effectiveness of learning solid geometry by using an augmented reality-assisted learning system. *Interactive Learning Environments*, *23*(6), 799-810.

Lin, T. J., Duh, H. B. L., Li, N., Wang, H. Y., & Tsai, C. C. (2013). An investigation of learners' collaborative knowledge construction performances and behavior patterns in an augmented reality simulation system. *Computers & Education*, *68*, 314-321.

Liou, W. K., Bhagat, K. K., & Chang, C. Y. (2016). Beyond the Flipped Classroom: A Highly Interactive Cloud-Classroom (HIC) Embedded into Basic Materials Science Courses. *Journal of Science Education and Technology*, *25*(3), 460-473.

Lipsey, M. W., & Wilson, D. B. (1993). The efficacy of psychological, educational, and behavioral treatment: Confirmation from meta-analysis. *American psychologist*, *48*(12), 1181.

Liu, T. Y. (2009). A context-aware ubiquitous learning environment for language listening and speaking. *Journal of Computer Assisted Learning*, *25*(6), 515-527.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.

Ozdemir, M. (2017a). Educational Augmented Reality (AR) Applications and Development Process. In *Mobile Technologies and Augmented Reality in Open Education* (pp. 26-53). IGI Global.

Ozdemir, M. (2017b). Artırılmış Gerçeklik Teknolojisi ile Öğrenmeye Yönelik Deneysel Çalışmalar: Sistematik Bir İnceleme [Experimental Studies on Learning with Augmented Reality Technology: A Systematic Review]. *Mersin University Journal of the Faculty of Education*, *13*(2), 609-632.

Pasareti, O., Hajdin, H., Matusaka, T., Jambori, A., Molnar, I., & Tucsanyi-Szabo, M. (2011). Augmented Reality in education. *INFODIDACT 2011 Informatika Szakmódszertani Konferencia*.

Santos, M. E. C., Chen, A., Taketomi, T., Yamamoto, G., Miyazaki, J., & Kato, H. (2014). Augmented reality learning experiences: Survey of prototype design and evaluation. *Learning Technologies, IEEE Transactions on*, *7*(1), 38-56.

Sommerauer, P., & Müller, O. (2014). Augmented reality in informal learning environments: A field experiment in a mathematics exhibition. *Computers & Education*, *79*, 59-68.

Sotiriou, S., & Bogner, F. X. (2008). Visualizing the invisible: augmented reality as an innovative science education scheme. *Advanced Science Letters*, *1*(1), 114-122.

Sahin, M. C. (2005). *İnternet tabanlı uzaktan eğitimin etkililiği: Bir meta-analiz çalışması [The effectiveness of Internet-based distance education: A meta-analysis study].* Unpublished master's thesis, Çukurova University, Social Sciences Institute, Adana, Turkey

Tarım, K. (2003). *Kubaşık öğrenme yönteminin matematik öğretimindeki etkinliği ve kubaşık öğrenme yöntemine ilişkin bir meta analiz çalışması [Effectiveness of cooperative learning method on teaching mathematics and meta analytic study for cooperative learning method].* Unpublished master's thesis. Çukurova University Institute of Science and Technology, Adana, Turkey.

Tekedere, H., & Göker, H. (2016). Examining the effectiveness of augmented reality applications in education: A meta-analysis. *International Journal of Environmental and Science Education*.

Thalheimer, W., & Cook, S. (2002). How to calculate effect sizes from published research: A simplified methodology. *Work-Learning Research*, 1-9.

Wojciechowski, R., & Cellary, W. (2013). Evaluation of learners' attitude toward learning in ARIES augmented reality environments. *Computers & Education*, *68*, 570-585.

Wu, H. K., Lee, S. W. Y., Chang, H. Y., & Liang, J. C. (2013). Current status, opportunities and challenges of augmented reality in education. *Computers & Education*, *62*, 41-49.

Yang, M. T., & Liao, W. C. (2014). Computer-assisted culture learning in an online augmented reality environment based on free-hand gesture interaction. *IEEE Transactions on Learning Technologies*, *7*(2), 107-117.

Yılmaz, Z. A., & Batdı, V. (2016). Artırılmış Gerçeklik Uygulamalarının Eğitimle Bütünleştirilmesinin Meta-Analitik ve Tematik Karşılaştırmalı Analizi [A Meta-Analytic and Thematic Comparative Analysis of the Integration of Augmented Reality Applications into Education]. *Education and Science*, *41*(188), 273-289.

Yoon, S. A., Elinich, K., Wang, J., Steinmeier, C., & Tucker, S. (2012). Using augmented reality and knowledge-building scaffolds to improve learning in a science museum. *International Journal of Computer-Supported Collaborative Learning*, *7*(4), 519-541.

Zhang, J., Sung, Y. T., Hou, H. T., & Chang, K. E. (2014). The development and evaluation of an augmented reality-based armillary sphere for astronomical observation instruction. *Computers & Education*, *73*, 178-188.

Zhou, F., Duh, H. B. L., & Billinghurst, M. (2008). Trends in augmented reality tracking, interaction and display: A review of ten years of ISMAR. In *Proceedings of the 7th IEEE/ACM International Symposium on Mixed and Augmented Reality* (pp. 193-202). IEEE Computer Society.

Öğrenme Sürecinde Artırılmış Gerçeklik Uygulamalarının Etkililiği: Bir Meta-Analiz Çalışması

Atıf:

Özet

Problem Durumu: AR'nin eğitim ortamlarında kullanımına yönelik analiz çalışmalarına rastlamak mümkündür. Fakat AR uygulamalarının öğrenme sürecindeki etkisini belirlemeye yönelik farklı ortamlarda ve zamanlarda gerçekleştirilen araştırmaların birleştirilmesini öngören kapsamlı araştırmaların sınırlı olduğu ortaya çıkmaktadır. Bunun yanı sıra, AR uygulamalarının öğrenme sürecindeki etkililiğini farklı değişkenler (ders alanları, eğitim durumları, kullanılan görüntüleme aygıtları) ile belirleyen araştırmalara gerek yurt için de gerekse yurt dışında rastlanmamıştır. Bu çerçevede araştırmanın bu değişkenler bakımından alana katkıda bulunacağı düşünülmektedir.

Araştırmanın Amacı: Bu araştırmanın amacı AR uygulamalarının öğrenme sürecindeki etkisini belirlemektir.

Araştırmanın Soruları: 1. Artırılmış gerçeklik uygulamalarının öğrencilerin akademik başarıları üzerindeki etkisi nedir? 2. Araştırmaların gerçekleştirildiği ders alanları (Doğa Bilimleri ve Sosyal Bilimler) incelendiğinde, artırılmış gerçeklik uygulamalarının etki büyüklükleri arasında akademik başarı açısından anlamlı bir fark var mıdır? 3. Öğrencilerin eğitim durumları (ilköğretim, lise ve lisans) bakımından artırılmış gerçeklik uygulamalarının etki büyüklükleri arasında akademik başarı bakımından anlamlı bir fark var mıdır? 4. Öğrencilerin kullandığı görüntüleme aygıtları (mobil, tablet ve web) bakımından artırılmış gerçeklik uygulamaları arasında akademik başarı bakımından anlamlı bir fark var mıdır? 5. Araştırmanın örneklem büyüklükleriyle artırılmış gerçeklik uygulamalarının etki büyüklükleri arasında akademik başarıya göre anlamlı bir fark var mıdır?

Araştırmanın Yöntemi: AR uygulamalarının öğrenme sürecindeki etkisini belirlemek amacıyla gerçekleştirilen araştırmada meta analiz yöntemi kullanılmıştır.

Araştırma Verilerinin Toplanması: Araştırmaya artırılmış gerçeklik uygulamalarının öğrenme sürecindeki etkisini ortaya koyan çalışmalar dahil edilmiştir. Bu çerçevede şu aşamalar izlenmiştir:

Literatür Taraması: 1 Ekim 2007 ile 1 Şubat 2017 arasında eğitimde AR kullanımına yönelik yurtiçinde ve yurtdışında gerçekleştirilen nicel çalışmalar araştırmaya dâhil edilmiştir. Bu çerçevede araştırmada deney grubunda AR uygulamalarını kullanan, kontrol grubunda ise geleneksel uygulamaları kullanan makaleler ele alınmıştır. Bu makalelere ulaşmak için üç aşamalı bir yol izlenmiştir; Birinci aşamada, analiz edilecek makaleler Web of Science arama motoru yardımı ile eğitim araştırmaları, eğitim bilimsel disiplinleri, psikoloji eğitimi ve özel eğitim kategorilerinde taranmıştır. Makalelerin yayınlandığı dergiler Social Sciences Citation Index (SSCI) tarafından taranlar arasından belirlenmiştir. Tarama terimleri olarak "augmented reality", "augmented reality technology", "augmented reality system", "mixed reality", "virtual environments", "virtual reality" ve "virtual learning environments" şeklindeki anahtar kelimeler kullanılmıştır. Taramalar sonucunda bir akademik dergi listesi elde edilmiştir (toplam 100 adet). İkinci aşamada, birinci aşamada belirlenen dergilerin içerisinden, Google Akademik h5-endeks sıralamasında (Eğitim teknolojileri" kategorisinde) ilk 15'de yer alan akademik dergiler çalışma için değerlendirilmiştir (Tablo 1). Üçüncü ve son aşamada ise Web of Science taramasında elde edilen ilk 100 dergi arasında yer alıp da ikinci aşamada belirlenen 15 dergi arasında yer almayan fakat çalışma konusu ile ilgili en fazla makale yayınlayan altı dergi yine çalışma için ele alınacak dergiler listesine eklenmiştir (Tablo 2). Sonuç olarak SSCI tarafından taranan toplam 21 akademik dergi çalışmada değerlendirmek üzere belirlenmiştir.

Makaleleri Seçme Kriterleri ve Çalışmaların Belirlenmesi: Çalışmada analiz etmek üzere Ekim 2017'den Şubat 2017'ye kadar yayınlanmış SSCI makaleleri ele alınmıştır. Tarama sırasında sempozyum ve kongre bildirileri, kitap incelemesi, kitap bölümleri, editör yazıları, toplantı özetleri, biyografik öğeler, ulusal ya da uluslararası alanda yer

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alan yüksek lisans ve doktora tezleri ve İngilizce dışındaki dillerde yayınlanmış çalışmalar inceleme dışı bırakılmıştır. Yukarıda belirlenen kriterler doğrultusunda, belirlenen dergilerde Şubat 2017'ye kadar eğitimde AG kullanımı üzerine yayınlanmış olan toplam 75 makaleye ulaşılmıştır. İncelenen 75 makale içinden deneysel çalışmalara odaklanılarak özellikle ön–test ve son–test uygulanan ve gruplar arasında karşılaştırma yapılan makaleler ilgili çalışma için seçilmiştir. Meta-analiz çalışmaları için etki boyutunu hesaplamak üzere yeterince veri içermeyen araştırmalar analiz dışı bırakılmıştır. Sonuç olarak belirlenen ölçütlere göre araştırmada 16 makale analiz edilmiştir.

Araştırmanın Bulguları ve Sonuçları: Araştırmada elde edilen bulgular ile, AR uygulamalarının öğrenme sürecinde öğrencilerin akademik başarılarını geleneksel öğretime göre artırdığı sonucuna ulaşılmıştır. Bu sonuç farklı öğretim kademelerinde öğrenim gören öğrencilerle yapılan araştırma sonuçlarıyla tutarlılık göstermektedir. AR destekli öğrenme uygulamalarının öğrencilerin akademik başarılarını olumlu yönde etkilemelerinin altında yatan birçok neden olabilir. Meta-analiz kapsamında incelenen 16 araştırma bulgularının sonucu, araştırmanın gerçekleştiği eğitim alanlarına göre Doğa Bilimlerinin etki büyüklüğü Sosyal Bilimlere göre daha yüksek düzeyde ortaya çıktığını göstermektedir. Bununla birlikte her iki eğitim alanının etki büyüklüğünün orta düzeyde olduğu ve pozitif değerler aldığı belirlenmiştir. Ayrıca artırılmış gerçeklik uygulamalarının öğrenme sürecindeki akademik başarıyı eğitim alanı bakımından anlamlı olarak farklılaştırmadığı sonucuna ulaşılmıştır. Hem Doğa bilimlerinde (örn., fizik, kimya biyoloji ve matematik) anlatılan derslerde genellikle soyut kavramlar ağırlıklıdır. Fakat sosyal bilimlerde (örn., Ekonomi, Siyaset Bilimi, Psikoloji ve Sosyoloji vb.) anlatılan derslerin neredeyse tamamı soyut düşünmeyi gerektirmektedir. Meta-analiz kapsamında, Doğa Bilimlerinin etki büyüklüğünün Sosyal Bilimlere göre daha yüksek düzeyde çıkmasının olası nedenleri arasında, AR teknolojisi ile Doğa Bilimlerindeki soyut kavramların Sosyal bilimlere göre daha kolay somutlaştırılabiliyor olması yer alabilir. Araştırmanın diğer bir değişkeni olan öğretim kademesine göre etki büyüklüklerinin anlamlı bir farklılık göstermediği belirlenmiştir. Araştırmada etki büyüklükleri bakımından karşılaştırma yapılan değişkenlerden biri de görüntüleme aygıtlarıdır. Buna göre en yüksek etki büyüklüğü mobil aygıtlarda, en düşük etki büyüklüğü ise web kame tabanlı görüntüleme sistemlerinde gözlemlenmiştir. Bununla birlikte söz konusu etki büyüklükleri arasında anlamlı bir fark bulunmuştur. Bu noktadan hareketle artırılmış gerçeklik ile ilgili uygulamalarda kullanılan görüntüleme aygıtlarının öğrencilerin öğrenme sürecindeki akademik başarılarını etkileyen önemli bir değişken olduğu düşünülebilir. Öyle ki AR uygulamalarını görüntülemek için mobil aygıtların kullanıldığı çoğu çalışmada AR uygulamalarının öğrenme sürecinde öğrencilerin akademik başarılarını geleneksel öğretime göre artırdığı sonucuna ulaşılırken, AR uygulamalarını web kamerası ile görüntüleyen bazı çalışmalarda ise akademik başarıda anlamlı bir farklılık gözlenmemiştir. Araştırmada ele alınan çalışmalarda büyük örneklem gruplarının etki büyüklüğünün orta düzeyde, küçük örneklem gruplarının etki büyüklüğünün küçük düzeyde olduğu bulgusuna ulaşılmıştır. Böylece örneklem büyüklüklerinin AR uygulamalarının öğrenme sürecindeki akademik başarıyı etkileyen önemli bir değişken olduğu sonucuna ulaşılmamıştır.

Araştırmanın Önerileri: Bu çalışma artırılmış gerçeklik uygulamalarının öğrenme sürecindeki etkililiğini akademik başarı değişkeni bakımından ele almıştır. Farklı araştırmalar artırılmış gerçeklik uygulamalarının öğrenme sürecindeki etkililiğini tutum, kaygı, motivasyon gibi farklı değişkenler bakımından ele alınabilir. Araştırma kapsamında ele alınan bağımsız değişkenler dışında farklı bağımsız değişkenler (yaş, cinsiyet vb.) dikkate alınarak çeşitli araştırmalar gerçekleştirilebilir. Artırılmış gerçeklik çalışmaları ile ilgili ulusal ve uluslararası alanda yer alan yüksek lisans ve doktora tezleri dikkate alınarak daha büyük örneklem grupları incelenebilir.

Anahtar Kelimeler: Akademik başarı, yenilikçi öğrenme ortamları, tematik analiz

Determining Differential Item Functioning with the Mixture Item Response Theory

Seher YALCIN[1]

A R T I C L E I N F O	A B S T R A C T
	Purpose: Studies in the literature have generally demonstrated that the causes of differential item functioning (DIF) are complex and not directly related to defined groups. The purpose of this study is to determine the DIF according to the mixture item response theory (MixIRT) model, based on the latent group approach, as well as the Mantel-Haenszel method, based on the observed group approach, compare the results, and determine the possible causes of the DIF. **Research Methods:** As this study is contributing to the production of information to develop the theory, it is considered basic research. In accordance with the purposive sampling method, the

research sample consisted of 1166 fourth-grade level students from Singapore, Kuwait, and Turkey who participated in the Trends in International Mathematics and Science Study mathematics application and took the sixth booklet. During the data analysis, the model that adapted the data according to MixIRT was determined. Then, the status of the items displaying DIF was determined according to the adaptive model. **Findings:** According to the MixIRT, the two latent class models fit best to the data. No significant difference by gender was observed in either class or any country. This finding suggests that the gender variable, which is frequently used as the observed group in DIF studies, should not be dealt with alone. **Implications for Research and Practice**: Since it is difficult to state whether an item is advantageous for a subgroup when DIF is determined in accordance with known groups, it is recommended to employ the latent class approach to determine DIF.

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Introduction

In education and psychology, many measurements are done in order to make various decisions about individuals. The accuracy of the decisions that are constructed based on measurement results is closely related to the validity and reliability of the applications. One of the existing threats to the validity of the decisions can be expressed as item bias (Clauser & Mazor, 1998). Bias is defined as a systematic error in the measurement process (Osterlind & Everson, 2009). The state of items in a test containing systematic error decreases the validity of the measures. To investigate whether the items that compose a test are biased, it is necessary to determine whether differential item functioning is present. Differential item functioning (DIF) is the different probability of individuals in various groups responding correctly to an item after the individuals are matched at the same ability level or according to ability level (Clauser & Mazor, 1998; Embretson & Reise, 2000; Mellenberg, 1989). As the DIF is determined, two groups, which are referred to as the reference and focus groups, are compared. In related literature, the reference group is usually composed of the group considered to be favorable in terms of the features measured by the item, while the focus group represents the group considered to be disadvantageous in terms of the features measured by the item (De Ayala, 2009; Osterlind & Everson, 2009).

Many methods are recommended to find out the DIF, such as the Mantel-Haenszel (MH), SIBTEST, Logistic Regression, etc. (Camilli & Shepard, 1994; Holland & Wainer, 1993; Osterlind & Everson, 2009). The MH method is one of the most frequently used methods in literature. Developed by Mantel and Haenszel (1959), this method was first introduced by Holland and Thayer (1988) to determine DIF. A non-parametric method, MH is based on a comparison of groups matched according to matching criteria, with the help of 2x2 crosstabs that show the numbers of true and false responses separated by the focus and reference group indicators (Holland & Thayer, 1988). The MH methods are similar to other DIF methods and compare the state of functioning of an item between manifest or observed groups. It is assumed that the manifest/observed groups generally represent homogeneous subgroups, such as gender or ethnic groups, and are also associated with the origin of the DIF (Finch & French, 2012; Maij-de Meij, Kelderman, & van der Flier, 2010). However, the known/observed groups cannot always provide the assumption of group homogeneity (De Ayala, Kim, Stapleton, & Dayton, 2002; De Mars & Lau, 2013; Samuelsen, 2008). In addition, recent studies in the field of DIF have shown that the causes of DIF are usually complex and not directly associated with the defined groups (Cohen & Bolt, 2005; De Mars & Lau, 2013). In this context, it is emphasized that the DIF should be examined among latent or unknown groups (Cohen & Bolt, 2005; De Ayala et al., 2002; De Mars & Lau, 2013; Finch & French, 2012; Maij-de Meij et al., 2010; Samuelsen, 2008).

Latent variables are random variables hidden in the measurements that are made. The properties of the latent variables need be indirectly removed by using a statistical model that connects the latent variables to the observed variables (Skrondal & Rabe-Hesketh, 2007). It is seen in the literature that the latent variable models are classified according to the continuous and categorical states of the observed and latent variables.

The traditional latent variable models are presented in Table 1 (Skrondal & Rabe-Hesketh, 2007, p. 714).

Table 1

Traditional Latent Variable Models

Latent variables(s)	Observed variable(s)	
	Continuous	Categorical
Continuous	Common factor model - Structural equation model	Item response theory/ Latent trait model
Categorical	Latent profile model	Latent class model

As can be seen in Table 1, in traditional latent variable models, item response theory models are used when the observed variable is categorical and the latent variable is continuous. The item response theory (IRT) enables the prediction of an individual's abilities and parameters related to the items by associating his or her response to an item with the individual's level of ability and the properties of the item (Embretson & Reise, 2000). In other words, as traits or ability cannot be measured directly, the IRT determines the relationship between an individual's observed test performance and the unobserved traits that are assumed to underlie this performance (Hambleton & Swaminathan, 1985). While there is a continuous latent variable assumption in the IRT, it is assumed that the latent variable is categorical in latent class analysis (LCA) (De Ayala, 2009). As seen in Table 1, LCA is used when the observed variable is categorical and the latent variable is categorical. Latent class analysis is utilized to generate homogeneous subclasses from the heterogeneous latent traits that are sought to be measured. In LCA, it is accepted that all observed variables are the cause of a latent variable that cannot be observed (Vermunt & Magidson, 2002).

The combined use of IRT and LCA results in a powerful statistical method called the Mixture item response theory (MixIRT) (Cohen & Bolt, 2005). The MixIRT models (Kelderman & Macready, 1990; Maij-de Meij et al., 2010) do not have any assumptions about the type or cause of the qualitative differences in the responses of the participants. It only supposes that our sample comes from a community that is consisted of latent subgroups (De Ayala & Santiago, 2017). Latent classes (homogeneous subgroups) are defined in the MixIRT models. Different parameter estimates are calculated between the latent classes in which the same measurement model is present within each latent class. The MixIRT model assumes that a population consists of a limited number of latent individual classes, and that these classes can be differentiated based on item response patterns (von Davier & Rost, 2017). In contrast, these different response patterns are revealed as differences in the parameters of the item response model associated with each group. The formula for the MixIRT model with two parameters is as follows (Finch & French, 2012):

$$P\big(U = 1\big|g,\, \theta_{ig}\big) = \frac{e^{(a_{jg}(\,\theta_{ig} - b_{jg}))}}{1 + e^{(a_{jg}(\,\theta_{ig} - b_{jg}))}}$$

In the formula, "g: 1, 2, …, G" demonstrates latent class membership, "b_{jg}" shows intra-class difficulty for the item j, "a_{jg}" indicates the intra-class discrimination for the item j, and "θ_{ig}" shows the level of latent trait that is measured in the class for the individual referred as i. In the literature, MixIRT is used to find solutions to different research questions at different levels, like determining the DIF at item level (Cohen & Bolt, 2005; Cohen, Gregg, & Deng, 2005; Samuelsen, 2005) in addition to a bundle level or a scale level (von Davier & Yamamoto, 2004). In this study, MixIRT is used to determine the item level DIF.

MixIRT models do not limit examination to specific variables, since they do not compose DIF analysis according to known variables to determine DIF. For this reason, it is stated that it is more appropriate to determine the cause of the DIF (Maij-de Meij et al., 2010). The determining of the DIF cause also allows the test to avoid the construct validity threat and leads to an increase in the accuracy of the ability parameter estimates (Ong, Williams & Lamprianou, 2011). According to MixIRT, the DIF determination process is generally as follows: The model that is adapted the best is determined with the MixIRT. For this determination, starting from the model with one latent class, the analyses are repeated by increasing the number of latent classes until the model fit statistics give the best value. After the model that adapts to the data the best is identified, the potential presence of DIFs between the determined latent classes is examined.

When examining studies in the field that were conducted to determine the DIF with MixIRT (Cho & Cohen, 2010; Choi, Alexeev & Cohen, 2015; Cohen & Bolt, 2005; Cohen at al., 2005; Finch & Finch, 2013; Kelderman & Macready, 1990; Maij-de Meij et al, 2010; Samuelsen, 2008; Uyar, Kelecioglu, & Dogan, 2017; Yuksel, 2012), it is seen that researchers have generally compared the approaches based on observed groups that are frequently employed in determining the DIF (MH and / or Lord's Chi-square) with the results of DIF based on latent classes (Mixture Rasch, MixIRT, or multilevel MixIRT). Results have shown that the DIF determined according to the latent classes was more effective, and the results based on the real data showed that the latent class and the observed group methods gave similar results (Maij-de Meij et al., 2010). In addition, Cohen and Bolt (2005) determined that known properties that may be associated with DIF, such as gender, are generally poorly associated with latent classes. Such analyses have been usually conducted on the simulated data in the studies (Uyar et al., 2017; Yuksel, 2012). However, there are studies that have been executed with both simulated and real data, as well (Cho & Cohen, 2010; Maij-de Meij et al, 2010). In addition, it has also been shown that MixIRT models both determine the DIF and allow for direct interpretation of the possible causes of the DIF. Although studies that were conducted to determine the DIF according to the MixIRT started to become widespread in the 2000s, it is thought that they are not known in the literature in detail. As for this study, it is aimed to determine the possible causes of the DIF by

conducting analyses on only real data. In this context, the purpose of this study is to determine the DIF, compare the results, and determine the possible causes of the DIF according to the MH method based on the observed group approach and the MixIRT model based on the latent group approach. In this context, these are the questions sought to be answered:

1. Which model is adapted the best to the data, according to MixIRT? How is the distribution of characteristics related to gender, country, and item difficulty levels in the latent classes that emerge, according to the model that is adapted to the data?

2. What are the items that show DIF, according to the MixIRT, among the latent classes that emerge, according to the model that is adapted to the data?

3. What are the items indicating DIF among the latent classes, according to the MH method? Are the items that show DIF among the latent classes, according to the MixIRT and MH methods, consistent with each other?

Method

Research Design

This study is basic research because it aimed to determine the DIF, compare the results, and determine the possible causes of the DIF in accordance with the MixIRT and the MH methods, meaning that it will contribute to the production of information for developing the theory.

Research Sample

Purposive sampling method is used in this study. Since the original model (MixIRT) used in the DIF test is based on the item response theory (IRT), it is considered appropriate to use the items of the Trends in International Mathematics and Science Study (TIMSS), which is developed in accordance with IRT models. Items of the TIMSS 2015 fourth-grade mathematics subtest were examined, and analyses were executed only on the sixth booklet, which consists of dichotomous scored items. The reason the dichotomous scored items were considered is that they are appropriate for both the MixIRT and the MH methods. Moreover, since the MixIRT models identify the homogeneous latent classes in data, three countries were included in the study to create a heterogeneous data set. The TIMSS 2015 fourth-grade mathematics achievement averages were taken into consideration in the choosing of the countries. In the TIMSS 2015 fourth-grade mathematics application, the country with the highest achievement score (618) was Singapore, and the country with the lowest achievement score (353) was Kuwait. Turkey remained at the medium level with the average of 483 points (Mullis, Martin, Foy, & Hooper, 2016). The sampling of this study comprised 1166 students from these three countries who participated in the fourth-grade TIMSS mathematics application and took the sixth booklet. Demographic information is presented in Table 2.

Table 2

Demographic Information of Students Composing the Sampling by Country

Countries	Age		Gender (f*)		Total
	Mean	Standard deviation	Girl	Boy	
Kuwait	10.07	5.80	126	113	239
Singapore	10.38	.350	225	240	465
Turkey	9.85	.425	234	228	462
All groups	10.10	2.65	585	581	1166

*f: frequency

As shown in Table 2, 1166 students in total were included in the study. Approximately the same number of students from Singapore and Turkey participated in the application, while fewer students were from Kuwait. The number of students who participated in the TIMSS 2015 application from Kuwait was lower than other countries; therefore, the number of students who took this booklet was also lower (259 students). In addition, 20 students were excluded from the analysis by taking into account the missing data rates of students who participated in the application from Kuwait. Therefore, analyses were conducted on the responses of 239 students. When the average age of students was examined, it is seen that the lowest average age was in Turkey while the highest average age is in Singapore. When standard deviations were examined, a high standard deviation in Kuwait, compared to other countries, draws attention. This indicates that the students who participated in the application from Kuwait are more heterogeneous in age. It is seen that the gender proportions of the students who participated from the three countries is close to each other.

Research Instruments and Procedures

In the TIMSS application, the students' responses are obtained by using 14 different booklets. Within the scope of this study, the items in all booklets are examined; only the sixth booklet was chosen because its items consisted of dichotomous scored items. There is a total of 29 mathematical items in the booklet numbered six. Twelve of these items are from the subject field "Numbers," 11 of them are from "Geometric Shapes and Measures," and six are from "Data Display." When the questions are examined in terms of cognitive level, 15 of them are at knowledge level, eight of them are at applying level, and six are at reasoning level. In terms of item type, 16 of them are multiple choice questions and 13 (1-0 scoring) are open-ended questions.

Before analyzing the data, correlations between the items and the unidimensionality of the data were examined. Four items [M051061Z (item11-i11), M051236 (i13), M041276A (i28), M041276B (i29)] were excluded from the analysis, because of the high correlation between the items. Analyses were conducted on 25 items. Confirmatory factor analysis (CFA) was carried out in the Mplus 8 package program (Muthén & Muthén, 2017) to examine the unidimensional nature of the items in this booklet. As a result of the analysis, when the model fit statistics were evaluated, the items seemed to show a unidimensional construct ($\chi^2_{(275)}$: 757.895, p=0.00; RMSE: 0.039, CFI: 0.966, TLI: 0.963). In addition to, it is seen that the factor loadings of the items range from .403 (i24) to .865 (i4). As a result of the

CFA, when the model fit statistics were evaluated, the items showed a unidimensional construct. In this context, it can be said that the construct validity of the test is high. In addition, Cronbach's alpha reliability coefficients were computed for reliability and found to be .875. This value has shown that the internal consistency of the test is good.

Data Analysis

To analyze the first research question, a model that adapts the data in accordance with MixIRT was determined. The distribution of features such as gender and country, which are known in the emerging classes and are frequently used in the literature, was examined. Average and standard deviation information on item difficulty level were presented. The Bayesian Information Criterion (BIC) value, which is suggested in the literature (Li, Cohen, Kim, & Cho, 2009), was used to determine the appropriate model for parameter estimate based on MixIRT.

To analyze the second research question, since comparisons will be made between the latent groups, whether the same construct existed between the latent classes is tested at first. Following, the items that display DIF in accordance with the MixIRT are identified among the latent classes that emerged in accordance with the fitting model. To determine the appropriate model based on MixIRT and the DIF, the Mplus 8 package program was used (Muthén & Muthén, 2017). Mplus uses the maximum likelihood method in parameter predictions.

To analyze the third research question, the items displaying DIF among the latent classes were determined in accordance with the MH method, which is among the observed group approaches. In addition, the consistency nature of the items displaying DIF among latent classes in accordance with the MixIRT and MH methods is examined. To determine the DIF in accordance with the MH method, the "difR" package in the R software language was used (Magis, Béland, Tuerlinckx, & De Boeck, 2015). In the analyses, the iterative method is used to determine the DIF by the MH method; 1000 iterations were calculated. As a result of the analyses, the iterations with significant MH chi-square values according to the level of significance of .05 are evaluated as items with the DIF. In the MH method, the "deltaMH" value is interpreted to determine the size of the DIF. When this value is "0, " it means the DIF is "A: at a negligible level," when it is " 1.0," "B: at medium level;" when it is "1.5," "C: at large level" (Dorans & Holland, 1993). In the MH analysis, LC-2 was utilized as the focus group, since it mostly consisted of students in Kuwait and Turkey who were considered to be disadvantaged.

Results

Model Data Fit and Distribution of Characteristics Related to the Latent Classes According to MixIRT

The responses of the students to 25 mathematics items were analyzed according to the MixIRT, and the model with two latent classes (BIC: 30709.762) was found to fit the data the best. The model with one latent class (BIC: 30757.065) and the model with three latent classes (BIC: 30742.004) had a higher BIC value. As a result of the classification, the entropy value was found to be 0.815. Clark (2010) stated that an entropy value between .60 and .80

regarding the accuracy of the classification is moderate level and adequate for classification, and above .80 is considered to be high entropy. In this context, it can be interpreted that the classification quality of the latent class membership in this study is good. The distribution of students in latent classes according to the model with two latent classes by country is given in Table 3.

Table 3

Distribution of Students in Latent Classes by Country

	Latent Class (LC) – 1		Latent Class (LC) - 2		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Kuwait	9	2	230	31.8	239	20.5
Singapore	396	89.4	69	9.5	465	39.9
Turkey	38	8.6	424	58.7	462	39.6
Total	443	100	723	100	1166	100

As seen in Table 3, there are a total of 443 students in LC-1. Of the 443 participants, 89.4% (396) were from Singapore, and 85% of the students who participated in the application from Singapore are in this class. In addition, 8.6% (38) of the students were from Turkey, and 2% were from Kuwait. Furthermore, 58.6% (424) of students in LC-2 were from Turkey, 31.8% (230) were from Kuwait, and 96% of students who participated in the application from Kuwait are in this class. The distribution of students in countries that are classified in latent classes by gender is given in Figure 1.
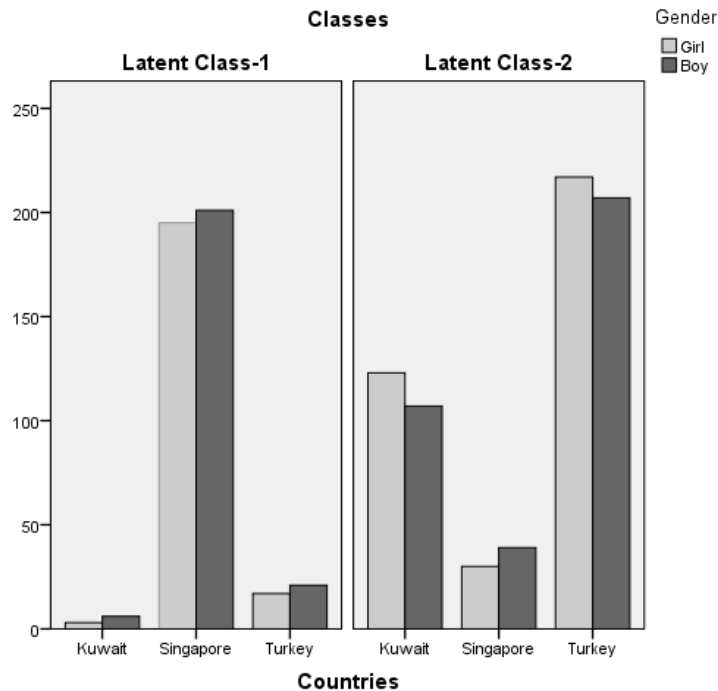

Figure 1. The number of students in countries classified in classes by gender

As can be seen in Figure 1, there is no important distinction in any country or class by gender, and the numbers according to gender are similar. However, the majority of the first latent class consisted of students participating in the application from Singapore, while the second latent class was composed of students from Kuwait and Turkey. The threshold values of the items according to the latent classes are presented in Figure 2.

Figure 2. Threshold values of the items by latent classes

As can be seen in Figure 2, the threshold value of the items was generally higher in LC-1 than LC-2. In this context, it can be interpreted that the individuals in LC-1 achieved higher success than those in LC-2. In addition, when the average difficulty values of the items in the latent classes were evaluated, the average difficulty of the items for LC-1 (mean: -2.67) was lower than LC-2 (mean: 0.88). The standard deviation (sd: 4.33) of the difficulty values of the items in LC-1 is greater than the standard deviation (sd: 1.44) of LC-2. According to these results, it can be interpreted that the items were easy for individuals in LC-1 and are at medium difficulty level for the individuals in LC-2. Only for two items (items 4 and 26) was the threshold value of the items higher in LC-2. Moreover, for items 1 and 21, the threshold values were quite close to each other.

Items Displaying DIF According to MixIRT among Latent Classes

The determination of whether the same construct existed between the latent classes was tested. As a result of the analyses conducted, five items [M051089 (i4), M051125A (i14), M051125B (i15), M041059 (i19) and M041177 (i26)] were excluded from the analyses because they did not measure the same construct on the basis of latent classes. Afterwards, analyses were carried out regarding the nature of the remaining 20 items to express DIF in accordance with the MixIRT among the latent classes. The results are presented in Table 4. Moreover, since the factor variance of item-1 (i1) was set to 1 during the analyses, the results of i1 are not present.

Table 4

DIF Results According to MixIRT

Items	Estimate	Standard error	Estimate/ Standard error
M051017 (i2)	-1.321	0.506	-2.612**
M051111 (i3)	0.261	0.579	0.450
M051094 (i5)	-0.435	0.515	-0.845
M051227 (i6)	-0.924	0.718	-1.287
M051060 (i7)	-0.203	0.542	-0.375
M051061A (i8)	0.334	0.497	0.672
M051061B (i9)	2.591	1.341	1.932
M051061C (i10)	2.877	1.632	1.762
M051129 (i12)	0.009	0.514	0.018
M041298 (i16)	-3.017	1.368	-2.205*
M041007 (i17)	-1.250	0.448	-2.787**
M041280 (i18)	-1.501	0.412	-3.646***
M041046 (i20)	0.056	0.604	0.092
M041048 (i21)	0.221	0.538	0.411
M041169 (i22)	-0.760	0.455	-1.668
M041333 (i23)	-0.506	0.544	-0.929
M041262 (i24)	-0.329	0.335	-0.984
M041267 (i25)	-0.558	0.506	-1.104
M041271 (i27)	-0.416	0.634	-0.655

Note: '***': 0.001, '**': 0.01, '*': 0.05: Indicates the level of significance.

As seen in Table 4, four items (i2, i16, i17, and i18) showed DIF at .05 level. These four items displayed DIF among the latent classes after the students' latent ability was checked. Four of these items are in the subject field of "Numbers." When the questions were examined in terms of cognitive level, all of them were at knowledge level. In terms of item type, all were multiple choice questions. All the DIF displaying items were in favor of LC-1.

Comparing MH Results with MixIRT and the Items Displaying DIF According to the MH Method among the Latent Classes

With the purpose of comparing DIF results, whether DIF exists among latent classes was examined with the MH method based on the observed approach. The DIF results according to latent classes with the MH method are given in Table 5.

Table 5

DIF Results According to Latent Classes with MH Method

Items	Chi-square	alphaMH	deltaMH	Effect size
M051140 (i1)	10.5607**	1.9228	-1.5363	C
M051017 (i2)	1.2162	0.7948	0.5398	A
M051111 (i3)	0.0715	0.9201	0.1956	A
M051094 (i5)	2.3869	1.3946	-0.7816	A
M051227 (i6)	0.1644	0.8992	0.2497	A
M051060 (i7)	3.5403	1.5007	-0.9539	A
M051061A (i8)	38.0975***	0.2447	3.3083	C
M051061B (i9)	0.0044	1.0430	-0.0990	A
M051061C (i10)	1.1145	0.7687	0.6180	A
M051129 (i12)	1.3541	0.7762	0.5954	A
M041298 (i16)	0.0767	0.8482	0.3868	A
M041007 (i17)	68.1786***	0.1573	4.3461	C
M041280 (i18)	19.8569***	0.3944	2.1867	C
M041046 (i20)	7.3242**	1.8559	-1.4532	B
M041048 (i21)	10.5624**	1.9078	-1.5180	C
M041169 (i22)	19.8727***	0.3904	2.2106	C
M041333 (i23)	7.7955**	0.5702	1.3202	B
M041262 (i24)	33.0372***	0.3226	2.6589	C
M041267 (i25)	0.6591	1.1925	-0.4137	A
M041271 (i27)	5.0007*	0.5794	1.2824	B

Note: '***': 0.001, '**': 0.01, '*': 0.05: Indicates the level of significance.

As can be seen in Table 5, 10 items (i1, i8, i17, i18, i20, i21, i22, i23, i24 and i27) showed DIF among the latent classes in accordance with the MH method. Seven of these items displayed DIF at C level, while three displayed DIF at B level. Five of these items were in the subject field of "Numbers," four were "Geometric Shapes and Measures," and one was "Data Display." When the questions were examined in terms of cognitive level, five of them were at knowledge level, three were at applying level, and two were at reasoning level. In terms of item type, nine of them were multiple choice questions, and one (scoring 1 to 0) was an open-ended question. In addition, seven of the 10 items (i8, i17, i18, i22, i23, i24 and i27) were in favor of LC-1, which is the reference group. In this group, two items (i17 and i18) that were in favor of the latent class 1 were consistent with the results obtained based on MixIRT. Three items (i1, i20 and i21), according to the MH method, were in favor of LC-2, which is the focus group.

Discussion, Conclusion and Recommendations

In this study, it is aimed to determine the causes of DIF in addition to DIF according to the MixIRT model based on the latent group approach on real data. It is also aimed to compare the results obtained with the results of the MH method, which determines the DIF based on the observed group approach and is frequently used in literature. In this context, firstly, a model that adapts to the data according to the MixIRT is determined. The distribution of properties such as gender and country, which are commonly known in the emerging latent classes and used frequently in the literature, are examined. Afterwards, the DIF display status of the items is determined according to the fitting model. In addition, items displaying DIF are determined among latent classes according to the MH method and compared with the results of the MixIRT.

According to the MixIRT, the two latent class models fit best to the data. When the individuals in the determined two latent classes were examined separately, there was no remarkable distinction in terms of gender in any country or either class. In their study, which was conducted using the Mixture Rasch model to define biased items in an achievement test, Cohen and Bolt (2005) determined that gender weakly correlates to latent classes, similar to the results of this study. In addition, Tay, Newman, and Vermunt (2011) found that the relationship between latent classes and gender was not significant. This finding, which is consistent with the literature in which the DIF is determined with the latent class approach, suggests that the gender variable, which is frequently used as the observed group in the DIF studies, should not be dealt with alone.

When the latent classes were analyzed by country, the first latent class mostly consisted of students who participated in the application from Singapore, while the second latent class mostly consists of students from Kuwait and Turkey. Cohen and Bolt (2005) also revealed that there was a relationship between ethnic origins and latent classes. Choi et al. (2015) analyzed responses of students from seven countries with different achievement levels to the TIMSS 2007 fourth-grade mathematics sub-test according to the 3PL logistic mixture item response model. As a result of the analysis, the model with two latent classes fit best to the data. Consistent with the findings of this study, it is seen that the first latent class consisted of individuals in countries that demonstrated high performance, such as Hong Kong and Singapore, while the other latent class consisted of individuals with low performances, such as Qatar and El Salvador.

When the student responses to the items were examined according to the two class models, it is seen that the items were quite easy for individuals in LC-1, and the items in LC-2 were at a medium difficulty level. In other words, individuals in LC-1 demonstrated higher achievement than those in LC-2. In their study, Choi et al. (2015) analyzed the data of the mathematics achievement test according to the MixIRT and determined that the model with two latent classes fit best. It is expressed that one of these latent classes consisted of individuals from high-performing countries, while the other latent class consisted of individuals with low performances. These findings are consistent with the findings of the study.

When the DIF was examined according to the MixIRT, four items showed the DIF among the latent classes after the students' latent ability had been checked. All the items showed DIF are in favor of LC-1, which is the group with high achievement. Items identified as DIF among latent classes were examined with regards to the subject area, cognitive level, or item type, and a pattern was revealed. All four items were in the subject field of "number," at the level of "knowing," and in "multiple choice" type. In their study, Cohen and Bolt (2005) found a relationship between subject areas (algebra, geometry, etc.) and latent classes similar to the findings of this study. In the literature, relations between subtopic subject areas and latent classes have been generally found. Finch and Finch (2013) identified three student levels and two school level latent classes with "multidimensional multilevel MixIRT" by considering students' responses to items in mathematics and language tests. The presence of DIF in the items of the latent classes was examined through MH or generalized MH techniques. Three latent classes at the individual level were expressed as follows: those who are successful in both mathematics and language; those who are unsuccessful in both; and those who are successful in mathematics, but unsuccessful in language. Some latent classes have been seen to be more successful according to mathematical subtopics. A similar finding was also found by Cohen et al. (2005).

In this study, the lack of any DIF item in favor of the focus group may be associated with the small number of items that were analyzed for DIF. Moreover, next to the highly successful Singapore, Kuwait's low and Turkey's moderate level of success is thought to be influential for items displaying DIF in favor of disadvantaged groups. In this context, it is suggested for researchers that, while creating a heterogeneous group, countries with moderate to upper and moderate to low levels of successes should be included in the studies conducted in this area, in addition to including countries with very high, very low, and moderate achievements.

As a result of the DIF analysis conducted according to the MH method, it is seen that the 10 items display the DIF among the latent classes. Seven of these items are in favor of the reference group, LC-1. Two items (i12 and i13) that are in favor of LC-1 in this group are consistent with the results obtained based on MixIRT. According to the MH method, three items are in favor of the focus group, LC-2. When the findings are generally evaluated, two out of 10 items that are determined as DIF according to the MH method also displayed DIF according to the MixIRT. In this context, it can be stated that the results of the MH method and the results of the MixIRT are consistent at low level. In their study, Maij-de Meij et al. (2010) used the Mixture Rasch model to determine DIF among latent classes, using Lord's chi-square statistics, which is among the observed group-based DIF determining methods. The results of their study demonstrate that the DIF determined according to the latent classes is more effective, while the results based on the real data showed that the latent class and the observed group methods gave similar results.

When the results of the analysis are broadly evaluated, the DIF determination approach based on the MixIRT is seen to be effective in determining DIF according to latent classes. In this context, it is suggested for all researchers who will conduct DIF examinations to also utilize the latent class approach in their analyses. In addition, it

is suggested to use the latent class approach in determining the DIF, since it is difficult to say that an item is advantageous or disadvantageous for all individuals in a subgroup when DIF is determined according to known groups.

The study also has some limitations. One of these is the use of data from only three countries. Interested researchers can also compare the situation in other countries with different levels of achievements. Another limitation is that the MixIRT analyses were conducted with the use of the maximum likelihood method in the Mplus program. Interested researchers can make parameter estimates using the Bayesian approach and/or compare the results of the two methods. Furthermore, only the MH method was used from the methods based on the observed group approach. Interested researchers can compare results using different methods.

References

Camilli, G., & Shepard, L. A. (1994). *MMSS: Methods for identifying biased test items*. Thousand Oaks, CA: Sage.

Cho, S. J., & Cohen, A. S. (2010). A multilevel mixture IRT model with an application to DIF. *Journal of Educational and Behavioral Statistics*, *35*(3), 336-370. doi: 10.3102/1076998609353111.

Choi, Y., Alexeev, N., & Cohen, A. S. (2015). Differential item functioning analysis using a mixture 3-parameter logistic model with a covariate on the TIMSS 2007 mathematics test. *International Journal of Testing*, *15*(3), 239-253. doi: 10.1080/15305058.2015.1007241.

Clark, S. L. (2010). *Mixture modeling with behavioral data*. Unpublished doctoral dissertation. University of California, Los Angeles.

Clauser, B. E., & Mazor, K. M. (1998). Using statistical procedures to identify differentially functioning test items. *Educational Measurement: Issues and Practice*, *17*(1), 31-44. doi: 10.1111/j.1745-3992.1998.tb00619.x

Cohen, A. S., & Bolt, D. M. (2005). A mixture model analysis of differential item functioning. *Journal of Educational Measurement*, *42*(2), 133–148. doi: 10.1111/j.1745-3984.2005.00007.

Cohen, A. S., Gregg, N., & Deng, M. (2005). The role of extended time and item content on a high-stakes mathematics test. *Learning Disabilities Research & Practice*, *20*(4), 225–233. doi: 10.1111/j.1540-5826.2005.00138.x.

De Ayala, R. J. (2009). *The theory and practice of item response theory*. New York, NY: Guilford Press.

De Ayala, R. J., Kim, S. H., Stapleton, L. M., & Dayton, C. M. (2002). Differential item functioning: A mixture distribution conceptualization. *International Journal of Testing*, *2*(3&4), 243-276. doi: 10.1080/15305058.2002.9669495.

De Ayala, R. J. & Santiago, S. Y. (2017). An introduction to mixture item response theory models. *Journal of School Psychology*, 60, 25–40. doi: 10.1016/j.jsp.2016.01.002.

De Mars, C. E., & Lau, A. (2011). Differential item functioning detection with latent classes: How accurately can we detect who is responding differentially? *Educational and Psychological Measurement*, *71*(4), 597–616. doi: 10.1177/0013164411404221.

Dorans, N. J., & Holland, P. W. (1993). DIF detection and description: Mantel haenszel and standardization. In P. W. Holland, and H. Wainer, (Eds.), *Differential item functioning* (p. 35–66), New Jersey: USA.

Embretson, S. E., & Reise, S. P. (2000). *Item response theory for psychologists*. Mahwah, NJ: Lawrence Erlbaum Associates.

Finch, W. H. & Finch, M. E. H. (2013). Investigation of specific learning disability and testing accommodations based differential item functioning using a multilevel multidimensional mixture item response theory model. *Educational and Psychological Measurement*, *73*(6) 973–993. doi: 10.1177/0013164413494776.

Finch, W. H. & French, B. F. (2012). Parameter estimation with mixture item response theory models: A monte carlo comparison of maximum likelihood and bayesian methods. *Journal of Modern Applied Statistical Methods*, *11*(1), 167-178. doi: 10.22237/jmasm/1335845580.

Hambleton, R. K., & Swaminathan, H. (1985). *Item response theory: Principles and application*. Boston, MA: Kluwer Academic Publishers Group.

Holland, P. W., & Thayer, D. T. (1988). Differential item performance and the mantel-haenszel procedure. In H. Wainer, and H. I. Brown (Eds.), *Test validity* (p. 129-145). Hillsdale, NJ: Lawrence Erlbaum Associates.

Holland, P. W., & Wainer, H. (1993). *Differential item functioning*. Hillsdale, NJ: Erlbaum.

Kelderman, H., & Macready, G. B. (1990). The use of loglinear models for assessing differential item functioning across manifest and latent examinee groups. *Journal of Educational Measurement*, *27*(4), 307–327.

Li, F., Cohen, A. S., Kim, S., & Cho, S. (2009). Model selection methods for mixture dichotomous IRT models. *Applied Psychological Measurement*, *33*(5), 353–373. doi: 10.1177/0146621608326422.

Magis, D., Béland, S., Tuerlinckx, F., & De Boeck, P. (2015). A general framework and an R package for the detection of dichotomous differential item functioning. *Behavior Research Methods*, *42*(3), 847-862. doi:10.3758/BRM.42.3.847.

Maij-de Meij, A. M., Kelderman, H. & van der Flier, H. (2010). Improvement in detection of differential item functioning using a mixture item response theory

model. *Multivariate Behavioral Research*, *45*(6), 975-999. doi:10.1080/00273171.2010.533047.

Mellenbergh, G. J. (1989). Item bias and item response theory. *International Journal of Educational Research*, *13*(2), 127-143. doi: 10.1016/0883-0355(89)90002-5.

Mullis, I. V. S., Martin, M. O., Foy, P., & Hooper, M. (2016). *TIMSS 2015 international results in mathematics*. Retrieved from Boston College, TIMSS & PIRLS International Study Center. Retrieved December 12, 2017, from http://timssandpirls.bc.edu/timss2015/international-results/

Muthén, L. K., & Muthén, B. O. (2017). *Mplus user's guide* (Eighth Edition). Los Angeles, CA: Muthén & Muthén.

Ong, Y. M., Williams, J., & Lamprianou, I. (2013). Exploring differential bundle functioning in mathematics by gender: The effect of hierarchical modelling. *International Journal of Research & Method in Education*, 36(1), 82-100. doi: 10.1080/1743727X.2012.675263.

Osterlind, S. J., & Everson, H. T. (2009). *Differential item functioning*. Los Angeles: Sage.

Samuelsen, K. M. (2008). Examining differential item functioning from a latent mixture perspective. In G. R. Hancock & K. M. Samuelsen (Eds.), *Advances in latent variable mixture models* (p. 177-197). Charlotte, NC: Information Age.

Skrondal, A. & Rabe-Hesketh, S. (2007). Latent variable modelling: A survey. *Scandinavian Journal of Statistics*, *34*(4), 712–745. doi: 10.1111/j.1467-9469.2007.00573.x.

Tay, L., Newman, D. A., & Vermunt, J. K. (2011). Using mixed-measurement item response theory with covariates (MM-IRT-C) to ascertain observed and unobserved measurement equivalence. *Organizational Research Methods*, *14*(1), 147-176.

Uyar, S., Kelecioglu, H., & Dogan, N. (2017). Comparing differential item functioning based on manifest groups and latent classes. *Educational Sciences: Theory & Practice*, *17*(6), 1977–2000. doi: 10.12738/estp.2017.6.0526.

Vermunt, J. K., & Magidson, J. (2002). Latent class cluster analysis. In J. A. Hagenaars, & A. L. McCutcheon, *Applied latent class analysis* (p. 89-107). New York: Cambridge University Press.

von Davier, M., & Rost, J. (2017). Logistic mixture-distribution response models. In W. J. van der Linden (Ed.), *Handbook of item response theory, volume one: Models* (p. 393-406). Boca Raton: Chapman and Hall/CRC.

von Davier, M., & Yamamoto, K. (2004). Partially observed mixtures of IRT models: An extension of the generalized partial credit model. *Applied Psychological Measurement*, *28*(6), 389-406.

Yalcin, S. (2017). The effect of latent classes formed according to the affective characteristics of students on differential item functioning based on sex.

Elementary   Education   Online,   16(4),   1917-1931.   doi: 10.17051/ilkonline.2017.364505.

Yuksel, S. (2012). *Olceklerde saptanan madde islev farklılıgının karma rasch modelleri ile incelenmesi (Analyzing differential item functioning by mixed rasch models which stated in scales)*. Yayımlanmamıs Doktora tezi. Ankara Universitesi Saglik Bilimleri Enstitusu, Ankara.

Karma Madde Tepki Kuramıyla Farklılaşan Madde Fonksiyonunun Belirlenmesi

Atıf:

Özet

Problem Durumu: Farklılaşan madde fonksiyonu (FMF), aynı yetenek düzeyinde ya da yetenek düzeyine göre bireyler eşleştirildikten sonra farklı gruplardaki bireylerin bir maddeyi doğru yanıtlama olasılığının farklı olmasıdır. FMF'nin ortaya çıkarılmasında pek çok yöntem [Mantel-Haenszel (MH), Lojistik Regresyon vb.] önerilmektedir. Bu FMF yöntemleri, bir maddenin bilinen veya gözlenen gruplar arasındaki fonksiyonlaşma durumunu kıyaslamaktadır. Gözlenen grupların ise genellikle cinsiyet (kadın ve erkek) ya da etnik gruplar gibi homojen alt grupları temsil ettiği ve FMF'nin kaynağıyla da ilişkili olduğu varsayılmaktadır. Ancak bilinen/gözlenen gruplar, grup homojenliği varsayımını her zaman sağlayamamaktadır. Ayrıca, FMF alanında yapılan son çalışmalar, FMF'nin nedenlerinin genellikle karmaşık olduğunu ve tanımlanmış gruplarla doğrudan ilişkili olmadığını göstermiştir. Bu bağlamda, FMF'nin gizil (bilinmeyen) gruplar arasında incelenmesi gerektiği vurgulanmaktadır.

Araştırmanın Amacı: Bu çalışmanın amacı gizil grup yaklaşımına dayalı Karma Madde Tepki Kuramı (KMTK) modeline ve gözlenen grup yaklaşımına dayalı MH yöntemine göre FMF'nin belirlenmesi, sonuçların karşılaştırılması ve FMF'nin olası nedenlerini belirlemektir.

Araştırmanın Yöntemi: Bu çalışmada, KMTK modeline ve MH yöntemine göre FMF'nin belirlenmesi, sonuçların karşılaştırılması ve FMF'nin olası nedenlerinin belirlenmesi amaçlandığından, yani kuramı geliştirmeye yönelik bilgi üretimine katkıda bulunduğundan temel bir araştırmadır. Bu çalışmada, amaçlı örnekleme yöntemi kullanılmıştır. FMF testinden kullanılan asıl model (KMTK), Madde Tepki Kuramı'na (MTK) dayalı olduğundan MTK modellerine göre geliştirilen Uluslararası Matematik ve Fen Eğilimleri Araştırması (TIMSS) maddelerinin kullanılmasının uygun olduğu

düşünülmüştür. TIMSS 2015 dördüncü sınıf matematik alt testi maddeleri incelenmiş, sadece ikili (1-0) puanlanan maddelerden oluşan altıncı kitapçık üzerinden analizler gerçekleştirilmiştir. İkili puanlanan maddelerin seçilmesinin nedeni, hem KMTK hem de MH yöntemine uygun olmasıdır. Ayrıca KMTK modelleri, verilerdeki homojen gizil sınıfları belirlediğinden heterojen bir veri seti oluşturmak için üç ülke çalışmaya dâhil edilmiştir. Ülkelerin seçiminde TIMSS 2015 dördüncü sınıf matematik başarı ortalamaları dikkate alınmıştır. TIMSS 2015 dördüncü sınıf matematik uygulamasında, en yüksek başarı puanına (618) sahip olan ülke Singapur iken en düşük başarı puanına (353) sahip olan ülke Kuveyt'tir. Türkiye ise 483 ortalama puanıyla orta düzeyde kalmaktadır. Heterojen bir veri seti yaratmak amacıyla bu üç ülkeden dördüncü sınıf düzeyinde TIMSS matematik uygulamasına katılıp altıncı kitapçığı alan 1166 öğrenci bu araştırmanın çalışma grubunu oluşturmuştur. TIMSS uygulamasında, 14 farklı kitapçık kullanılarak öğrencilerin cevapları alınmaktadır. Verilerin analiz edilmeden önce maddeler arası korelasyonlar ve verilerin tek boyutlu olma durumu incelenmiştir. Dört madde, maddeler arası korelasyonu yüksek olduğu için analizden çıkarılmıştır. Analizler 25 madde üzerinden yapılmıştır. Tek boyutluluk analizi sonucu, model uyum istatistikleri değerlendirildiğinde, maddelerin tek boyutlu bir yapı gösterdiği görülmüştür. Veriler analiz edilirken öncelikle KMTK'na göre veriye uyum sağlayan model belirlenmiştir. Oluşan sınıflarda bilinen ve alan yazında sıkça kullanılan cinsiyet, ülke gibi özelliklerin dağılımı incelenmiştir. Ardından gizil sınıflara göre oluşan gruplarda maddelerin tek boyutlu bir yapı gösterme durumu incelenmiş, beş maddenin aynı yapıyı ölçmediği görülerek analizden çıkarılmıştır. Kalan 20 maddenin KMTK'ya göre gizil sınıflar arasında FMF gösterme durumu tespit edilmiştir. Ayrıca, gözlenen grup yaklaşımlarından sıklıkla kullanılan MH yöntemine göre gizil sınıflar arasında FMF gösteren maddeler belirlenmiştir. KMTK'na dayalı uygun modelin ve FMF'nin belirlenmesinde Mplus 8 paket programı kullanılmıştır (Muthén & Muthén, 2017). FMF'nin MH yöntemine göre belirlenmesinde R yazılım dilinde "difR" paketi kullanılmıştır.

Araştırmanın Bulguları, Sonuçları ve Öneriler: KMTK'na göre iki gizil sınıflı model veriye en iyi uyum sağlamıştır. Belirlenen iki gizil sınıftaki bireyler ayrı ayrı incelendiğinde, her iki sınıfta da tüm ülkelerde cinsiyete göre dikkat çeken bir ayrım söz konusu değildir. Cohen ve Bolt (2005), bir başarı testinde yanlı maddeleri tanımlamak için Karma Rasch modelini kullandığı çalışmada, bu çalışmanın sonuçlarına benzer olarak cinsiyetin gizil sınıflarla zayıf bir ilişki içinde olduğunu tespit etmişlerdir. Bu durum, FMF çalışmalarında gözlenen grup olarak sıklıkla kullanılan cinsiyet değişkeninin tek başına ele alınmaması gerektiğini göstermektedir. Gizil sınıflar, ülkelere göre incelendiğinde, ilk gizil sınıfın büyük çoğunluğu Singapur'dan uygulamaya katılan öğrencilerken ikinci gizil sınıf daha çok Kuveyt ve Türkiye'den katılan öğrencilerden oluşmaktadır. Cohen ve Bolt (2005) da yaptıkları çalışmada, etnik köken ile gizil sınıflar arasında ilişkiler olduğunu görmüşlerdir. Öğrencilerin maddelere verdikleri tepkiler incelendiğinde, Gizil sınıf-1'deki bireyler için maddelerin oldukça kolay, gizil sınıf-2 için de maddelerin orta güçlükte olduğu görülmüştür. Bir diğer deyişle, Sınıf-1'deki bireyler, Sınıf-2'dekilerden daha yüksek başarıya sahiptir. KMTK'na göre FMF incelendiğinde, dört madde öğrencilerin gizil yeteneği kontrol edildikten sonra gizil sınıflar arasında FMF göstermektedir. FMF olarak belirlenen maddeler; konu alanı,

bilişsel düzey veya madde türü açısından incelenmiş ve bir örüntü olduğu görülmüştür. Cohen ve Bolt (2005) yaptıkları çalışmada, bu çalışmanın bulgularına paralel olarak konu alanları (cebir, geometri vb) ile gizil sınıflar arasında ilişkiler olduğunu tespit etmiştir. MH yöntemine göre yapılan FMF analizi sonucu, 10 madde gizil sınıflar arasında FMF göstermektedir. Bu maddelerden yedisi referans grup olan gizil sınıf-1'in lehinedir. Bu maddelerden ikisi, KMTK'na dayalı çıkan sonuçlar ile tutarlıdır. MH yöntemine göre üç madde ise odak grup olan gizil sınıf-2'nin lehinedir. Maij-de Meij ve diğerleri (2010) çalışmalarında, gözlenen gruba dayalı FMF belirleme yöntemlerinden Lord'un ki-kare istatistiğinden, gizil sınıflar arasında FMF'yi belirlemek için ise Karma Rasch modelini kullanmışlardır. Çalışma sonucunda, gizil sınıflara göre belirlenen FMF'nin daha etkili olduğu, gerçek veriye dayalı sonuçlar ise gizil sınıf ve gözlenen grup yöntemlerinin birbirine yakın sonuç verdiğini göstermiştir. Bu çalışmada ise MH yöntemiyle KMTK sonuçlarının düşük düzeyde tutarlı olduğu ifade edilebilir. Yapılan analiz sonuçları genel olarak değerlendirildiğinde, bilinen gruplara göre FMF tespit edildiğinde o alt gruptaki tüm bireyler için maddenin avantajlı ya da dezavantajlı olduğunu ifade etmek zor olduğundan gizil sınıf yaklaşımının, FMF belirlemede kullanılması önerilmektedir.

Anahtar Sözcükler: farklılaşan madde fonksiyonu (FMF), FMF'nin nedenleri, Karma madde tepki kuramı, Mantel-Haenszel

Investigating the Performance of Omega Index According to Item Parameters and Ability Levels*

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ARTICLE INFO	ABSTRACT

Purpose: Several studies can be found in the literature that investigate the performance of ω under various conditions. However no study for the effects of item difficulty, item discrimination, and ability restrictions on the performance of ω could be found. The current study aims to investigate the performance of ω for the conditions given below. **Research Methods:** b parameter range was restricted in two levels (-2.50 – 0.00, 0.01 – 2.50); a parameter range, in two levels (0.10 – 0.80 and 0.81 – 1.50). After crossing a and b parameter ranges, four different item parameter cells were obtained. 10,000 examinee responses were generated for each item parameter cell for 20 items. After combining four data sets, an 80-itemdataset was obtained. In order to obtain the effects of source's and copier's ability levels to the performance of ω, ability range was divided into four intervals (-3.00 – -1.50, -1.50 – 0.00, 0.00 – 1.50 and 1.50 – 3.00). By crossing the ability ranges of source and copier, sixteen different combinations were obtained. Each of the sixteen ability pairs of source and copier cheating was investigated for item parameter crossing cells for power study of ω. For Type I error study, no cheating data were investigated for the same conditions and levels. **Findings:** Type I error inflations were observed for the lower copier ability levels. The results of the power study indicate that when high ability level copier copied answers of the low difficulty level and high discriminative items from high ability level source, power of ω was weakened. **Implications for Research and Practice:** The study suggests that researchers must pay attention to copiers - source ability level and copied items' difficulty levels while using ω index for detecting answer copying.

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Introduction

Multiple-choice items are frequently used for high-stakes examinations because of their particular advantages. Like any other examinations, reliability and validity of multiple-choice item tests are vital for making decisions about examinees. However, there are several threats to reliability and validity. One threat to validity is cheating. It is known that examinees often cheat in examinations. Technological developments, accelerated during the 21th century, combined with the creativity of examinees cause new ways of cheating in examinations. A subfield of measurement of test security domain upgraded itself as a reaction to new cheating ways, to protect the examination from cheating attempts before, during or after testing (mostly relevant with test security parts of testing organization). To escape unintended results of testing, testing organizations must be very careful about test security issues. The cost of weakness in test security will be very high for testing organizations. Despite test security sensitivity, testing organizations will still come across cheating. It is possible to detect cheating after examination in three distinct parts (Cizek and Wollack, 2017). The first part relates to answer copying - similarity – aberrance; the second part is item pre-knowledge; and the last part is unusual score gain and erasure detection.

Since systematic cheating is a big threat to validity, through the decades numerous methods have been developed to detect cheating (Bird,1927, 1929; Anikeef, 1954; Saupe, 1960; Angoff, 1974; Frary, 1993; Frary, Tideman and Watts, 1977; Hanson, Harris and Brennan, 1987; Bellezza and Bellezza, 1989; Bay, 1994; Harpp, Hogan and Jennings, 1996; Holland, 1996; Wollack, 1997; Wesolowsky, 2000; van Krimpen-Stoop and Meijer, 2001; Sotaridona and Meijer, 2002, 2003; van der Linden and Sotaridona, 2004, 2006; Giardano, Subhiyah and Hess, 2005; Sotaridona, van der Linden and Meijer, 2006; van der Ark, Emons and Sijtsma, 2008; Deng, 2008; Armstrong and Shi, 2009; Maynes, 2009; Belov and Armstrong, 2010; Clark, 2010; Hui, 2010; Belov, 2011; Shu, 2011; Wollack and Maynes, 2016). It should be noticed that the assumptions of these statistics are very important for their performance.

This study is related to the ω (omega) index, which is one of the most frequently-used answer copying statistics, due to its performance. Theoretical background of ω is given below:

ω Index

ω index computes the similarity of answer vectors of a given pair by comparing an observed match with an expected match (Wollack, 1997). ω index uses Nominal Response Model of Item Response Theory for probability calculations, which is required to obtain an expected match. It is possible to use Nominal Response Model to calculate the probability of selecting an option from a multiple-choice item for a given ability level.

To obtain the observed match of a given pair of suspected copier (C) and suspected source (S):

$$h_{CS} = \sum_{i=1}^{n} I[u_{iC} = u_{iS}]$$

where

h_{CS}: Observed Match

n: Number of Items

I: In the case of match=1 else 0

u_{iC}: Response of suspected copier to the ith item

u_{iS}: Response of suspected source to the ith item

To obtain the expected match of a given pair of suspected copier (C) and suspected source (S):

$$E(h_{CS}|\theta_C, U_S, \xi) = E\left[\sum_{i=1}^{n} I(u_{iC} = u_{iS}|\theta_C, U_S, \xi)\right] = \sum_{i=1}^{n} [P(u_{iC} = u_{iS}|\theta_C, U_S, \xi)]$$

where

$E(h_{CS}|\theta_C, U_S, \xi)$: Expected match

I: In the case of match I=1 else I= 0

u_{iC}: Response of suspected copier to the ith item

u_{iS}: Response of suspected source to the ith item

θ_C: Suspected copiers ability estimate

ξ: Item parameters (a and b for dichotomous responses, lambda and zeta for nominal responses)

Depending on the local independence assumption of Item Response Theory, h_{cs} is the sum of independent Bernoulli variables under the estimation of copier ability level, source ability level, and item parameters (Wollack, 1997). The probability of responses that are copied from source by copier and its variance are given below:

$$P(u_{iC} = u_{iS}|\theta_C, U_S, \xi)$$

and

$$[P(u_{iC} = u_{iS}|\theta_C, U_S, \xi)][1 - P(u_{iC} = u_{iS}|\theta_C, U_S, \xi)]$$

When the number of items approaches infinity, h_{cs} tends to show normal distribution, and ω distribution approaches standard normal distribution, for a given copier and source (Wollack, 1997).

Formula of ω is given below:

$$\omega = \frac{h_{CS} - E(h_{CS}|\theta_C, U_S, \xi)}{\sigma_{h_{CS}} - E(h_{CS}|\theta_C, U_S, \xi)} = \frac{h_{CS} - \sum_{i=1}^{n}[P(u_{iC} = u_{iS}|\theta_C, U_S, \xi)]}{\sqrt{\sum_{i=1}^{n} P(u_{iC} = u_{iS}|\theta_C, U_S, \xi)[1 - P(u_{iC} = u_{iS}|\theta_C, U_S, \xi)]}}$$

In summary: ω index is the standardized form of difference between the observed matches and expected matches of suspected copiers' and sources' responses.

$$\omega = \frac{\text{Observed Matches} - \text{Expected Matches}}{\text{Standard Error}}$$

Figure 1 shows the response probabilities of a given copier and source under Nominal Response Model of IRT for a multiple-choice test item. To compute ω statistic, response probabilities of each item is required. Figure 1 is used to explain the calculation of expected response probabilities.
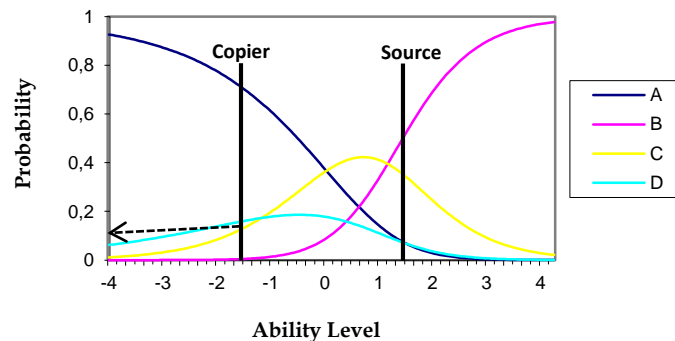
Figure 1. Response Probabilities of a Four-Option Multiple-Choice Item under Nominal Response Model

Let's say the suspected source has selected the option C. To obtain the expected value of the copier to select option C, a dashed line will be used.

A literature review for ω index is given below:

Wollack (1997) compared g_2 and ω indices in terms of answer copying type, sample size, test length, and amount of cheating (cheating ratio). The study showed that ω performed better than g_2 for all simulation conditions regarding Type I error rate and power.

Wollack and Cohen (1998) investigated the Type I error rates and power study of ω indices by using true and estimated ability parameters for sample sizes 100 and 500. The study showed that using estimated ability parameters instead of true ability parameters did not have a significant effect on Type I error rates. However, using estimated ability parameters instead of true ability parameters caused a slight decrease in power for the 100 sample size while remaining same power for the 500 sample size.

Sotaridona and Meijer (2002) compared K, $\overline{K}_1$, $\overline{K}_2$, and ω indices in terms of sample size, test length, and answer copying amount (ratio). The study showed that all indices performed well for Type I error rates. In addition, ω performed better than other

indices for power study. Another result of their study showed that, for cases which were not appropriate for ω, $\overline{K}_2$ performed better than K and $\overline{K}_1$ in terms of power.

Sotaridona and Meijer (2003) compared their S_1 and S_2 indices with K, $\overline{K}_2$, and ω in terms of sample size, test length, and amount of answer copying. Their study showed that S_1 was more powerful than $\overline{K}_2$. In addition, S_2 and ω indices were more powerful than other indices for answer-copying detection. In addition, with the appropriate estimate of item parameters from Nominal Response Model of Item Response Theory, ω performed better than other indices for any ability level of copier, and ω could be used for answer-copying detection for small sample sizes.

Wollack (2003) compared *Scrutiny!, K , g_2,* and ω. He showed that ω was the best performed index for all conditions.

Wollack (2006) suggested simultaneous use of $\overline{K}_2$, S_1, S_2, ω, H, and B indices. He showed that separate use of $\overline{K}_2$, S_1, S_2, ω, and B indices performed well for all nominal alpha levels (0.01, 0.005, 0.001, and 0.0005) in terms of Type I error rate; however, H index had higher Type I error rates. In addition, ω had best power study results among other indices. ω was followed by S_2 in terms of power rates. Simultaneous use of ω – H* pair performed better than other index combinations. S_2 was stated as the most powerful index when it was not possible to compute ω index.

Sotaridona et al. (2006) showed that Kappa statistics had satisfactory results for five-option multiple-choice tests that have 30 and 60 test lengths. However, Kappa statistics for answer-copying detection was found to be sensitive to the ability levels of copier and source. Kappa statistics got high Type I error rates for 0.05 nominal alpha levels when the ability of copier was close to ability level of source.

Zopluoglu and Davenport (2012) compared Type I error rates and power of ω and GBT by manipulating ability levels of copier and source. The study showed that GBT index was slightly more powerful than ω index. In addition, it was observed that both indices were sensitive to the amount of cheating, and they couldn't detect low amounts of answer copying. The power did not reach 0.50 unless the copier examinee copied 50% of the answers of the source examinee whose ability levels were greater than 1.00, or unless the copier examinee copied 80% of the answers of the source examinee whose ability levels were greater than 2.00.

Zopluoglu (2016) investigated the performance of ω, GBT, K, $\overline{K}_1$, $\overline{K}_2$, S_1, and S_2 indices for simulated and real response data sets by using different Item Response Theory Models(one- [1PL], two- [2PL], three-parameter [3PL] models, Nominal Response Model [NRM]) by the area under the receiver operating characteristic curve (ROC). In addition, difficulty of items that were copied (random copying and difficulty-weighted copying) and test difficulty (easy, medium) was taken into account in the investigation. The results of the study showed that using NRM outcomes for 20% answer copying increased the performance. Another finding from the study was the slight differences between the performance of indices for 40% and 60% answer copying ratio. In the medium-difficulty test, slight increase of performance was

observed for all conditions for the difficulty-weighted copying. Furthermore, consistencies were observed between the results of real and simulated data sets.

Purpose of the Study

The literature review shows several studies that investigate the performance of ω and compare its performance with other indices in terms of Type I error and power studies. The most recent studies investigated performance of several indices by crossing the ability levels for several amounts of copying and several types of tests and items. Only one study accounts for the properties of items which were copied. In addition to ability levels and amount of answer copying, item parameters are effective for the performance of answer-copying indices and need to be investigated, because item and ability restrictions might affect the similarity of responses of examinees. In this study, the effects of item parameters (a and b parameters) on the ω index will be investigated.

Method

Data Generation

For this study, a five-option multiple-choice raw data set was generated by using GEN3PL_RawDATA_V2 (Luecht, 2011) for an 80-item test length. Generation was conducted for 10000 examinees with standard normal ability distribution *N(0~1)*. The scaling constant D was set at1.00. Options were A, B, C, D, and E for all items. Range of item parameters (a and b) was divided into two categories: the a parameter ranged between (0.10 – 0.80) for low-discriminative items and between (0.81 – 1.50) for high-discriminative items. The b parameter ranged between (-2.50 – 0.00) for easy items and between (0.01 – 2.50) for difficult items. By crossing item parameter ranges, a four-cell table was obtained. The table regarding item parameter ranges is given below.

Table 1

Item Parameters for Item Groups

Item Parameters		b	
		-2.50 – 0.00	0.01 – 2.50
a	0.10 – 0.80	Item Group 1	Item Group 2
	0.81 – 1.50	Item Group 3	Item Group 4

20 items were generated for each item group cell and 4x20=80 items for the total test. Item Group 1 contains easy and low-discriminative items, Item Group 2 contains difficult and low-discriminative items, Item Group 3 contains easy and high-

discriminative items, and Item Group 4 contains difficult and high-discriminative items.

Procedure

To evaluate the ability level effects, ability range of examinees was divided into four categories (-3.00 – -1.50, -1.50 – 0.00, 0.00 – 1.50 and 1.5 – 3.00). By crossing ability levels for copier and source, a sixteen-cell table was obtained.

After crossing ability levels, sixteen different copier-and-source pair types were obtained. No cheating data was used for Type I error study. Cheating scenarios were implemented for each item group for the power study with 100 replications for three nominal alpha levels (0.05, 0.01, and 0.001). Amount of copying was held constant for the whole study. For the Type I error study, 16 different conditions were provided by ability crossing (4x4=16). With 100 replications, 16x100= 1600 honest pairs were examined by ω index. For the power study, simulation conditions are given in Table 2.

By crossing all conditions, 2x2x16x1x100=6400 pairs were investigated by ω index. Item parameter generation for given restrictions, ω index calculations, data and output management procedures were conducted by using R (2016) programming language. Graphs were obtained from Excel.

Table 2

Simulation Conditions for Power Study

Condition	Number of Levels	Level Values
Test Length	1	80
Item Difficulty (b parameter)	2	-2.50 – 0.00
		0.01 – 2.50
Item Discrimination (a parameter)	2	0.10 – 0.80
		0.81 – 1.50
Ability Range (Source and Copier)	4	-3.00 – -1.50
		-1.50 – 0.00
		0.00 – 1.50
		1.50 – 3.00
Amount of Copying	1	25%
Number of Replications	100	

Results

Type I Error Study

The results of the Type I error study are given in Figure 2. When we investigated Figure 2, it was observed that Type I error rates of ω index were generally close to or below related nominal alpha levels, with some exceptions.
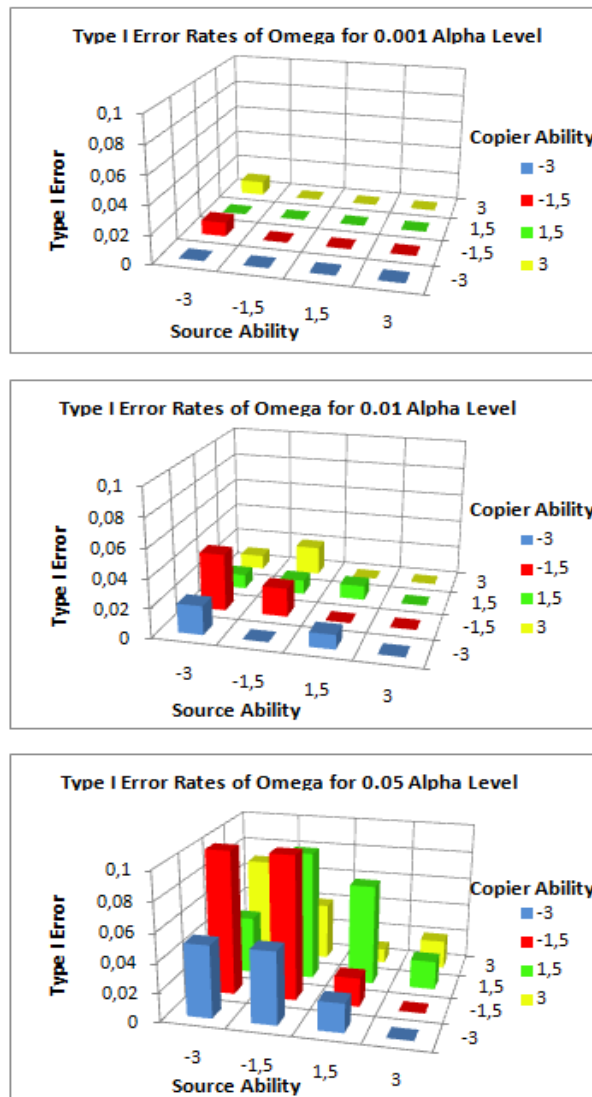

**Figure 2.** Results of Type I Error Study for 0.001, 0.01, and 0.05 Nominal Alpha Levels

Type I error rates ranged between 0.11 and 0.00. 0.11 error rates were observed when -1.50 – 0.00 ability range copiers cheated from source whose abilities were below 0.00. It shows that the ability range of the source is an important factor for Type I error rates, and lower source ability levels may inflate Type I error rates. Type I error rates for higher source ability levels seemed quite satisfactory, even with the high copier ability levels for all nominal alpha levels.

Power Study

The results of the power study are given below, separately for each item group.

Results for Item Group 1: Low-Discriminative and Easy Items

The results of the power study for item group 1 (low-discriminative and easy items)are given in Figure 3. When we observe Figure 3, it can be seen that power rates of the ω index range between 1.00 and 0.14. To summarize general tendency, power rates tend to decrease from 0.05 to 0.001 nominal alpha levels. Particularly for the 0.001 nominal alpha level, most of the results seem unsatisfactory in terms of power. An increase of power rate was observed to the low source ability levels, and best power rates for item group 1 are observed when the ability of the source ranged between -3.00 and -1.50. Another inference might be the decrease of copier ability levels, where the power rates tend to increase especially for 0.05 and 0.01 nominal alpha levels.
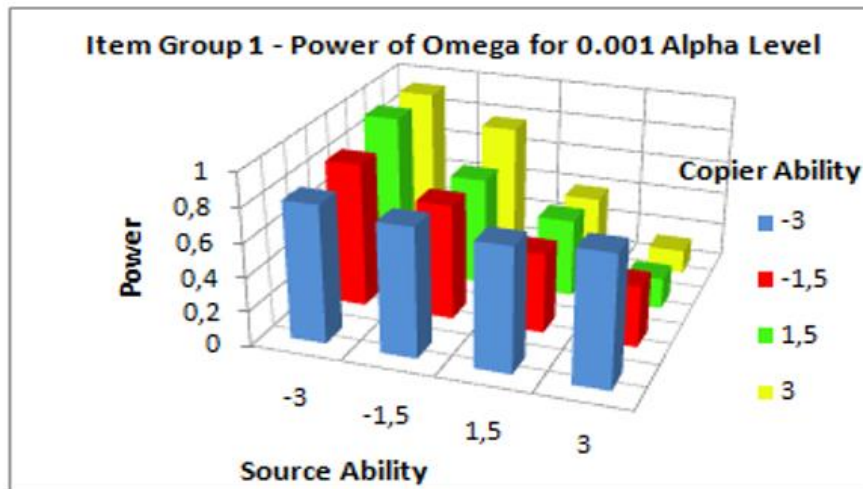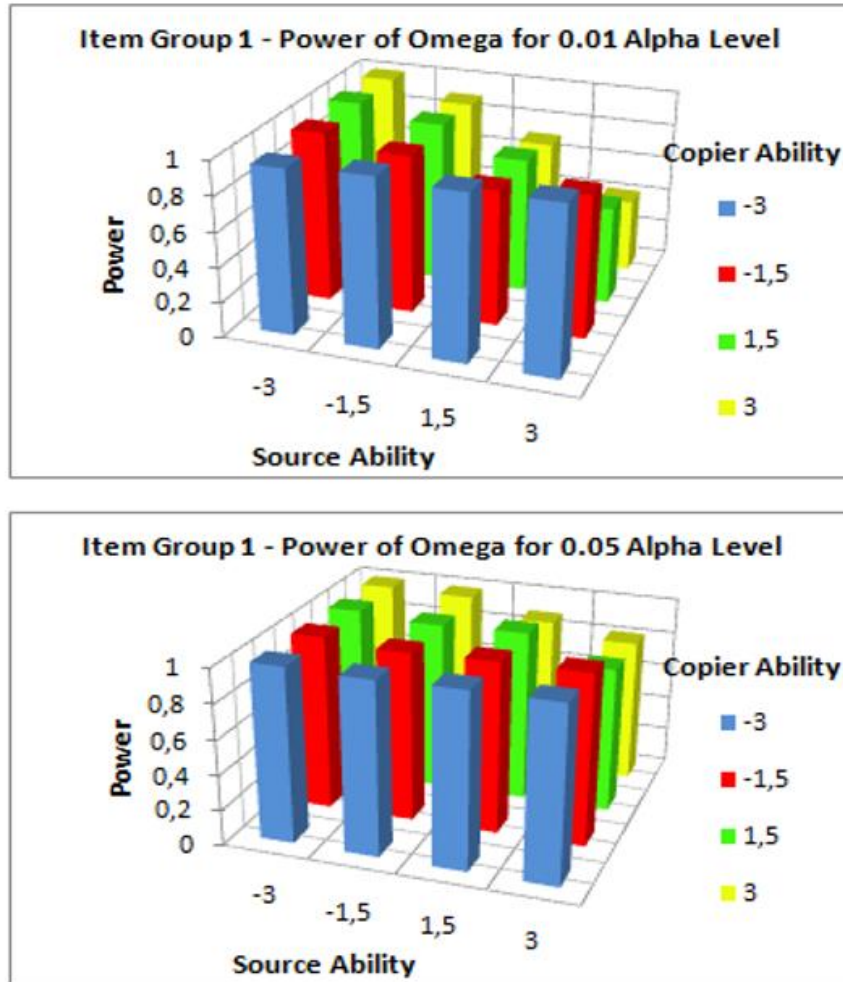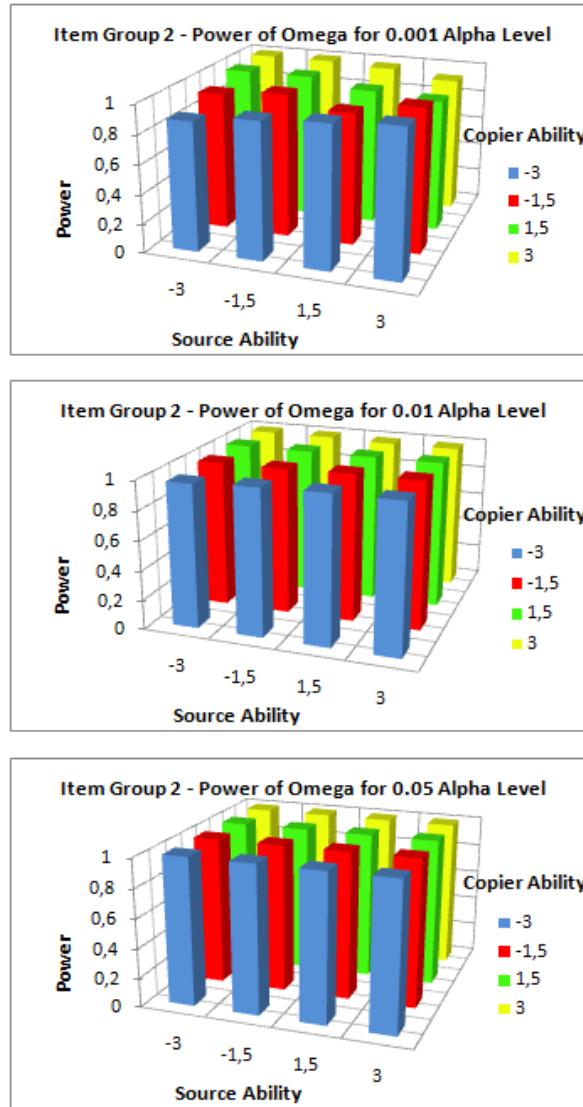
Figure 3. Results for Item Group 1 for 0.001, 0.01, and 0.05 Nominal Alpha Levels

Results for Item Group 2: Low-Discriminative and Difficult Items

The results of the power study for item group 2 (low-discriminative and difficult items) are given in Figure 4. When we observe Figure 4, it can be seen that power rates of the ω index ranged between 0.93 and 1.00. Nearly all power rates for all copier and source ability combinations were very close to 1.00. ω index performed very satisfactory for item group 2, despite the low-discriminations item statistics.

Figure 4. Results for Item Group 2 for 0.001, 0.01, and 0.05 Nominal Alpha Levels

Results for Item Group 3: High-Discriminative and Easy Items

The results of the power study for item group 3 (high-discriminative and easy items) are given in Figure 5.
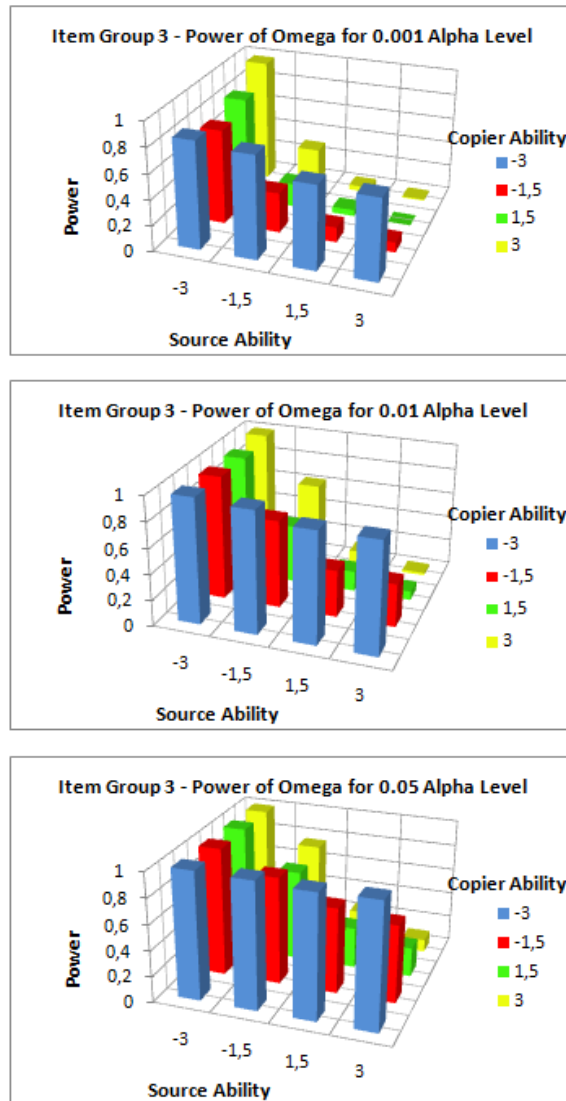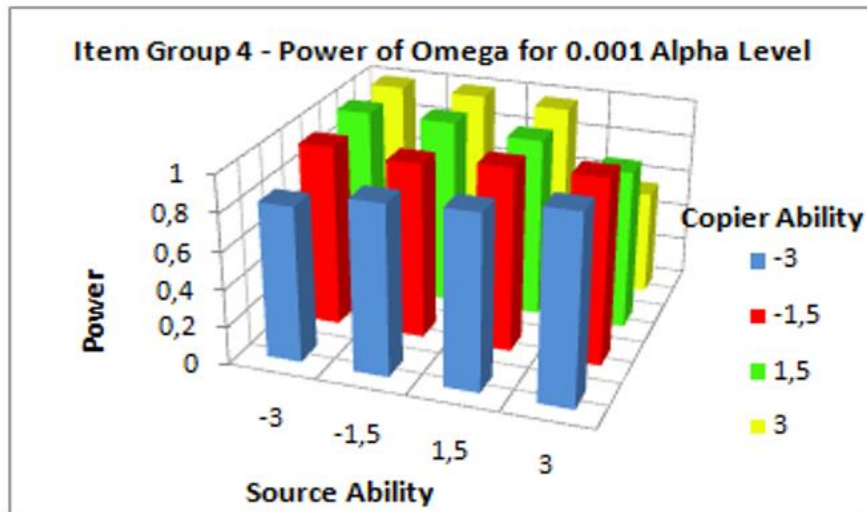

Figure 5. Results for Item Group 3 for 0.001, 0.01, and 0.05 Nominal Alpha Levels

When we observe Figure 5, it can be seen that power rates of the ω index ranged between 1.00 and 0.00. ω showed extremely bad performance for several condition cells. To summarize the general tendency, power rates tend to increase with the

decrease of copier ability levels and of source ability levels for all nominal alpha levels for item group 3. The best power rate results of the ω index were obtained when the ability range of copier and source were between -3.00 and 1.50. Other results for other ability combinations seem unsatisfactory for all nominal alpha levels. The only exception maybe the results for the conditions in which copiers' ability levels ranged between -3.00 and -1.50 for 0.05 nominal alpha level.

Results for Item Group 4: High-Discriminative and Difficult Items

The results of the power study for item group 4 (high-discriminative and difficult items) are given in Figure 6. When we observe Figure 6, it can be seen that power rates of the ω index ranged between 0.56 and 1.00. Most power rates for all copier and source ability combinations were very close to 1.00. ω index performed very satisfactorily for item group 4 between all the conditions of this research.
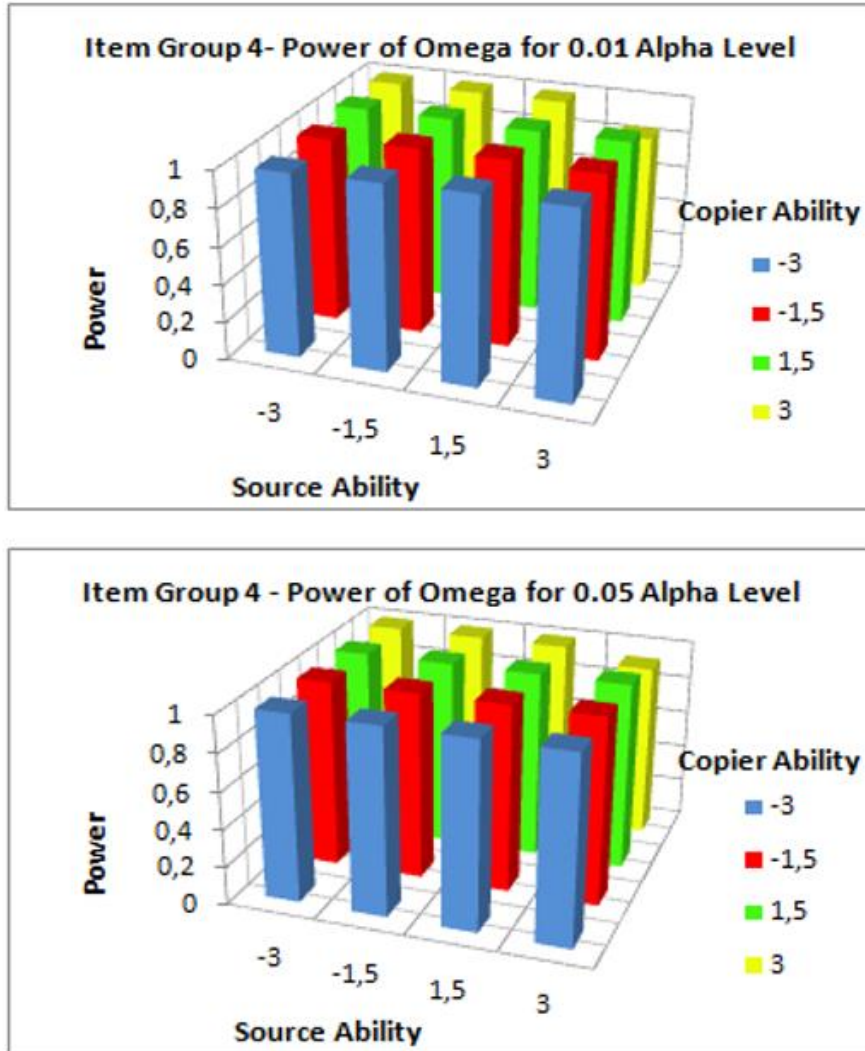
Figure 6. Results for Item Group 4 for 0.001, 0.01, and 0.05 Nominal Alpha Levels

Discussion and Conclusion

Type I error rates and power studies are vitally important in evaluating the importance of statistics or indices for decision making. ω index is one of the most popular indices for detecting answer copying. Several studies investigate and compare the performance of ω statistic with other answer-copying detection statistics. The literature review shows that test length, amount of copying, IRT model used for item parameter estimation, and ability levels of copying are effective for the performance

of the ω index. In this study, the amount of copying (25%) and the test length (80 items) were held constant, with focus on the interaction of copied item properties in term of item parameters as well as copier and source ability level crossings. Results of the Type I error study showed that the ω index performed well for nearly all research conditions for all nominal alpha levels with some exceptions. The highest Type I error rate 0.11 was obtained when -1.50 – 0.00 ability range copiers cheated from sources whose abilities were below 0.00.

Researchers should be careful when using the ω index to compare suspected copiers with low ability sources in terms of false positives. When we evaluated the power study results, it could be seen that item difficulty was very effective for the power study results. If the copiers copied from difficult items, the power of ω statistic accelerated immediately, and most of them were acceptable. However, copying the answers of easy items decreased the power immediately, and most of them were unacceptable. Best results for easy item cheaters were found when copiers' and sources' ability levels were between -3.50 and -1.50. Since easy items are more informative for low ability ranges, item information might cause the increase of power for low ability levels. When we evaluate the effect of the discrimination parameter, it was not as dominant as item difficulty. However, best results were obtained when copiers cheated from discriminative and hard items, and the worst results were obtained from discriminative and easy items. More research need to be conducted that integrates the different amounts of copying with test and item-information functions.

References

Angoff, W.H. (1974). The development of statistical indices for detecting cheaters. *Journal of American Statistical Association, 69*, 44-49.

Anikeef, A.M. (1954). Index of collaboration for test administrators. *Journal of Applied Psychology, 38*, 174-177.

Armstrong, R. D., & Shi, M. (2009). A parametric cumulative sum statistic for person fit. *Applied Psychological Measurement*, *33*(5), 391-410.

Assessment Systems Corporation (1993). *Scrutiny!: Software to identify test misconduct.* Advanced Psychometrics.

Bay, M. L. G. (1994). Detection of copying on multiple-choice examinations (Doctoral dissertation, Southern Illinois University, 1987). *Dissertation Abstracts International, 56(3-A)*, 899.

Bellezza, F.S., & Bellezza, S.F. (1989). Detection of cheating on multiple-choice tests by using error-similarity analysis. *Teaching of Psychology, 16*, 151-155. *British Journal of Arts and Social Sciences ISSN: 2046-9578* 59.

Belov, D. I. (2011). Detection of answer copying based on the structure of a high-stakes test. *Applied Psychological Measurement*, 35(7), 495–517.

Belov, D. I., & Armstrong, R. D. (2010). Automatic detection of answer copying via kullback-leibler divergence and K-index. *Applied Psychological Measurement*, 34(6), 379–392.

Bird, C. (1927). The detection of cheating in objective examinations. *School and society, 25*, 261-262.

Bird, C. (1929). An improved method of detection cheating in objective examinations. *Journal of Educational Research, 25*, 261-262.

Cizek, G. J., & Wollack, J. A. (2017). *Handbook of quantitative methods for detecting cheating on tests*. New York, NY: Routledge.

Clark, J. M. (2010). *Aberrant response patterns as a multidimensional phenomenon: Using factor-analytic model comparison to detect cheating*. *ProQuest LLC*. University of Kansas.

Deng, W. (2008). An innovative use of the standardized log-likelihood statistic to evaluate person fit. Dissertation Abstracts International Section A: Humanities and Social Sciences. Rutgers State University of New Jersey.

Frary, R. B. (1993). Statistical detection of multiple-choice answer copying: Review and commentary. *Applied Measurement in Education, 6*, 153-65.

Frary, R. B., Tideman, T. N., & Watts, T. M. (1977). Indices of cheating on multiple-choice tests. *Journal of Educational Statistics, 6*, 152-165.

Hanson, B. A., Harris, D. J., & Brennan, R. L. (1987). A comparison of several statistical methods for examining allegations of copying (ACT Research Report Series No. 87-15). Iowa City, IA: American College Testing.

Harpp, D.N., Hogan, J.J., & Jennings, J.S. (1996). Crime in the classroom – Part II, an update. *Journal of Chemical Education*, 73(4), 349-351.

Holland, P.W. (1996). Assessing unusual agreement between the incorrect answers of two examinees using the K-index: statistical theory and empirical support (Research Report RR-94-4). Princeton, NJ: Educational Testing Service.

Hui, H.-fai. (2010). *Stability and sensitivity of a model-based person-fit index in detecting item pre-knowledge in computerized adaptive test. Dissertation Abstracts International Section A: Humanities and Social Sciences*. University of Hong Kong.

Luecht, R. M. (2011). *Gen3PL Raw Data (Version 2)*. Greensboro, NC: [Author].

Maynes, D. D. (2009, April). *Combining statistical evidence for increased power in detecting cheating*. Presented at the annual conference of the National Council on Measurement in Education, San Diego, CA.

Saupe, J.L. (1960). An empirical model for the corroboration of suspected cheating on multiple-choice tests. *Educational and Psychological Measurement, 20*, 475-489.

Shu, Z. (2011). *Detecting test cheating using a deterministic, gated item response theory model*. (Doctoral dissertation, The University of North Carolina at Greensboro, 2010). *Dissertation Abstracts International Section A: Humanities and Social Sciences*.

Sotaridona, L.S., & Meijer, R.R. (2002). Statistical properties of the K-index for detecting answer copying. *Journal of Educational Measurement*, *39*, 115-132.

Sotaridona, L. S., & Meijer, R. R. (2003). Two new statistics to detect answer copying. *Journal of Educational Measurement, 40*, 53-69.

Sotaridona, L.S., van der Linden, W.J., & Meijer, R.R. (2006). Detecting answer copying using the kappa statistic. *Applied Psychological Measurement, 30*, 412-431.

R Core Team. (2016). R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from http://www.R-project.org/

van der Linden, W. J., & Sotaridona, L.S. (2004). A statistical test for detecting answer copying on multiple-choice tests. *Journal of Educational Measurement, 41*, 361-378.

van der Linden, W. J., & Sotaridona, L.S. (2006). Detecting answer copying when the regular response process follows a known response model. *Journal of Educational and Behavioral Statistics, 31*, 283-304.

van Krimpen-Stoop, E. M. L. A., & Meijer, R. R. (2001). CUSUM-based person-fit statistics for adaptive testing. *Journal of Educational and Behavioral Statistics*, *26*(2), 199–217.

Wesolowsky, G. O. (2000). Detecting excessive similarity in answers on multiple choice exams. *Journal of Applied Statistics, 27(7),* 909-921.

Wollack, J. A. (1997). A nominal response model approach to detect answer copying. *Applied Psychological Measurement, 21*, 307-320.

Wollack, J. A. (2003). Comparison of answer copying indices with real data. *Journal of Educational Measurement*, *40*, 189-205.

Wollack, J. A. (2006). Simultaneous use of multiple answer copying indexes to improve detection rates. *Applied Measurement in Education, 19*, 265-288.

Wollack, J. A., & Cohen, A. S. (1998). Detection of answer copying with unknown item and trait parameters. Applied Psychological Measurement, 22, 144-152.

Wollack, J. A., & Maynes, D. D. (2017). Detection of test collusion using cluster analysis. In G. J. Cizek and J. A. Wollack (Eds.), *Handbook of quantitative methods for detecting cheating on tests* (pp. 124-150). New York, NY: Routledge.

Zopluoglu, C. (2016). Classification performance of answer-copying indices under different types of irt models. *Applied Psychological Measurement, 40* (8), 592-607.

Zopluoglu, C., & Davenport, E.C., Jr. (2012). The empirical power and type I error rates of the GBT and ω indices in detecting answer copying on multiple-choice tests. *Educational and Psychological Measurement*, *1-26*.

Madde Parametreleri ve Yetenek Düzeylerine göre Omega İndeksinin Performansının İncelenmesi

Özet

Problem Durumu: Çoktan seçmeli maddeler sağlamış olduğu birtakım avantajlardan dolayı geniş ölçekli sınavlarda sıkça kullanılmaktadır. Bütün sınavlarda olduğu gibi çoktan seçmeli maddelerden oluşan testlerin de geçerlik ve güvenirliği bireyler hakkında karar vermede oldukça önemli bir role sahiptir. Sınav süreçlerinde bireylerin çeşitli şekillerde kopya çekme davranışı gösterme eğiliminde olduğu bilinmektedir. 21. yüzyılda teknoloji giderek ivmelenen bir şekilde gelişim göstermiştir. Teknolojide meydana gelen bu gelişmelerin bireylerin yaratıcılığı ile birleşmesi ve bireyler arasındaki rekabetin artması sonucu çok çeşitli kopya çekme türleri ortaya çıkmıştır. Testin uygulanması öncesinde, test uygulaması sürecinde ve sonrasında oluşabilecek hile karıştırma girişimlerini engellemek ağırlıklı olarak test güvenliğini ilgilendiren süreçlerdir. İstenmeyen bir durum oluşmaması adına test güvenliği üzerinde hassasiyetle durulmalıdır. Eğer gerekli hassasiyet gösterilmezse, doğacak sonuçların maliyeti ağır olabilmektedir. Bu hassasiyete rağmen bir kopya durumu oluştuğu takdirde, kopyayı tespit edebilmek için alternatif yol arayışlarına girilmiştir ve birçok kopya belirleme yöntemi geliştirilmiştir. Bu yöntemlerin en çok itibar edilenleri istatistiksel yöntemlerdir. İstatistiksel yöntemlerin performansına yönelik yapılan araştırmalarda ise madde tepki kuramına dayalı olan ω indeksinin kopya belirlemede öne çıktığı görülmüştür. Alanyazında ω indeksinin hangi koşullar altında çalıştığını incelemek üzere çeşitli araştırmalar bulunmaktadır. Aynı zamanda I. Tip hata oranı ve gücü bu koşullar altında diğer indekslerle karşılaştırılmıştır. Bunlardan çoğu çeşitli örneklem büyüklüğü, test maddesi ve kopya oranı ile bireylerin yetenek düzeyleri çaprazlanarak ω indeksinin performansı ortaya konmaya çalışılmıştır.

Araştırmanın Amacı: Bu çalışmanın amacı alanyazında henüz ortaya konmayan ω indeksinin madde güçlük, madde ayırt edicilik ve yetenek sınırlandırmaları altındaki performansını incelemektir.

Araştırmanın Yöntemi: Çalışmada beş seçenekli çoktan seçmeli 80 maddeden oluşan veri seti GEN3PL_Raw DATA_V2 yardımıyla elde edilmiştir. Veri standart normal yetenek dağılımına *N(0~1)* sahip 10000 birey için üretilmiştir. Ölçekleme sabiti olan D ise 1.00 olarak alınmıştır. a ve b madde parametreleri iki kategoriye ayrılarak incelenmiştir. a parametresinde düşük ayırt edici maddeler için (0.10 – 0.80) aralıkları, yüksek ayırt edici maddeler için (0.81 – 1.50) aralıkları ele alınmıştır. b parametresinde kolay maddeler için (-2.50 – 0.00) aralıkları, zor maddeler için (0.01 – 2.50) aralıkları ele alınmıştır. Parametre aralıkları çaprazlanarak dört hücreli tablo elde edilmiş ve böylece dört farklı madde grubu ortaya çıkmıştır. Her bir madde grubu için 20 maddelik veri üreterek toplamda 4x20=80 maddelik veri seti elde edilmiştir. 1. Madde Grubu kolay ve düşük ayırt edici maddelerden, 2. Madde Grubu zor ve düşük ayırt edici maddelerden, 3. Madde Grubu kolay ve yüksek ayırt edici maddelerden ve 4. Madde Grubu zor ve yüksek ayırt edici maddelerden oluşmaktadır.

Kaynak ve kopyacı bireyin yeteneğinin, *ω* indeksinin performansı üzerine etkisini incelemek için (-3.00 – -1.50, -1.50 – 0.00, 0.00 – 1.50, 1.50 – 3.00) olmak üzere dört kategoriye ayrılmıştır. Kopyacı ve kaynak çifti için yapılan çaprazlamalar sonucu oluşan 16 hücre için kopya durumu oluşturup her bir veri için indeksin gücü incelenmiştir. I. Tip hata için ise kopya durumu oluşturulmadan inceleme yapılmıştır. İşlemler için 100 replikasyon yapılmıştır. Her replikasyondan elde edilen sonuçlar kullanılarak belirlenen α düzeylerine (0.001, 0.01 ve 0.05) göre indeksin I. Tip hata oranları ve kopya belirleme güçleri hesaplanmıştır. I. Tip hata çalışmasında 16 farklı koşulla 100 replikasyon sonucunda 16x1000= 16000 kopya çekmeyen birey çifti için *ω* indeksine ait çıktılar elde edilmiştir. Güç çalışmasında ise sabit kopya oranı (%25) ile 2x2x16x1x100=6400 birey çifti için çıktılar elde edilmiştir. Madde parametrelerinin üretimi, *ω* indeksinin hesaplanması ve veri ve çıktıların elde edilmesinde R programlama dili kullanılmıştır.

Araştırmanın Bulguları: I. Tip hata çalışmasında elde edilen bulgulara göre *ω* indeksinin I. Tip hata oranı ilgili alfa düzeyine genellikle yakın ya da altında değerler almıştır. Bu değerler 0.11 ile 0.00 arasında değişmektedir. I. Tip hata oranının 0.11 olduğu durumlar, -1.50 – 0.00 yetenek aralığında yer alan kopyacının 0.00 altındaki yetenek düzeyine sahip kaynaktan çektiği kopya durumlarında gözlenmiştir.

Güç çalışması sonucunda kolay ve düşük ayırt edici maddelerden oluşan 1. madde grubundan elde edilen bulgulara göre indeksin gücü 1.00 ve 0.14 arasında değişmektedir. Alfa düzeyi 0.05'ten 0.001'e düştükçe güçte azalma eğiliminin olduğu görülmektedir. Düşük yetenek düzeyine sahip kaynağın yer aldığı kopya durumlarında güç bir miktar artmakta ve en yüksek gücün kaynağın yetenek düzeyinin 3.00 ve -1.50 aralığında olduğu durumlarda gözlenmiştir. 0.05 ve 0.01 alfa düzeyinde kopyacının yetenek düzeyinin düştüğü durumlarda güçte artışın olduğu görülmektedir.

Madde grubu 2'de ise düşük ayırt edici maddeler olmasına rağmen tüm kopyacı ve kaynağın yetenek düzeylerinin çaprazlanmasında *ω* indeksinin gücünün 1.00'e yakın olduğu ortaya çıkmıştır.

Kolay ve yüksek ayırt edici maddelerin yer aldığı madde grubunda ise indeksin gücünün genelde oldukça düşük olduğu görülmüştür. Kaynağın yetenek düzeyinin arttığı ve kopyacının yetenek düzeyinin azaldığı kopya durumlarında gücün artma eğiliminde olduğu ve kopyacı ve kaynak çiftinin yetenek düzeyi -3.00 ile 1.50 aralığında iken gücün bu grupta en yüksek değerler aldığı ortaya çıkmıştır. Diğer koşullarda ise sadece 0.05 alfa düzeyinde -3.00 ve -1.50 yetenek düzeyi aralığı haricinde tüm alfa düzeyinde ve tüm koşullarda ω indeksinin performansının düşük olduğu görülmüştür.

Zor ve yüksek ayırt edici maddelerin kopya çekildiği durumlarda ise ω indeksinin gücü 0.56 ile 1.00 arasında değişmektedir. Birey çiftlerinin yetenek düzeylerine ait kombinasyonların tümünde çoğunlukla gücün 1.00'e yakın olduğu ortaya çıkmıştır.

Araştırmanın Sonuçları ve Önerileri: ω indeksinin I. Tip hata oranı bazı durumlar haricinde tüm koşullar ve tüm alfa düzeylerinde birbirine yakın ve düşük değerler almıştır. Ancak özellikle kopyacının yetenek düzeyinin düşük olduğu durumlarda I. Tip hata oranında fazla artışın olduğu görülmektedir. Araştırmacılar düşük yetenek düzeyine sahip kaynağın yer aldığı kopya durumlarında ω indeksini kullanırken dikkatli olmalıdırlar. Güç çalışması sonucunda ise madde güçlüğünün indeksin gücünü oldukça etkilediği görülmektedir. Kolay maddelerde çekilen kopyayı belirlemede indeksin gücünde anlamlı bir azalmanın olduğu ortaya konmuştur. Kolay maddeden kopyanın çekildiği durumlarda en iyi sonuçlar kopyacı ve kaynağın yetenek düzeyinin -3.50 ile -1.50 aralığında olduğunda ortaya çıkmıştır. Madde ayırt ediciliğin ise güçlük kadar indeksin gücünde etkili olmadığı ortaya çıkmıştır. Ancak ω indeksi, ayırt edici ve zor maddelerden çekilen kopyayı belirlemede en güçlü, ayırt edici ve kolay maddelerden çekilen kopyayı belirlemede ise en zayıf olduğu görülmüştür.

Anahtar Kelimeler: Cevap kopyalamayı belirleme, hile, test güvenliği.

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