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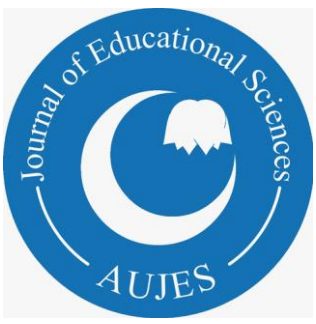

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The Participation and Planning of the Instruction Competencies of Teacher Candidates in the Blended Curriculum Development in Education Course

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Abstract

This study aimed to predict the final scores of teacher candidates through grades obtained from competency in preparing lesson plans, the number of reflections on the discussion board, and the perceived level of proficiency in planning the instruction in the blended Curriculum Development in Education course. This study was designed according to relational survey research design and included 147 teacher candidates. In the study, data were collected through lesson plans, the number of reflections on the discussion board, final scores, and the perception of proficiency in planning the instruction scale and analyzed using the Multiple Linear Regression analyzes. This study found positive and significant correlations among the final grades of teacher candidates, grades obtained from competency in preparing lesson plans, the number of reflections on the discussion board, and the perceived proficiency of teacher candidates in the planning the instruction scale. However, only the grades of teacher candidates obtained from lesson plans significantly predicted the achievement of teacher candidates. It might be inferred that as teacher candidates participated in online discussions, they learned the subjects deeply, prepared better plans, and obtained higher grades from the preparation of lesson plans and final exam.

Keywords: Blended Learning, Curriculum Development in Education Course, Online Discussion, Teacher Competencies

Introduction

The education system consists of important components that complement each other, and if one of them fails, this affects other components and leads to the change of the entire system. One of these important components of the education system is the teacher. A qualified teacher is also an indicator of qualified education (Karagoz et al., 2017).

Moreover, within the scope of the teaching profession, teachers are expected to be experts in their field, in other words, they must have obtained professional competencies (Hagger & McIntyre, 2006; McDiarmid & Crevenger-Bright, 2008). While professional knowledge is more about having field knowledge, professional skills are related to the skills of planning, managing, coordinating, creating learning environments, teaching and learning processes, methods, techniques, materials, and measurement and evaluation (McDiarmid & Clevenger-Bright, 2008, p. 134). In the literature, some of the qualifications of teachers were explained as content knowledge, pedagogical knowledge, and the use of teaching skills (Bransford et al., 2005; Caena, 2011). Furthermore, the Interstate Teacher Assessment and Support Consortium (InTASC) (2013) stated some of the teacher qualifications as ‘content knowledge’, ‘planning of teaching’, and ‘instructional strategies’. InTASC (2013) explained ‘planning of teaching’ as the skills of teachers to plan instruction by including content knowledge, curriculum, interdisciplinary skills, teacher’s professional knowledge as well as knowledge of students and society to achieve the desired level of educational objectives for each student (Council of Chief State School Officers, 2013). Besides, teacher competencies proposed by the European Commission (2013) stressed the ‘content knowledge’, ‘planning, managing and coordination of teaching’ and ‘using teaching materials and technologies’ as some of the important competencies.

In Turkey, the Teaching Profession General Competencies document of the Ministry of National Education-MONE (2017) defines some of the important competencies of teacher properties as ‘planning of instruction, preparation of materials, organizing learning environments organizing extra-curricular activities, etc.’ Erden (2017) classifies the professional qualifications of the teacher as "general culture, subject area knowledge, professional skills, and competencies", while the professional skills and competencies are "planning the teaching process, bringing diversity, using the teaching time effectively, organizing the teaching environment according to the needs of participants and monitoring the development of students ”. The common skill among all these pre-mentioned different explanations is the teachers’ planning competencies.

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Planning the instruction is the best way to organize a lesson or unit for effective instruction and it is among the most important aspects of teaching since it is one of the major determinants of what is taught in schools and how it is taught (Arends, 2012; Li & Zou, 2017; Sprinthall, & Sprinthall, 1990). Lesson plans reveal the beliefs, understandings, and orientations of teachers about the curriculum, the subject in question, the learners, pedagogy, etc. (Davies & Rogers, 2000; Li & Zou, 2017). In other words, lesson or activity planning is central to the professional role of the teacher in reflecting on the personal theory and professional thinking (Davies & Rogers, 2000). Accordingly, Oguz (2009) stated that the lesson plans prepared by the teachers who implement the discovery learning approach and the lesson plans prepared by the teachers who teach through presentation or implement multiple intelligence theory will have different characteristics. Planning aims to ensure the realization of goals and objectives of education by providing learners with more permanent, meaningful, and effective learning opportunities (Arends, 2012; Davran, 2020; Pelton, 2007). According to Farrell (2013), teachers plan lessons for the efficiency of instruction, to respond to the needs, challenges, and interests of learners, to preclude some problems before they arise, and to carry on smoother courses. Moreover, planning instruction is about developing a lesson plan that guides teachers' professional teaching experiences by transforming the factual, conceptual, and operational knowledge learned in faculties of education into models based on their understanding (Kablan, 2012). A lesson plan is defined as a plan that indicates one or several lesson purposes, content, teaching- learning principles, teaching methods, materials, discussion questions, assignments, and evaluation procedures (Karagoz et al., 2017). As stated in the previous definitions, defining the objectives of the course, content, learning-teaching principles, methods, materials, discussion questions, assignments, and evaluation procedures are the topics of the Curriculum Development in Education course. The teacher candidates learn about planning first in this course and implement their plans in the teaching practicum course.

Moreover, Tsui (2009) added to the importance of planning the instruction in dealing with the multidimensionality, simultaneity, immediacy, and unpredictability of classroom events. In other words, careful planning of instruction can enable the smooth execution of lessons. In this direction, the lesson plans can be seen similar to a road map since they make a significant professional contribution for increasing the efficiency of teaching, preventing undesirable behaviors in the classroom, and managing time effectively (Arends, 2012; Demirel, 2017). Teachers are encouraged to plan their lessons comprehensively since defined goals help the teacher to determine the proper methodology for the subject matter to foster the teaching-learning process (Dorgu, 2015). In addition to these, planning the instruction provides emotional confidence to teachers and enables them to monitor, evaluate and correct their teaching activities (Karagoz et al., 2017; Senemoğlu, 2015).

In terms of planning, there are different theoretical and practical studies conducted in the literature (Asiroglu & Koc-Akran, 2018; Atik-Kara & Saglam, 2014; Karagoz et al., 2017; Toman & Basaran, 2019). While the results of some studies revealed that the courses conducted according to lesson plans yielded more clear and effective results (Li & Zou, 2017; Yurtseven, 2019), others revealed negative attitudes or lack of knowledge of teacher candidates in terms of planning. Karagoz et al., (2017) found that teacher candidates had difficulties in writing the parts of plans such as drawing the attention of students, the transition to the lesson, teaching the lesson with activities and evaluation. Also, their plans lacked harmony in terms of the components of planning. Similarly, Çolak and Yabaş (2017) discovered that, while teacher candidates attempted to incorporate constructivist elements into their plans, they were unable to implement an instructional process compatible with constructivism. Furthermore, Tatar and Ceyhan (2018) revealed that teacher candidates had a lack of knowledge in terms of implementing the curriculum in the Teaching Practicum course, ignored the misconceptions of students related to the Science course during the planning and implementation phases, and mostly preferred teacher-centered teaching methods and techniques. Similarly, Davran (2020) concluded that teacher candidates mostly preferred the presentation, besides the question-answer technique in their lesson plans, and their tendency to use traditional methods was prevalent. Yurtseven (2019) revealed some of the weaknesses of teacher candidates as transferring knowledge to the planning process, and a lack of awareness about planning. In addition, Oguz (2009) investigated the views of 122 English teacher candidates who were studying at the Certificate Program in English Language Teaching, about preparing lesson plans. According to responses, more than half of English teaching teacher candidates preferred using ready-made plans, and half of them thought that experienced teachers did not need to prepare a written plan every day. Besides, the majority of teacher candidates agreed that plans prepared by teachers could not be implemented effectively because they were full of unnecessary and showpiece knowledge, and most of the prepared plans were not functional in practice. Similarly, in the study conducted by Farrell (2013), teachers found spending much time planning a lesson a waste of time.

However, the results of the research indicated that the competency levels of the teacher candidates in lesson planning positively affected their implementation skills (Asıroglu & Koc-Akran, 2018; Kablan, 2012; Unver, 2002). Moreover, teacher candidates' cognitive learning and experiences were reflected in preparing lesson plans as well as in the lesson plan implementation skills. In addition, with the changing curricula in 2005,

teachers' guidebooks replaced the obligation to prepare lesson plans for teachers (MONE, 2005). Teacher guidebooks are supplementary materials that show how the lesson will be handled, how the activities in the textbooks will be applied, and which of these activities correspond to the objectives in the curricula. However, the execution of some of the elective courses and extra-curricular activities depends on the planning skills of teachers (Karagoz et al., 2017) which again shows the importance of teachers' planning competencies and skills. For these reasons, it is considered important that planning has an important place in the development of teachers' professional competencies. For this reason, the planning competencies of teacher candidates were investigated concerning their course knowledge (about the components of planning) and course activities that are conducted to strengthen their knowledge about planning the instruction and lesson plan preparation skills in the Curriculum Development in Education course. In this sense, it is thought important to investigate the course knowledge levels of teacher candidates according to the parts of plans: objectives, content organization, teaching-learning processes, and assessment, and by planning the Curriculum Development in Education course according to blended learning, teacher candidates were provided with opportunities to practice course content outside the class.

Blended Learning

Blended learning combines the benefits of traditional classroom learning and online learning into an enhanced teaching method (Jonker et al., 2020; Cheung & Hew, 2011). Many studies about planning the instruction were conducted in courses including only the face-to-face part (Asıroglu and Koc-Akran, 2018; Kablan, 2012; Unver, 2002; Zafeiriou et al., 2001). However, course time is limited to present concepts and includes activities and group work. Moreover, as stated by Talbert (2014), traditional teacher training classes mostly provide limited time for instructors outside of the classroom to answer the questions of learners and correct their mistakes while they are working on a task. For this reason, in the current study, it was thought that by including an online component through online discussions, teacher candidates would have opportunities to practice theoretical learning conducted in class and communicate with the instructor and their peers in terms of asking questions and receiving feedback, as also stated by Hrastinski (2007). This would, in turn, provide time for in-class activities and increase learning.

By including an online part, learners can access online materials wherever they want, whenever they have time, and have the opportunity to store all the dialogs conducted among instructors and students (Ebrahimi et al., 2016; Fleming, 2008; Jonker et al., 2020; Zafeiriou et al., 2001). Online learning environments are suitable for reflection and discussion of complex ideas thanks to the increased communication and social exchange among instructors and students (Alzahrani, 2017; Cheung & Hew, 2011; Fleming, 2008; Hrastinski, 2007; Zheng & Warschauer, 2015). Furthermore, since learners exchange text-based messages through discussion boards, they have more time to think, search, and reflect before contributing to the discussions (Branon & Essex, 2001; Brooks & Jeong, 2006; Fleming, 2008), which promote problem-solving and critical thinking skills (Cheung & Hew, 2011; Ebrahimi et al., 2016). On the other hand, during traditional discussions, there is often insufficient time for students to structure their responses to questions asked in class, which mostly results in shallow and less critical contributions (Fleming, 2008; Hew & Cheung, 2003). It was revealed that online learning improved student learning and achievement in a wide variety of courses and countries, besides other cognitive and affective variables (Alzahrani, 2017; Ryan, 2013; Seethamraju, 2014; Zheng & Warschauer, 2015).

Sing & Khine (2006) integrated an asynchronous communication platform to develop the understanding of teachers about information technology integration. In this sense, teachers prepared lesson plans individually, and they shared them on the asynchronous communication platform to take the ideas of other teachers through posting. In this way, they could connect the lesson plan content to their readings and refine them. In the asynchronous online course from three universities in Taiwan, Wei et al. (2015) revealed the direct effect of education students' number of postings on the discussion board on students' online learning performance (online-discussion scores, exam scores, and group-project scores) in the asynchronous online course. However, Song and McNary (2011) found no correlation between the number of posts and student achievement in a graduate-level online course. Similarly, Cook and Germann (2010) found that the number of postings to discussions did not correlate significantly with the final grades for the upper-level course for advanced majors. It can be seen that there is not enough satisfaction with the findings of studies to be able to say exactly what contribution online discussions has on teacher candidates' online learning performance, such as the grades they obtain from the final exam, lesson plan preparation, number of reflections on the discussion board, and perception of proficiency in planning. For this reason, in the current study, the planning the instruction competencies of teacher candidates were also investigated in relation to the number of reflections on the discussion board. In other words, this study also investigated the relationship between the participation levels of teacher candidates in the online part of the course and their planning competencies, course knowledge, and planning the instruction perceptions in the blended Curriculum Development in Education course.

Purpose and Importance

This study aimed to investigate the planning the instruction competencies of sophomore teacher candidates' in the blended Curriculum Development in Education course and, consequently, to predict the final scores of teacher candidates through the lesson plan grades, the number of reflections on the discussion board, and the scores obtained from the perception of proficiency in planning the instruction scale. For this purpose, the answer to the following question was sought:

How well do the lesson plan grades, the number of reflections on the discussion board, and the scores obtained from the perception of proficiency in planning the instruction scale predict the final scores of teacher candidates in the Curriculum Development in Education course?

Method

In this study, a relational survey research design was implemented (Cohen et al., 2007; Fraenkel & Wallen, 2009) to predict the final scores of teacher candidates through the lesson plan grades, the number of reflections on the discussion board, and perception of proficiency in planning the instruction scale.

Study Group

The study was conducted in the fall semester of the 2019-2020 education year at a state university located in the Aegean Region in Turkey. In this study, the convenience sampling method, which is a type of purposive sampling method, was employed to choose teacher candidates from those who were easy to reach and suitable for the purposes of the study (Cohen et al., 2007; Gall, et al., 2003). Among 147 teacher candidates, 104 (70.7%) were female and 43 (29.3%) were male. Moreover, the distribution of 147 teacher candidates according to their department was shown in Table 1.

Table 1. The Distribution of Teacher Candidates according to their Departments

Department	f	%
Psychological Counselling and Guidance Department	45	30.6
Elementary School Mathematics Teaching Department	22	15.0
Turkish Language Teaching Department	22	15.0
Social Sciences Teaching Department	26	17.7
Classroom Teaching Department	32	21.8
Total	147	100

Data Collection

This study was conducted at an Educational Sciences course called Curriculum Development in Education which is a two-hour elective course for teacher candidates who enrolled in any departments of Faculties of Education in Turkey. In this study, the course included both face-to-face and online discussion dimensions, and the Course Management System, discussion board-Edmodo was used. The activities conducted inside and outside of the class were shown in Table 2.

Table 2. The Activities Conducted Inside and Outside of the Class

Weeks	Subject	*The Activities Conducted Inside and Outside of the Class*
1	Orientation week	• Information about the course applications and materials was provided. • Membership from the course management system-Edmodo was provided.
2	Basic concepts related to curriculum development	• Group discussion about concepts related to curriculum development. • Completion of group assignment about basic educational concepts (Examples about teaching, learning, formal, informal education, curriculum).
3	Types of curriculum, plans	• Investigating the types of curricula like teaching curricula, plans like annual plans, lesson plans, and their properties on the internet. • Group discussion about parts of plans: the goals and objectives of the unit, content, teaching-learning activities, and evaluation.

4	The basics of curriculum development	• **Online discussion** about the importance of basics of curriculum development (such as the history of curriculum development, philosophies of curriculum development, etc...)
5	The responsibilities of groups	• Group discussion about the responsibilities of different groups formed during the curriculum development process.
6	Curriculum development design approaches and models	• **Online discussion** about the positive aspects and limitations of different curriculum development design approaches and models.
7	The needs analysis process	• **Online discussion** about different need analysis approaches and techniques in the curriculum development process.
8	Classification of objectives	• Completion of group assignment about the classification of objectives in terms of the steps of cognitive, affective, and psychomotor domains of Bloom's taxonomy from different class levels of yearly plans related to Mathematics, Life Science, Turkish, Social Sciences, Science and Technology, etc.
9	The organization of content.	• **Online discussion** about the positive and negative aspects of different content organizations.
10	The implementation of different instructional models, strategies, and techniques	• Completion of group assignment about the preparation of a sample lesson plan by implementing different instructional models, strategies, techniques compatible with the objectives of different courses. • **Online Discussion** about the variables affecting the quality of education (cueing, reinforcement, feedback, feedback, and correction) by providing examples of the variables affecting the quality of education.
11	The implementation process of the curriculum	• Group discussion about the implementation process of the curriculum and teachers' role during curriculum development and implementation.
12	The evaluation process of curriculum	• Implementation of jigsaw methods about different types of curriculum evaluation models. This study included home groups. After discussions in specialist groups about the properties, positive aspects, and limitations of different curriculum evaluation models, a small discussion in home groups took place including question-answer activity. Then, an **online discussion** part took place to deepen the knowledge about different curriculum evaluation models.

The face-to-face part of the course required the gathering of teacher candidates in the classroom to learn the course content through the presentation of the instructor using PowerPoint slides, followed by question-answer time besides collaborative group activities. The online part of the course included asynchronous discussions about the course topics for six weeks as shown in Table 2. The weekly discussion topics were placed on the discussion board, and teacher candidates were asked to send their reflections on the discussion board about the topic of the discussion, as shown in Figure 1. The aim of the online part was the enrichment of learning and increase the retention level of teacher candidates. Online discussions allowed the teacher candidates to send messages about the discussion topic and also send messages to each other's reflections, communicate in real-time with online chats, edit their messages, and see the instructor's messages, questions, and announcements. In other words, they learned the topic during the face-to-face part of the course, and then they practiced their learning through online discussions. As can be seen in Table 3, teacher candidates practiced and deepened what they learned in class outside of the formal class time to spare more time for collaborative and interactive activities in the formal class time.

Figure 1. Online discussion board

Data Collection Instruments

In the study, data were collected through lesson plans prepared by teacher candidates, the number of reflections on the discussion board, final scores, and perception of proficiency in planning the instruction scale. The lesson plans were expected to be prepared by considering the different stages of planning consisting of introduction (drawing attention, motivation, and the transition to the course), development (realization of course objectives by including appropriate teaching-learning strategies, methods, techniques, and appropriate materials) and conclusion (summarizing, evaluation, and giving homework) and submitted at the end of the semester. Lesson plans were graded by the course instructor using a rubric (see Appendix 1) according to the pre-mentioned consistency among the parts of the lesson plan such as the objectives of the course, content, learning-teaching principles, methods, materials, discussion questions, assignments, and evaluation procedures. The rubric was developed by the researcher to score the lesson plans of teacher candidates. Before grading their lesson plans, expert opinion was obtained in terms of the clarity, readability, and appropriateness of criteria for the aim of the study from two faculty members in the Curriculum and Instruction Department. Sample lesson plan formats were introduced to the teacher candidates, but there was no obligation to prepare lesson plans according to a specific format since Unver (2002) expressed that the insufficiency of fourth grade Pre-school Teaching Department teacher candidates in preparing lesson plans might be caused by the obligation to prepare lesson plans according to a uniform model.

Teacher candidates' final exam scores were obtained by the course instructor. The final exam consisted of multiple-choice questions related to all the topics of the curriculum development in the education course. The content of the course included the following topics: The basic concepts related to curriculum, such as types of curriculum, basics of curriculum development, need assessment (approaches and methods), goals and objectives of the curriculum, designing content, planning of instruction, and evaluation of the curriculum. Concerning the validity and reliability of final exam, 317 volunteer senior teacher candidates from various universities in Turkey (Manisa Celal Bayar, Ege, Çukurova, and Gazi Universities) participated. The final exam consisted of 22 multiple-choice questions and a matching type-three item question about the Curriculum Development Course which is consistent with the aims and goals of the Curriculum Development Course as established by the Higher Education Institution (2007). The mean item difficulty was 0.54, mean item discrimination was 0.40, and Kr-20 reliability coefficient was 0.71, according to the Test Analysis Program (TAP, version 14. 7. 4). As a result, the test can be considered valid and reliable.

"The Scale for Perception of Proficiency in Planning the Instruction" was developed by Gülbahar (2016). The scale was a 5-point Likert type and consisted of a single factor scale named "instructional planning proficiency". After conducting explanatory (with 313 teachers) and confirmative factor analysis (with 300 teachers), the internal consistency of the scale was found 0.97.

Data Analysis

In this study, to predict the achievement of teacher candidates in the Curriculum Development in Education Course, the Multiple Linear Regression (MLR) analysis was employed after checking the assumptions (Tabachnick & Fidell, 2007). In this study, normality, linearity, homoscedasticity, multicollinearity, and influential observations were checked to ensure no violation of the assumptions is present (Field, 2009; Tabachnick & Fidell, 2007). Also, to check for the existence of autocorrelation, the Durbin-Watson value was found to be 1.84 which is acceptable according to Field (2009). Data analyses were conducted using SPSS 22 and the significance of the alpha level was selected at the cut-off value of .05. Moreover, the reflections of teacher candidates on the discussion board were analyzed according to the number of reflections. In other words, teacher candidates' all meaningful messages including ideas were counted.

Results

In order to predict the achievement of teacher candidates in the Curriculum Development in Education Course, MLR was conducted. Firstly, descriptive statistics for the outcome variable, final grade, and predictor variables were shown in Table 3.

Table 3. Descriptive Statistics for the Final Scores and Predictor Variables

	M	SD
Final Grade	60.83	10.43
Lesson Plan Grade	82.65	10.91
Number of Reflections on the Discussion Board	10.24	6.94
Perception of Proficiency in Planning	3.60	.53

According to descriptive statistics shown in Table 3, teacher candidates obtained the mean score of *M*=60.83 (*SD*=10.43) from the final exam. Their lesson plan grades were higher than the final grade which is *M*=82.65 (*SD*=10.91). Moreover, the mean score of the number of reflections on the discussion board is *M*=10.24 (*SD*=6.94). Also, the mean score that teacher candidates obtained from the scale is *M*=3.60 (*SD*=.53). The mean score of the scale may indicate that their perception of proficiency in planning the instruction is above average.

Having presented the descriptive statistics, Pearson Correlation coefficients for the outcome and each predictor variable were computed. It was found that variables included in the study correlated among themselves significantly ranging from small to moderate correlations (Field, 2009). The correlations among variables were shown in Table 4.

Table 4. The Correlations among Final Scores and Predictor Variables

	(1)	(2)	(3)	(4)
Final Grade (1)	1			
Lesson Plan Grade (2)	.56**	1		
Number of Reflections on the Discussion Board (3)	.27**	.46**	1	
Perception of Proficiency in Planning (4)	.13	.22**	.11	1

***p*<.001

According to Table 4, the highest moderate correlation (*r*= .56) has been observed between the final grade and lesson plan grade variables. It can be said that when teacher candidates obtained higher grades from lesson plans they have prepared, the higher grades they obtained on the final exam. Moreover, the second moderately highest correlation (*r*= .46) was between the grades of teacher candidates obtained from the lesson plans they prepared and the number of reflections on the discussion board. In other words, as teacher candidates reflected more on the discussion board, and contributed to discussions about different course topics by participating more, they learned better about the parts of the lesson plan (objectives, content, teaching-learning, and evaluation parts) and obtained a higher lesson plan grade. Also, a small but significant correlation (*r*= .27) was found between the grades of teacher candidates obtained from the final exam and the number of reflections on the discussion board. It can be said that, as teacher candidates were active in both face-to-face and online parts of the course and reflected on their ideas more, they learned the course topics better and obtained a higher final grade. Furthermore, a small but significant correlation (*r*= .22) has been observed between the grades of teacher candidates obtained from the lesson plans they prepared and the score they obtained from the perception of proficiency in planning the instruction scale. It can be said that, as teacher candidates perceived themselves proficient in terms of preparing lesson plans, they prepared more efficient lesson plans (the parts of the plans are compatible with each other). For this reason, they obtain higher grades from their lesson plans.

Table 5. The Summary of the Multiple Linear Regression Analyses for Variables Predicting the Final Score

Variables	*B*	*SE B*	*β*	*t*	Sr^2	R^2	ΔR^2	ΔF
Model:						.31**	.31**	21.81**
Constant	16.66	6.88		2.42*				
Lesson Plan Grade	.53	.08	.55	6.91**	.48			
Number of Reflections	.03	.12	.02	.24	.01			
Perception of Proficiency in Planning	.11	1.39	.00	.08	.00			

*p < .01 **p < .001

The F-ratio for the model was $F(3, 143) = 21.81$ ($p < .001$), as shown in Table 5. In other words, the model was significant in predicting the final scores of teacher candidates. The lesson plan grades, number of reflections on the discussion board, and the scores obtained from the perception of proficiency in planning the instruction scale variables comprised the model and explained 31% of the variance in final scores. Moreover, the t-test statistics were checked to investigate the significant contribution of predictor variables to the model (Field, 2009), and as shown in Table 5, only the grades of the teacher candidates obtained from lesson plan $t(143)=2.42$, $p<.001$ significantly predicted the achievement of teacher candidates.

Discussion and Conclusion

In this study, it was found that the final grades of teacher candidates were correlated with their lesson plan grades, which are in line with previous literature (Li & Zou, 2017). In other words, as teacher candidates obtained higher grades on the lesson plans they prepared, the more they received higher grades from the final exam. Also, the grades of the teacher candidates obtained from lesson plans significantly predicted the final grades of teacher candidates. It can be inferred that as teacher candidates become sufficient in writing the parts of lesson plans, including objectives, content organization, teaching-learning strategies, methods, techniques, and evaluation parts which are in line with the objectives of the course, and they get higher grades on both their lesson plans and final exam since they have learned the topic better. Similarly, Asıroglu and Koc-Akran (2018) denoted that teaching practicum and lesson plans of low-performed teacher candidates revealed their acquisition of concepts related to teaching principles and methods at the knowledge level and the fact that they could not exemplify and practice teaching methods in real classroom contexts in their study including 224 sophomore teacher candidates at a foundation university. However, high-performing teacher candidates performed better in the design of instruction, and measurement and evaluation of objectives at different cognitive levels according to Bloom's taxonomy. Furthermore, Zafeiriou et al. (2001) found that familiarity with the subject had a positive effect on the participation levels of information studies students. Also, the research conducted by Kablan (2012), including 96 sophomore Elementary Teaching Mathematics Teaching teacher candidates, found that lesson plan preparation was affected more by theoretical learning, lesson plan applications, and concrete experiences. It may be inferred that as teacher candidates learned the subjects deeply, they contributed effectively to discussions, prepared better plans, and obtained higher grades in terms of both preparing lesson plans and final exam.

Moreover, it was found that the grades of teacher candidates obtained from the lesson plans they prepared and the final exam were correlated with the number of their reflections on the discussion board. In other words, as teacher candidates reflected more on the discussion board about their ideas and contributed to discussions about different course topics, they learned the parts of lesson planning (objectives, content, teaching-learning, and evaluation parts) better and obtained higher grades. Also, the feedback regarding teacher candidates' performance obtained from their peers and instructors might have encouraged participation in online discussions, which is in line with the literature (Branon and Essex, 2001; Sing & Khine, 2006), and contributed to the final exam as a critical variable. Also, teacher candidates might have thought about the topics longer before expressing them to peers, searched on the internet or course books, and learned different points of view from peers, which might have also contributed to their grades. Hrastinski (2007) revealed that the use of an online platform affected the participation of students positively since they wrote a higher number of sentences. Moreover, Fleming (2008) stated that students experienced greater cognitive learning when they exchanged between 80 and 100 messages, which was explained as far richer than the traditional classroom discussions. Chang (2008) discovered a close relationship between the performance of the online discussion and the achievement in project-based learning, which is similar to the current study. Online discussions, according to Zheng and Warschauer (2015), not only increased English learners' participation in classrooms but also contributed to gains in writing achievement. Additionally, students who participated more in the online discussion environment grew in their reading achievement during the school year. Ryan (2013) found that there was a significant difference in the level of student learning between the no-reflection group and the gain scores of small or large-threaded online discussion groups and the group which submitted written reflections to the instructor. It means that written reflections on the online discussion forums improve student achievement and

understanding. Moreover, Wei et al. (2015) discovered a direct relationship between education students' number of discussion board postings and their online learning performance (online-discussion scores, exam scores, and group-project scores) in an asynchronous online course from three Taiwanese universities. It can be inferred that as teacher candidates were active in the course and reflected their ideas on the discussion board, they learned the course topics better and obtained higher final grades.

Furthermore, a small but a significant correlation was found between the grades of teacher candidates obtained from the lesson plans they prepared and scores they obtained from the perception of proficiency on the planning scale. It can be said that, as teacher candidates perceived themselves as more proficient in terms of preparing lesson plans, they prepared more efficient lesson plans (the parts of the plans are compatible with each other). For this reason, they obtain higher grades from their lesson plans. Similarly, Yurtseven (2019) discovered that teacher candidates' perceived proficiency in instructional planning accounted for 56% of their achievement in instructional design. This means that perceived proficiency in instructional planning was a strong predictor of teacher candidates' achievement in instructional design. The results of some research also indicated that the planning levels of teacher candidates positively affected their ability to teach (Asıroglu & Koc-Akran, 2018; Kablan, 2012; Unver, 2002). For this reason, it is considered important that planning has a major place in the development of teachers' professional competencies.

All in all, it may be inferred that as teacher candidates contributed to online discussions effectively, they learned the subjects deeply, prepared better plans, and obtained higher grades in terms of both preparing lesson plans and final exam. It could be argued that, while a lesson or activity plan may not be a particularly accurate guide to what happens in the classroom, it does demonstrate 'intention to act.' Teacher candidates' lesson plans for a specific subject area may reveal information about their prior experiences and beliefs about planning.

Limitations and Recommendations for Future Studies

This study has certain limitations. The study was conducted at a state university located in the Aegean Region with a small sample size by including participants who were easy to access, which limited drawing generalizations that would apply for a broader population. For this reason, future studies may include more teacher candidates to generalize the findings. Although this study has some limitations, it presents the relations among class activities, lesson plan grade, and final exam, the findings may serve to show the importance of planning the instruction in teacher training in faculties of education.

As stated in the literature, planning the instruction processes progress in direct proportion to teachers' experience in their profession (Li & Zou, 2017; Orlich et al., 2010) and the application levels of teacher candidates depended on the number of lesson plans prepared (Davran, 2020). To produce effective teaching practices in their future professional career, teacher candidates should be provided with opportunities to practice planning the instruction in their sophomore Curriculum Development in Education course.

In the current study, quantitative data were collected through counting teacher candidates' number of reflections on the discussion board, assessing the outcomes through grades, and implementing a scale; however, reflection behavior of teacher candidates, the factors facilitating and limiting their reflections on the discussion board and the perceptions of teacher candidates about the contribution of the online part of the course to learning the course content and preparation of lesson plans might be investigated through interviews and observations.

Also, a small but significant correlation was found between the grades of teacher candidates obtained from the final exam and the number of reflections on the discussion board. This result might be affected by teacher candidates' willingness to learn, their familiarity with learning with technology, their priorities, and their existing workload. For this reason, it can be suggested that future studies might investigate the achievement of teacher candidates' by considering these kinds of situational and process variables.

In this study, teacher candidates were always in contact with their peers and course instructor both in face-to-face parts and outside of the class through a learning management system, which might have relieved the burden of learning and increased the involvement of teacher candidates since asking for help and obtaining support might have affected their grades. For this reason, it is suggested that teacher training courses might include a learning management system to support interactions between students and instructors.

Finally, in this study, teacher candidates took part in class and online activities asked questions, explained their opinions, reflected on the ideas of their peers, prepared sample lesson plans in groups, etc. Hence, it is suggested that teacher candidates should be provided with different active learning opportunities to apply what they have learned theoretically and increase their achievement.

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Appendix 1. Lesson Plan Grading Rubric

LEVELS					
5	**4**	**3**	**2**	**1**	**0**
• Objectives are written in accordance with objective writing criteria. • The content is explained clearly and aligned with the objectives. • The teaching technique is chosen in line with the course objectives. • The implementation of teaching activities is stated step by step. Which materials are selected and how to use them are explained. • At the end of the instruction, how the evaluation will be conducted, which measurement tools will be used or which questions will be asked are explained in detail.	• Objectives are written in accordance with the objective writing criteria, but there are some minor errors. • Content aligns with objectives but it is explained partially. • The teaching technique is compatible with the objectives, but more appropriate techniques can also be selected. • How teaching activities will be implemented is explained, which materials are selected are stated, but not explained. • At the end of the instruction, how the evaluation will be conducted is explained briefly.	• Some mistakes were made while writing objectives. • The content is compatible with the objectives, but it is explained very briefly in one or two sentences. • The teaching technique is compatible with some of the objectives. • How the teaching activities will be conducted is stated briefly, but which materials are selected and how they will be used are not explained. • The evaluation is stated only as a title without explaining how the students will be evaluated.	• Objectives are written in the lesson plan, but more than half do not meet the criteria for writing objectives. • The content is stated, but the explanations are not enough. • The teaching technique is not compatible with the objectives. • The explanations about how to implement the teaching activities are insufficient and which materials are selected and how they will be used are not explained. • How the students will be evaluated is not specified.	• The lesson plan is submitted, but only the headings are included in a sentence.	Lesson plan is not submitted.