KURAM VE UYGULAMADA EĞİTİM BİLİMLERİ EDUCATIONAL SCIENCES: THEORY & PRACTICE

Received: March 18, 2016
Revision received: August 31, 2016
Accepted: November 11, 2016
OnlineFirst: February 15, 2017

www.estp.com.tr
DOI 10.12738/estp.2017.2.0226 • April 2017 • 17(2) • 437–461

Research Article

Understanding by Design (UbD) in EFL Teaching: Teachers' Professional Development and Students' Achievement*

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Abstract

Concepts such as teachers' professional development and students' achievement act as the driving force for the development of each in a causal relationship in EFL teaching, as in many other disciplines. The purpose of this study is to investigate the change Understanding by Design (UbD) made on teachers' professional development and students' achievement. The study was carried out through action research design. The participants were 10 teachers and 436 students. Within action research based UbD studies, the instructors received training, formed four groups and made three designs and implemented them. As qualitative data collection tools, unit designs and one-to-one interviews were used. The quantitative data of the study were collected through English achievement scores. We instrumented content analysis for the qualitative data and the analysis of covariance and independent samples *t*-Test for the quantitative data. The findings indicated that action research based UbD studies had positive contributions to teachers' professional development process and students' English achievement.

Keywords

Understanding by design (UbD) • Professional development • Instructional design • English achievement

* This study is part of a doctoral dissertation.

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Citation: Yurtseven, N., & Altun, S. (2016). Understanding by Design (UbD) in EFL teaching: Teachers' professional development and students' achievement. *Educational Sciences: Theory & Practice*, *17*, 437–461. http://dx.doi.org/10.12738/estp.2017.2.0226

Professional development is a phenomenon that has a crucial importance for teachers to advance in their career professionally. Apart from their professional lives, it is also important for the acquisition of required knowledge, skills and instructional practices for addressing students' needs (Benedict, 2014; Cooper, 2014; Ingvarson, Meiers, & Beavis, 2005; Lee, 2014). A variety of sources, methods, and tools can be put into practice to sustain teachers' professional development. Understanding by Design (UbD) is among these tools.

UbD can be utilized as a tool both for continuing teachers' professional development (Brown, 2004) and ensuring students' enduring understanding (Wiggins, 2010). The focal point of UbD is to pay attention to all learners and their learning preferences by minimizing learning that happens incidentally or by inborn capacity. While doing this, it is aimed that the instructional priorities are determined and the instruction is conducted by making a good design first. These aims can be used as a tool for both increasing students' academic achievement and sustaining teachers' development throughout all their professional lives (Brown, 2004; Wiggins & McTighe, 1998).

UbD refers to the task of designing a unit plan covering a three-staged template during the teachers' designing process. At the first stage of the template, named *desired results*, concepts such as transfer, understanding, and acquisition are mentioned. Transfer can be described as students' making use of the knowledge in new learning situations independently. Understanding is the part in which enduring and transferable ideas as well as provocative essential questions are introduced.

At the acquisition part, knowledge and skills that should be achieved at the end of the unit are identified. The key components of the first stage are big idea and essential question. These two components enhance students' seeing the 'big picture' and making inquiries with a sense of wonder throughout the unit in order to reach enduring understandings. The second stage, which is called the evidence, is the stage in which a performance task and some other assessment *evidence* are mentioned. In the third stage, named *learning plan*, all the strategies, methods, techniques, and materials are introduced (Wiggins & McTighe, 1998, 2005, 2011).

The fact that implementing UbD in an educational institution enables its instructors to become active members of curriculum development is mentioned in many researches (Andrews, 2011; Baird, 2006; Bertram, 2011; Boehler, 2008; Boozer, 2014; Burson, 2011; Corvo, 2014; Edmunds, 2011; Kelting-Gibson, 2003; Meyer, 2006). Teachers' dealing with designing contributes to the burgeon of professional collaboration and dialogue at school settings (Anwaruddin, 2013). Together with their colleagues, teachers share ideas and make educational decisions in the designing process. Besides, implementing their own design in their lessons encourages the emergence of teachers' designer identity and helps to diminish the routine of textbook coverage (Wiggins & McTighe, 2011).

Another important contribution of UbD is that it facilitates students' learning in a meaningful and enduring way (Anderson, 2012; Duke, 2011; Molina, 2013; Noble, 2011; Schoellhorn, 2012; Stotter, 2004; Takacs, 2010). One of the fundamental problems in EFL teaching is that content coverage becomes a goal rather than being a tool (Wiggins & McTighe, 2011). In fact, the focus of instruction is to lay a sound foundation for the development of learning skills with the help of the content that is presented to the students. As UbD unit designs basically include essential questions and assessment techniques as relevant to enduring understanding, they help students to see the big picture about learning. Furthermore, the integration of different methods and techniques addressing individual differences helps to establish an enjoyable learning atmosphere for students and makes important contributions to the active learning process (Wiggins & McTighe, 2007). Likewise, assigning meaningful performance tasks helps students to make learning a life-long skill and to experience a learning process in line with their own needs. This, in time, helps them to become individuals that grasped the logic of learning as academic performance as well as cognitive and affective development is supported (Wiggins & McTighe, 2005).

UbD is a process that gives opportunity to plan, design, implement, and evaluate the syllabus to be covered in an institution (Wiggins & McTighe, 2011). The focus of this process is to develop designs in order to reflect the local needs of the school. Simply put, UbD is making educational decisions within the borders of a school through professional collaboration (Wiggins & McTighe, 2007). Integration and implementation of UbD by carrying out necessary steps is crucial for teachers' professional development (Baird, 2006; Bertram, 2011; Boehler, 2008; Boozer, 2014; Burson, 2011; Kelting-Gibson, 2003; Meyer, 2006; Steffen, 2011), for students' academic achievement (Anderson, 2012; Andrews, 2011; Noble, 2011; Schoelhorn, 2012; Schranck, 2007; Steffen, 2011, Stotter, 2004; Tacaks, 2010), and for schools' having a well-established curriculum archive (Anvarinejad, 2007; Gulsvig, 2009; Molina, 2013).

EFL teaching should offer an experiential content to students by its nature. This aforementioned course book coverage sometimes causes teachers even to skip production-based activities like writing and speaking so that they could complete the schedule on time. To solve these problems, it is essential that the role and responsibility of a designer be bestowed upon teachers by removing them from the role of solely implementers. Furthermore, it is crucial that the curricula have more experiential and cultural components, putting more emphasis on academic achievement. The functioning of the process in this way is also important for the sustainability of the professional development for teachers (Wiggins & McTighe, 2005, 2007).

This study is significant in the sense that it represents a threshold about the use of UbD in EFL teaching prevalently. We believe that we bring a new perspective into foreign

language teaching at university preparation level as it is mostly carried out via course book coverage and it leads to textbook dependence in the long run (Türkiye Eğitim Politikaları Araştırma Vakfı [TEPAV], 2015). Moreover, we aim that we offer a solution to the problem of English language learning and teaching, which is mentioned in many studies (Aydın & Zengin, 2008; Balcikanli, 2008; Demir, 2012; Işık, 2008; Yurtseven, 2010) in Turkey. We also hope to contribute to the literature by bringing university preparation EFL teaching into question and setting an example with the use of UbD-based unit designs in order to fulfill the requirement of incorporating interaction and promoting meaningful learning in the classroom settings (TEPAV, 2015). Last but not least, we want to help the teachers take the role of "designers" that professionally shape the learning experiences of the students with the help of action research based UbD studies to move away from the image of passive transmitters of knowledge (Svihla, Reeve, Sagy, & Kali, 2015). We believe that we can contribute to their professional development and improve their designing skills for the learning environment, which will, in turn, contribute to students' English achievement.

Within this scope, the purpose of this study is to investigate what kind of a change UbD made on teachers' professional development and students' achievement. The research questions are as follows:

1. To what extent are the unit designs made by teachers compatible with UbD principles?
2. What are the teachers' views about the effect of action research based UbD studies on their professional development?
3. Is there a significant difference between English achievement post-test scores according to the levels of students when pre-test scores are controlled?

Method

Research Design

The study was carried out through the action research. Action research studies are conducted in order to diagnose a problem about education and to develop solutions to it throughout the process with the help of emerging data. The purpose in action research is to shape and improve the educational practices (Berg, 2001; Burns, 2010; Creswell, 2012). In this respect, we instrumented the action research design in order to contribute to both teachers' professional development and students' achievement with the help of action research based UbD studies.

Johnson (2012) states that action research is the systematic observation of an individual's instructional practices. Therefore, apart from qualitative tools, some of

the quantitative data collection methods can also be used in action research studies so as to get the picture in a more clear way. In this framework, we obtained the data from the teachers through qualitative techniques such as one-to-one interviews or written documents. On the other hand, we gathered data from the students through pre-test and post-test scores for English achievement. In this vein, we applied the English achievement tests both to the participating and non-participating classrooms in the current study. In this way, we aimed to gain more insights about the reflections of teachers' professional development on students' achievement.

Action Research Process

Action research follows a cyclical process on a continuous basis (Berg, 2001; Berg & Lune, 2012; Creswell, 2012; Kemmis, McTaggart, & Nixon, 2014; Yıldırım & Şimşek, 2008). In this kind of research, the data collected during the previous action provides information to the researchers about the content of what will be the next action (Costello, 2011). Within this framework, we used the following flow of action in the current study.

Figure 1. The flow of action.

We started the action research process by identifying the problem first. Students' lack of foreign language learning motivation, low achievement scores and lack of professional development activities for teachers were the starting point for the action plan. The teachers' experiences during the fall semester and the examination

of students' scores had an influence on the identification of the problem and UbD was seen as an effective tool to tackle aforementioned problems. As mentioned in Figure 1, the teachers received two main trainings about UbD at the beginning of the second semester. In the first seminar, they were informed about the principles of UbD and they were provided with materials and sample unit designs. A week later, another seminar was organized to answer the specific questions of the teachers and to go into more detail about UbD. After the trainings, we made a decision of action to form design groups in accordance with the teachers' schedules and the courses they gave. In this respect, we created four design groups, two of which were Listening & Speaking groups and two of which were Reading groups. In order not to fall behind the school's program, we decided that the teachers designed unit plans following current curriculum's objectives and embellishing the content by using UbD's fundamental principles (e.g. bid idea, essential questions, performance tasks, enduring understanding, tailoring student needs, bringing methodological diversity etc.). Next week, teachers made the first unit designs during the workshop held. The unit designs were edited and teachers were given feedback to make some adjustments. After editing their unit plans, the teachers implemented their first unit designs in their classes. An evaluation meeting was held after the first implementations. The teachers received and provided constructive feedback about the implementations and they shared their experiences with their colleagues. As a decision of action, we reached a consensus about increasing methodological diversity and integrating some special teaching methods (e.g. six hats thinking method) into the second unit designs. The teachers made their second unit designs the following week. After they received feedback and they made the necessary editing, they implemented the second unit designs in their classes. We held the second evaluation meeting after the implementations and the teachers shared their experiences and opinions with their colleagues. As a decision of action, the teachers arrived at a consensus about addressing individual differences and integrating some other special teaching methods (e.g. differentiated instruction and 5E model) into their unit plans in the third unit designs. The teachers made their third unit designs the following week. After they received feedback and they made the necessary adjustments, they implemented the third unit designs in their classes. We held a final evaluation meeting after the third implementations. At the end of the meeting, we made a decision of action to arrange individual interviews with the teachers and to inform the administration and schools staff after the analysis of collected data. After the analyses, the findings were shared with all the stakeholders.

Participants

The participants were 10 teachers and 436 students at a state university, located in Istanbul, Turkey, in 2014-2015 academic year, spring semester. 225 of the students belonged to the participating group whose teachers implemented UbD studies in their

classes. 211 of the students were in the non-participating group who did not receive any UbD implementation during the lessons. The information about the teachers and the students is presented in Table 1 and Table 2:

Table 1
Descriptive Characteristics of the Teachers

Teacher	Year of Experience			Education		Age			Gender	
	0-5	5-10	10+	BD*	MD+**	22-25	25-35	35+	F	M
T1		✓		✓			✓		✓	
T2			✓		✓		✓		✓	
T3			✓	✓			✓		✓	
T4			✓		✓		✓		✓	
T5		✓		✓			✓		✓	
T6			✓	✓				✓	✓	
T7		✓			✓		✓			✓
T8			✓		✓		✓			✓
T9			✓	✓				✓	✓	
T10	✓			✓		✓			✓	

* Bachelor's degree

** Master's degree and more

Table 2
Descriptive Characteristics of the Students

Group	Female		Male		Total	
	f	%	*f*	%	*f*	%
Participating	83	36.88	142	63.11	225	100
Non-participating	91	43.12	120	56.87	211	100
Total	174	40	262	60	436	100

The students received English preparatory education at the department of Basic English. There were three levels at preparatory education, namely, A, B, and C. A level students were the ones who had the highest scores in the placement test while B level students had medium and C level students had the lowest scores. There was little or no change in the implementations at different levels since their syllabi were quite similar to each other. However, the formation of design groups was made by taking these differences into consideration.

Data Collection Tools

The data collection tools used in the study included unit designs, unit design evaluation rubric, one-to-one interviews, and English achievement scores.

Unit designs. They were the unit plans that the teachers made in the light of Ubd. In the study, there were totally four unit design groups in which 10 teachers participated. Each group consisted of two or three teachers. Teachers' schedules and the courses they gave were taken into consideration while establishing groups. In this way, two

reading unit design groups and two Listening & Speaking unit design groups were created. Each group made three unit designs and 12 designs were made in sum.

Unit design evaluation rubric. The unit designs were examined about their contexts by taking UbD template and principles into account. To do so, a tool, named unit design evaluation rubric was developed to examine the unit designs. The researchers within the scope of the related literature developed this rubric and two different experts gave their opinion about it.

One-to-one interviews. At the end of the action research, one-to-one interviews, the length of which ranged from 30 to 45 minutes were held with the teachers. Through the interviews, we tried to clarify elaborately how the teachers evaluated designing, implementation and professional development process. The questions directed to the teachers were prepared in the light of the existing literature and the opinions of five different experts were taken to give their last form.

English achievement scores. Students' fall and spring semester scores were examined to obtain their English achievement scores. Fall and spring semester scores refer to students' grades per semester. The main scores included in the average are first visa (20%); second visa (20%); three quizzes (20%); two reading exams (10%); writing portfolio (10%); presentation and oral exam (15%) and class participation (5%). Students' fall semester average scores were regarded as pre-test while spring semester average scores were regarded as post-test. It was considered that the scores obtained from students' grades they got during the entire semester were reliable by having expert opinion. All the tests that the students took during the two semesters were prepared by the Testing and Evaluation Office as standard tests.

Data Collection Procedure

During the data collection procedure, we;

1. Contacted the instructors working at the institution and created a study group based on the principle of voluntariness.
2. Obtained the students' fall semester English achievement scores as pre-test.
3. Put into practice the action plan.
4. Used unit designs and unit design evaluation rubric as data collection tools during the action plan.
5. Ended the action plan.
6. Held one-to-one interviews with the teachers.

7. Obtained the students' spring semester English achievement scores as post-test.
8. Analyzed all the data collected throughout the process.

Data Analysis

We analyzed the qualitative data through content analysis. Conducted to define data and reveal the hidden facts within the data, content analysis is the unification of data within the framework of similar concepts and themes, organizing it so that the readers can easily understand, and interpret it (Yıldırım & Şimşek, 2008). The primary objective in qualitative data analysis is to create patterns and themes instead of digitizing it (Glesne, 2012). Each sentence in the transcript obtained from the interviews was read carefully and coding was made. After the first researcher checked the codes, the second researcher made coding once again and the themes were identified by bringing the related codes together. The codes and themes were sent to the teachers to obtain audit trail and the teachers confirmed them. Lastly, five different experts checked the codes and themes.

The analysis techniques of quantitative data included the analysis of covariance and independent samples *t*-Test. In the study, English achievement pre-test scores were controlled to examine the differences between post-test scores through the analysis of covariance. When the assumptions for the analysis of covariance were not met, the independent samples *t*-Test was administered.

Validity & Reliability of the Study

We referred to Lincoln and Guba's (1985) (i) credibility, (ii) transferability, (iii) dependability and (iv) confirmability terms for validity and reliability of the current study. To increase the credibility of the study, a long-term interaction was ensured during 16 weeks with the participants; in-depth data was collected and they were continuously compared; more than one source of data was obtained to provide diversity; expert opinion and audit trail were referred to during the process of deciding on research design, data collection tools, and data analysis techniques.

Transferability is an important criterion for the readers to develop an understanding for similar settings and processes and to maintain their own practices in a more experienced and conscious way (Yıldırım & Şimşek, 2008). In the current study, the researchers paid utmost attention to lay out the research process as clearly as possible. Dependability is about the continuation of research and finding arrival process as clearly and reproducibly as possible (Morrow, 2005). To meet this requirement, a great deal of effort was made to create data collection tools, to follow the data collection process, to analyze data and to report the findings in a consistent way. Furthermore, the data obtained from the study was examined for its consistency. In

this scope, codes, categories, and themes gained through the content analysis were sent to five experts for examination.

Confirmability refers to the confirmation of findings with the help of obtained data and presentation of them to the readers with reasonable explanations (Creswell, 2012; Yıldırım & Şimşek, 2008). In the qualitative dimension of the study, transcript forms were created and the experts and the participants confirmed the accuracy of the forms. In addition, three different experts read the transcript forms and gave their opinion about the codes, categories, and themes.

The Roles of the Researchers

There were three main researcher(s) in this study. The first one was the researcher who made this study within the scope of her doctoral dissertation; the second one was the thesis advisor; and third one was the group of teachers that participated in the action research based UbD studies. The educational institution in which the study was carried out was the institution where the first researcher had worked for 10 years. In addition, the researcher made several studies about UbD before the main study to anticipate possible problems and take precautions about them. She also had an active role in creating design groups, coaching the teachers, checking the implementations, collecting the data and managing the whole action research process. The thesis advisor, who was the second researcher, took part in national and international projects both as a coordinator and counselor about teacher education and she had ongoing projects. She had an active role about training teachers about UbD, examining the unit designs made by the teachers, conducting evaluation meetings, and making one-to-one interview with the teachers. The teachers group, which was the third part in the research, rolled as important figures about designing unit plans, implementing them in their classes, making peer evaluation, and identifying the succeeding and the failing aspects of the action research.

Findings

The Compatibility of Unit Designs to the UbD Principles

Teachers' unit designs were examined within the scope of the first research question. Unit design evaluation rubric was used for the examination. All the unit designs were examined in rubric's framework and they were given scores out of 3 for each item (1 meant poor; 2 meant average; 3 meant good). Generally speaking, it can be said that each group made considerable progress about conforming to the UbD principles throughout the action research. This case reflected onto the scores that the groups gained from each unit design and to the total scores.

When the unit designs were examined generally, it was noticed that the teachers were successful about systematic issues. Time management, group work / cooperation, and conformance to the UbD template were among the examples about this issue. The groups made distinguishable progress about writing desired results accurately, preparing authentic performance tasks, determining assessment criteria, enriching the unit design methodologically, and addressing individual differences. Furthermore, all the groups were good at enriching the materials, informing the students about the goals, and preparing warm-up activities. Finally, all the groups improved considerably about presenting the big idea in the classroom, reminding the students about it frequently, and referring to the essential questions throughout the whole unit. However, the unit designs could have been much better about including some elements about experiential language learning, encouraging the students about active use of English, and transferring knowledge into new learning situations.

In this context, it can be said that the unit designs conformed to the UbD principles on a large scale, but they needed to be improved about the mentioned aspects.

The Teachers' Views about UbD Studies

In order to answer the second research question, one-to-one interviews were made with the teachers at the end of the action research; the data obtained were converted into transcripts, and the transcripts were content analyzed. When we consider action research based UbD studies, professional development process consists of three basic dimensions. These are designing units, implementing the designs, and the contribution of UbD to the professional development.

Designing units. Designing units is about teachers' preparing UbD based unit plans by gathering together with the members in their groups. When the transcripts obtained from the interviews were examined, it was noticed that two main themes emerged under this title. These themes were the contribution of UbD to the lesson plans and the process of designing with UbD.

Theme 1: The contribution of UbD to the lesson plans: Five main categories were identified under the theme of the contribution of UbD to the lesson plans. These categories were the knowledge gained, the skills gained, the experiences gained, support for the improvement, and the differences that UbD brought to the lesson plans.

In the *knowledge gained category*, teachers stated that terms related to the UbD made important contributions to both the unit plans and the lessons. Teachers pointed out that the big idea, essential questions, and performance tasks were the components that promoted the speaking skill and aroused students' interest. In the *skills gained* category, teachers pointed out that they learned how to design unit plans by doing it. In the *experiences gained*

category, teachers stated that they gained a lot of experience to renew themselves and gave some examples. In the category *support for the improvement*, teachers shared their opinions about the aspects that designing units supported them to improve themselves. The desire to use different methods, techniques, and activities and the need to see different samples of them encouraged them to improve themselves. In *the differences that UbD brought to the lesson plans* category, the teachers generally put emphasis on the difference using the language authentically made. The authentic usage of language, which provided activities about how the language was used in real settings, guided the teachers to complete the missing points in the course books and to improve students' speaking skills.

> Big idea, essential question… I did not expect that it would be so effective to show them to the students. I mean, I did not guess that we could continue the lesson by saying 'Keep this in your mind and see if you can find the answer in this lesson!' and the students would be interested in in it. They did, which really surprised me! (T6, Woman, 40).

Theme 2: The process of designing with UbD: Three main categories emerged under the theme of the process of designing with UbD: The problems encountered, facilitative factors, and solutions to the problems.

In *the problems encountered category*, the teachers mentioned the problems they faced during the process of designing. Anxiety was among the leading problems. They said that designing made them feel worried at first. Another problem was the lack of time and the heavy schedule of the school. In *facilitative factors* category, teachers emphasized that sharing views facilitated the process of designing. In *solutions to the problems* category, the teachers said that cooperation was the most frequently used solution. They stated that they received peer support both from their group friends and friends from the other groups.

> We tried to solve the problems by sharing the tasks. We also realized we overloaded ourselves while we were trying to do different things. Our unit designs started to have six to seven stages. Though they were really connected and well established, the time was not enough to cover them all. Therefore, we tried to make simpler, but creative and funny unit designs, which really helped us during the process. (T10, Woman, 27).

Implementing the designs. Implementing the designs is about the implementation of the UbD based unit plans in the classes. When the transcripts obtained from the one-to-one interviews with the teachers were examined, it was noticed that two main themes emerged under this title. These themes were UbD's reflection on students and UbD's reflection on teachers.

Theme 1: UbD's Reflection on Students: Three main categories were identified under the theme UbD's reflection on students. These categories were UbD's positive effects on students, UbD's qualities that facilitated learning, and factors affecting student motivation.

In the category *UbD's positive effects on students*, the teachers expressed the changes they observed in students' behavior. The first change was the increase in students' interest and participation. The teachers said that students' participation increased and they became more active in the lessons as the implementations affected their motivation positively. In *UbD's qualities that facilitated learning* category, the teachers explained in what aspects UbD accelerated learning. Two of these aspects were that it provided visual components to the lessons and special UbD concepts enhanced learning. In *factors affecting student motivation* category, teachers made evaluations about what could affect students' motivation based on their experiences. One of the most important one was fun element. They also added that teacher and student characteristics affected students' motivation.

> Performance tasks have a very important role as they epitomize what students learn. Normally, they cannot figure out where they are going to use the knowledge they gained in the lessons. With UbD we started something, moved step by step, and they went out of the classroom as students that completed and learned a couple of things. (T2, Woman, 35)

Theme 2: UbD's Reflection on Teachers: Four categories emerged under the theme UbD's reflection on teachers. These were the problems encountered, solutions to the problems, implementers' recommendations, and required conditions to implement UbD in the future.

In the problems encountered category, the teachers mentioned the problems they faced during the implementations. One of the problems was lack of time. The teachers emphasized that they experienced problems about implementing the unit plans they designed as the school had a very heavy schedule. In *solutions to the problems* category, the teachers mentioned their solutions to the problems. They said that they tried to put an emphasis on the important point when they had limited time and they tried to create some spare time to prepare the students for performance tasks. In *the implementers' recommendations* category, teachers gave advice on the implementation of UbD at schools. One of the most frequently mentioned recommendations was the revision of the concordance between UbD and the school's system. In *required conditions to implement UbD in the future* category, the teachers emphasized that administrative support was the most important condition to fulfill. They stated that it was crucial to review the testing and evaluation of the current system and change it with the support of the administration to conform it to UbD's system.

> Programs like UbD should be developed more extensively and our curriculum should be revised. There should be cooperation with the department of Curriculum & Instruction. If somebody leads this process, it will be one of the most important gains of this school. (T4, Woman, 33).

The contribution of UbD to the professional development. The contribution of UbD to the professional development dimension is about the improvement that the teachers made for their own professional development within the framework that

UbD provided them. Only one theme was reached at the end of the content analysis: Professional Development.

Theme 1: Professional Development: Four categories were identified under this theme: Experiences gained from the peers, recommendations, the things learned throughout the study, and the place of UbD in professional development.

In the category *experiences gained from the peers*, the teachers laid emphasis on the importance of peer feedback. They said that they had the opportunity to see different perspectives and gained new insights about the forthcoming unit designs through peer evaluation. In the *recommendations category*, the teachers mentioned the additional practices to increase the efficacy of UbD's contribution to the professional development. These were to revise the current system of the school, giving and receiving feedback from the peers, and observing each other's classes. In *the things learned throughout this study* category, the most frequently mentioned issue was that this action research study renewed and refreshed their teaching practices. In *the place of UbD in professional development* category, the teachers highlighted the contributions that UbD made to their professional development. They said that they found the opportunity to be actively involved in the learning process as well as learning from their colleagues

> I really refreshed myself. There were many things that I knew, but I could not have the opportunity to use in my lessons. It gave me pleasure to find a chance to remember all those things and use them in my classes again. (T1, Woman, 33).

In summary, the interviews made with the teachers revealed that factors such as designing, implementing, self-reflection, and peer-evaluation had an important place in teachers' professional development. Moreover, the teachers emphasized that action research based UbD studies gave them the chance to renew themselves and they recommended that the system of the school should be in harmony with UbD's basic principles.

The Students' English Achievement

The third research question was answered through the examination of students' English achievement scores according to the level they studied.

A level English achievement. To answer the research question for A level, the analysis of covariance was administered. The analyses started by examining whether the required assumptions for the analysis of covariance were met through Levene's Test and Test for Equality of Regression. The assumption tests revealed that the assumptions were met and the analysis of covariance was conducted in the light of this conclusion. The result of the analysis of covariance is presented in Table 3.

Table 3
A Level Analysis of Covariance for English Achievement

	Sum of Squares	Df	Mean Square	F	*p*
Group	34.30	1	34.30	1.01	.31
Error	2765.12	82	33.72		

As presented in Table 3, the result of the analysis of covariance was (F = 1.01, p = .31). As the p value that determined the level of significance was .31 ($p > .05$), it was concluded that there was not a significant difference in favor of the participating group when pre-test scores of participating and non-participating groups were controlled. Based on these findings, it can be said that action research based UbD studies did not make a significant difference on A level students' English achievement.

B level English achievement. To answer the research question for B level, the analysis of covariance was planned and assumption tests were carried out. The tests revealed that the assumptions were not met for the analysis of covariance. Thus, independent samples *t*-Test was administered to ascertain whether the difference between accessed scores (between pre-test and post-test scores) was significant. The results of the independent samples *t*-Test are given in Table 4:

Table 4
B Level Independent Samples t-Test for English Achievement

Variable	Mean difference	SED	df	t	*p*	d
English achievement	2.54	1.04	226	2.44	.01	.54

As can be seen in Table 4, there was a significant difference between B level participating and non-participating group students' accessed English achievement scores at $p = .05$ ($p = .01 < .05$) level. Based on this finding, it was concluded that English achievement was in favor of the participating group. Furthermore, when d value, which was calculated via Cohen's d formula, was examined, it was seen that the effect size of integrative motivation was .54, indicated that it had a moderate level of effect size (Cohen, 1998).

C level English achievement. To answer the research question for C level, the analysis of covariance was administered. The analyses started by examining whether the required assumptions for the analysis of covariance were met through Levene's Test and Test for Equality of Regression. The tests revealed that the assumptions were met and the analysis of covariance was conducted in the light of this conclusion. The result of the analysis of covariance is presented in Table 5:

Table 5
C Level Analysis of Covariance for English Achievement

	Sum of Squares	Df	Mean Square	*F*	p
Group	.13	1	.13	.00	.95
Error	5954.69	118	50.46		

As presented in Table 5, the results of the analysis of covariance was (F = .00, p = .95). As the p value that determined the level of significance was .95 ($p > .05$), it was concluded that there was not a significant difference in favor of the participating group when pre-test scores of participating and non-participating groups were controlled. Based on these findings, it can be said that action research based UbD studies did not make a significant difference on C level students' English achievement.

Discussion and Conclusion

The Compatibility of Unit Designs to the UbD Principles

Action research based UbD studies helped the teachers to review their instructional practices and the current curriculum from the perspective of UbD. In this regard, the unit designs showed a gradual progression and kept on improving with an aim to help students to obtain a successful learning experience. As McTighe (2011) highlighted, the teachers were informed that the unit designs should be made as a whole unit instead of single lessons and they were authorized to do whatever they wanted collaboratively within the boundaries of UbD template, which was made up of the stages of desired results, evidence, and learning plan. Moreover, Meyer (2006), who examined the teachers' experiences in the UbD unit design process, concluded that the designing process supported the teachers' professional development, changed their perspectives, and helped them collaborate as a team.

Covering the unit within the scope of the big idea and putting it in the center while studying are among the important principles of UbD. Only in this way can the students perform well about higher-order thinking and inquiry. Therefore, it is important to use strategies that encourage thinking, put the students in the center, and enhance interaction (McTighe, Seif, & Wiggins, 2004). From this point of view, the first set of unit designs focused on using UbD components successfully and they did not enable students to question, to think or to communicate constantly. As Wiggins and McTighe (2007) points out, an educational point of view, which focuses on understanding instead of regarding teaching and learning as long to-do list, helps learners about how to transfer knowledge by believing that the content of the lesson is valuable. In this respect, the frequent feedback that was given to the teachers helped them to raise awareness about centralizing the students, keeping knowledge transfer in mind, and individualizing the instruction for the upcoming unit designs. Likewise, Edmunds (2011), who aimed to examine the teachers' UbD unit designs, found that the teachers, who kept the enduring understanding and transfer in their minds, made more successful unit designs and shared their experiences with the peers.

One of the most important criteria for success in EFL teaching is to be able to communicate in the target language fluently in complex real-life situations at which

no one knows the speaker's native language (Wiggins & McTighe, 2007, 2011). It is difficult to say that the unit designs made throughout the action research based UbD studies were at the desired level about encouraging the functional usage of the language and providing the transfer of knowledge into new learning situations. As a matter of fact, the unit designs made considerable progress about improving the traditional syllabus of the school. However, the unit designs still needed to be improved about using the language functionally and making UbD unit designs part of the nature of teachers' regular classes.

Consequently, the unit designs that were made within the framework of the current study made critical contributions to teachers' design process and to their professional development in this scope. In spite of the fact that UbD philosophy and the terms were adapted to the unit designs properly, it should be said that the unit designs were inadequate about the functional, authentic, and independent use of the language. The reason behind it could be the heavy schedule of the school as well as teachers' having difficulty about getting used to designing and developing the required skills since it was challenging and complicated.

The Teachers' Views about UbD Studies

The teachers that participated in the current study reported that UbD unit designs brought new dimensions and diversity into the traditional teaching style of the courses and they helped them to gain knowledge and experience by encouraging the use of authentic and original language in the learning environment. As the teachers pointed out, the unit design process was challenging at first. This initially stemmed from the fact that the teachers did not normally prepare unit plans, they traditionally covered course books, and that they were not acquainted with UbD terms at the beginning. DuFour (2004) emphasizes that when teachers come together systematically in order to improve their classroom practices, they both have the chance to answer the necessary questions as a team and this situation can have some significant effects on student achievement. This can also help to create a dialogue among the colleagues, which was described as " a professional dialog" by Glathorn (1987). In this context, unit designs both enabled the teachers to share and exchange ideas without performing in an isolated manner and reduced the pressure about making preparations for the forthcoming units as they also shared the responsibilities. In other words, the workshops, the follow-up evaluation meetings after the implementations, and the informal meetings were among the components that strongly supported the teachers' professional development. In a similar study, Boozer (2014) concluded that UbD related studies helped the teachers support each other by meeting and taking instructional decisions on a regular basis.

Giving choices to students about performance tasks and other products encourages them to participate in the lessons in accordance with their interest and abilities

(Wiggins & McTighe, 2005). The implementation of UbD unit designs became meaningful with the increase in the students' interest to the lessons and their becoming more active during the classes. It is mainly because UbD made positive contributions to the unit plans, which were prepared by taking individual differences into account. Moreover, the unit designs were different from the traditional syllabus of the school as they encouraged the authentic usage of the language, directed students' interest into the lesson, and brought a breath of fresh air to the learning environment. Although there were some students that resisted to this change and refused to participate, the implementation in the participating group increased students' interest in general. In similar studies, Corvo (2014) and Molina (2013) found out that UbD studies increased students' interest in lessons as they attracted their attention for making their own decisions about preparing performance tasks and taking part in lessons in accordance with their learning styles and interests.

The teachers put forward some recommendations about implementing UbD after the implementations were over. These recommendations were reviewing the compatibility between UbD and the system of the school, the conversion of the whole syllabus into UbD, and utilizing UbD throughout the semester. As a matter of fact, it is essential that UbD coincide with the vision of the school and is regarded as a school-wide practice in order to get the expected result (Grooms, 2010; Harris, 2010; Jordan-Aldridge, 2010). Brown (2004) emphasizes that UbD implementers need to act collaboratively with all the stakeholders to be successful at the end of the process. In this respect, administrative support was regarded as one the fundamental conditions to be fulfilled. Moreover, they stated that the review and simplification of the current system, examination format, and the curriculum as well as giving autonomy to the teachers were among the other conditions to be met. This finding can also be supported with different studies (Özkan, 2011; Scherrod, 2014).

The current study gave the teachers the opportunity to pursue their professional development and work as a team. In addition, those implementations directed their attention to do research about the pursuit of new methods and techniques as well as acquiring further information and collaborating. Wiggins and McTighe (2007) emphasize that it is important to create a collaborative atmosphere in accordance with the common goals of the school. In this respect, the current study made considerable contributions to the teachers' professional development and it gave them a chance to acquire new knowledge. In a similar study, Doğan and Altun (2013) concluded that this kind of studies helped teachers to come together and take the initiative to make academic decisions in a collaborative way. In this sense, it is a stubborn fact that entering the classroom with a content that triggers students' attention and puts them in the center would both help reduce the workload and gain autonomy in particular issues.

Some of the most frequently illustrated points about the things learned throughout the study were that the usage of fun element and concrete materials in the lesson affected students' motivation in a positive way; taking individual differences into consideration increased the students' interest and participation, and giving freedom to the students and teamwork were important. The purpose of a curriculum is to teach how to use the content from the very beginning instead of making a tour of it. Therefore, the curriculum and the performance tasks are an inseparable whole. If the students are supposed to transfer their previous knowledge and skills to achieve enduring understanding, the curriculum should be arranged in a way to serve this purpose and to give the students the opportunity from the very beginning (Jamwal, 2012; Wiggins, 2010; Wiggins & McTighe, 2007). In this aspect, it is critical that implementations, which place the students in the center and make them in charge of their own learning process, are put into practice in the classes. Only in this way can students achieve enduring, meaningful, and transferable knowledge during the learning process.

As a consequence, the interviews made with the teachers and the studies in the literature demonstrated that UbD could make considerable contributions to the teachers' professional development from many aspects on condition that the implementations were carried out with an administrative support by taking different students' interest into account.

The Students' English Achievement

There was a significant difference in B level participating group students' English achievement scores whereas there was not a significant difference in A and C level. One of the most prominent reasons why B level participating students' English achievement increased can be explained through the relationship between teachers' professional development and students' achievement. As already known, students' achievement provides the major reference in order to measure the effectiveness of professional development (Hanushkek & Rivkin, 2010; Sanders & Horn, 1994; Sanders & Rivers; 1996). Because teachers have a direct influence in students' learning process and their professional development can precisely affect their achievement (Darling-Hammond, 2012). From another perspective, UbD implementations brought a breath of fresh air into the coverage of skill courses. A unit bringing enduring understanding into the focus starts with an essential question that refers to the real life issues or problems and this essential question is reminded to the students frequently throughout the unit. When the unit contains elements that help students find out the answer of the essential question, the teacher is supposed to interfere only when necessary to lecture and make simple reminders. It is also important to frame the unit with a supporting performance task and other assessment techniques such as quizzes to collect the required evidence (Wiggins & McTighe, 2007, 2011).

Another reason for B level participating students' English achievement might be that UbD implementations helped students acquire the ability to transfer and make use of the knowledge in new learning situations. Transfer is a skill that helps students to learn in a rapid way and integrate the knowledge and skill so that s/he can perform well in a situation s/he has not encountered before (Wiggins & McTighe, 2007, 2011). In a similar study, Andrews (2011), who examined the effect of UbD on students' meaningful learning and achievement, found out that there was a significant difference in treatment and control group students' achievement scores after UbD implementations. Likewise, Anderson (2012) concluded that UbD based reading circle implementations had positive contributions to both students' reading skills and reading test scores.

The finding that there was not a significant difference in A level students' English achievement can be explained through the problem of lack of time. According to Wiggins and McTighe (2011), exposing the students to an intensive curriculum lead to the superficial coverage of the subjects without developing a sufficient understanding or deeper thinking. In this respect, problems such as having a heavy schedule, doing the UbD implementations as quickly as possible during the lessons, and the coincidence of UbD implementations with school exams might have reduced the efficiency of the UbD implementations although teachers stated that these implementations stimulated the students' interest. In a similar study, Duke (2011) found that UbD based courses increased the students' reading achievement to some extent; however, there was not a dramatic change in the students' reading performance in the standard tests.

The reason why there was not an increase in C level participating students' increased can be explained through Gardner's (2006) social-educational model. According to the model, there are two main keys to success in foreign language learning. One of them is the ability and the other one is the motivation. In Gardner's social-educational model, the ability has a direct influence on foreign language learning achievement and an individual, who has the ability to learn a foreign language, can more easily succeed in learning it. Here, the aforementioned ability to learn a foreign language is closely associated with both cognitive predisposition and factors such as characteristics, age, or using learning strategies (Littlewood, 2006). In a similar study, Yurtseven, Alcı, and Karataş (2014) concluded that the motivational factors such as interest in or attitude towards learning a foreign language have a predictive power about the achievement gained in English lessons.

As a consequence, for the reasons expressed above, there was a significant difference in B level participating students' English achievement though the difference in A and C level students' English achievement scores was not significant after the UbD implementations. It is important to consider the lack of time and the relationship between motivation and achievement while analyzing the finding for A and C level.

For the findings in B level, it is essential to be aware of issues as knowledge transfer, the relationship between motivation and achievement, ability, interest, attitude, and their predictive power on achievement.

Implications and Recommendations

UbD is a significant tool for teachers to pursue their professional development as well as addressing their students' needs and the findings raised by this study indicate several recommendations for future research. As the current study is pertinent to both practitioners and researchers, we presented the recommendations under two separate headings:

Recommendations for Practitioners

1. Since action research based UbD studies had positive contributions to teachers' professional development and B level participating students' English achievement, UbD should be used as a medium for teachers' professional development and students' achievement in the future, as well.
2. More action research studies should be carried out in order to support teachers' professional development.
3. The cooperation with the school administration should be encouraged to produce better results.

Recommendations for Researchers

1. Future studies should be carried out in order to examine the reflections of UbD on different cognitive and affective variables.
2. In the future studies, stakeholders (administrator, teacher, etc.) can be increased and their evaluations about UbD can be investigated.

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