DESIGN AND EVALUATION OF A HIGHER EDUCATION DISTANCE EAP COURSE BY USING THE ADDIE MODEL

YÜKSEK ÖĞRETİMDE UZAKTAN EĞİTİM YOLUYLA AKADEMİK AMAÇLARA YÖNELİK KURSUN ADDIE MODELİ KULLANILARAK HAZIRLANMASI VE DEĞERLENDİRİLMESİ

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Abstract

Due to inadequate support, most university students have difficulty with writing academic texts, such as research articles and dissertations. Therefore, the aim of this research is to design a web-based academic writing course for university students by using the ADDIE (Analysis, Design, Development, Implementation and Evaluation) model, which is supported by individual instructional and socio-cultural theories on the design of online instruction. The first group of participants in the study included undergraduate and graduate students studying in a variety of departments at a state university in Turkey. The second group of participants included university instructors. To diagnose the needs of the students, semi-structured questions were asked in interview sessions. Additionally, a questionnaire was used. After diagnosis of the students' academic writing needs, course content and materials were designed for topics such as formality, paraphrasing, and the IMRaD (Introduction, Method Results and Discussion) model. The data collected with the questionnaire were analysed through item analysis. The frequencies and percentages of responses to each item in the questionnaire were calculated. Content analysis was used to analyse the transcribed interview data. The findings elucidate how the current academic online courses can be implemented more efficiently.

Keywords: Academic writing, distance, university students, higher education

Öz

Üniversite öğrencilerinin bir çoğu yeterli desteği alamadıkları için araştırma makalesi, araştırma önerisi, makale, ve tez gibi akademik çalışmaların hazımında zorlanmaktadır. Bu çalışmanın amacı ADDIE (İhtiyaçAnalizi, Dizayn, Geliştirme, Uygulama, değerlendirme) modelini kullanarak üniversite öğrencilerinin akademik yazım bilgi ve becerilerini geliştirmeye yönelik geliştirilen web-tabanlı akademik yazım kursunun geliştirme, uygulama ve değerlendirme süreçlerini açıklamaktir.. Çalışmanın birinci grup katılımcılarını Turkiyedeki bir devlet üniversitesinde kursa kayıt olan lisans ve lisansüstü öğrenciler oluşturmaktadır... Diğer katılımcı grup is bu üniversite öğretim elemanlarını kapsamaktadır. Çalışmanın ilk aşaması olan 'ihtiyac analizi' safhasında, öğrencilere yarı yapılandırılmış sorular sorularak akademik yazım ile ilgili ihtiyaçları belirlenmiştir. Veriler içerik analizi ile analiz edilmiştir. Bunun yanında araştırmacı tarafından geliştirilen bir anket hem öğrenci hem de öğretim elemanları grubundaki katılımcılara uygulanmıştır. Öğrencilerin ihtiyaçları belirlendikten sonra program içeriği ve kullanılacak ders materyalleri geliştirilmiş,program uzaktan öğretim formatında uygulanmış ve program sonrası katılımcılarla yüzyüz görüşmeler yapılarak programın etkililiği değerlendirilmiştir. Sonuçlar katılımcıların bir çoğunun programla ilgili positif dönüt verdiğini göstermiştir. Ayrıca, programın daha etkili olabilmesi için katılımcıların önerilerini de belirtilmiştir.

 Anahtar kelimeler: Akademik yazım, uzaktan öğrenim,üniversite öğrencileri, yüksek öğretim

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1.   Introduction

Academic writing is a complex process with a variety of aspects such as coherence and cohesion, formality of language, developing and organizing ideas in a logical flow, developing a fluent and expressive style appropriate to the academic field of study, and appropriate use of grammar and vocabulary. AW is not either a simple cognitive activity or an easy skill to be achieved in a second language. AW is defined by Al Fadda (2012, p.124) as *'the logical organization and arrangement of the written sentences within a paragraph and paragraphs within the units of discourse'*. Literature supports that non-native speakers of English have difficulty in academic writing and publishing (Hess, 2012). Due to inadequate support, most university students have difficulty with writing academic texts, such as research articles and dissertations. PhD students in particular experience high levels of stress since they are expected to publish their work in English in international peer-reviewed journals as a part of their PhD programs of study. Because university students get limited support for academic writing such as dissertations and research articles (Garbus, 2005), the pressure is even higher. The aim of the EAP course presented in the present study is to help students gain the necessary knowledge and skills related to writing academic texts. The present study is multidisciplinary and relates to studies of English language teaching, online teaching and learning, and instructional design and development. Therefore, the study is framed by a variety of theoretical concepts.

There are many models of instructional design, such as the ADDIE Model (Analyse, Design, Development, Implementation and Evaluation), the Dick and Carey model, and the Four-Component Instructional Design (4C-ID) model. Dick and Carey (2004) outlined the importance of using a systematic approach in designing instruction. The ADDIE model is simpler and easier to use than the others and provides a systematic approach to designing and developing learning experiences. From the above-listed examples of instructional design models, the ADDIE model is the most popular model used for designing instruction. It is easy to follow and provides a simple structure (Khalil&Elkhider, 2016). The present study uses the ADDIE model.

1.1. ADDIE Model

1.1.1. Analysis phase

The first phase of the ADDIE model is to analyse the learners' characteristics. Such an analysis enables the course designers to know which concepts are more challenging for the learners and, thus, need more emphasis and to determine which concepts are likely to be easiest for them. Additionally, the information gained about target learners' existing knowledge, previous experience, interests and attitudes can provide course designers with valuable data for determining the proper instructional models and materials to be used. Therefore, in the analysis phase, to identify learner needs, a self-evaluation questionnaire designed with two versions was administered to the students and university instructors. After reviewing the related literature, the researcher first constructed a pool of items. Then, the first version of the questionnaire was reviewed by an expert at English language teaching, and an expert at educational sciences for content validity. According to the comments of the experts, the questionnaire was modified. Then, it was piloted with four graduate students and three university instructors for face validity. The student self-evaluation questionnaire has two main sections. The first section involves questions about the learners' demographic information (What is your gender, department of study, and level of study?); learners' ICT skills and

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access opportunities (Do you have a personal computer? Do you have the necessary basic knowledge and skills to use a computer? Do you have access to the Internet?); and learners' learning styles and attitudes towards online learning (How comfortable are you with online learning technology? Do you like working alone or collaboratively? Which mode of instruction – plain text, text embedded with visual images, text embedded with audio and visual images – do you prefer when learning online?). The second section is designed to gather data related to learners' current knowledge and skills for writing an academic text. The learners are asked to indicate how challenging it is to write an academic paper (article, dissertation, etc.). Learners responded to statements by checking the appropriate columns that corresponded to a five-item Likert-type scale (1: strongly disagree; 2: disagree; 3: neutral/ I have no idea; 4: agree; 5: strongly agree). Sample statements are as follows: 'I have difficulty finding the technical vocabulary of my subject of study'; 'I have difficulty in generating, organising and linking ideas'. The questionnaire designed for the university instructors is like the student questionnaire and includes the same statements, such as 'My students have difficulty in…'. *The first group of participants (N=98) includes 37 undergraduate and 61 graduate students studying in a variety of departments in the schools of engineering, science and architecture. The undergraduates are at their 2nd, 3rd and 4th years. Out of 61 graduate students, 20 of them are PhD students while the rest are MA students. The second group is composed of 39 university instructors who held full professor, associate professor and assistant professor positions in faculty of science, faculty of engineering and faculty of architecture. All of the university instructors have experience in supervising either MA or/and PhD students. All participants responded and returned the evaluation questionnaires via e-mail to the researcher. The frequencies, percentages, and means are calculated for each item in the questionnaire. The analysis of the learners' responses indicated that the students have the most difficulty with writing content (abstract, introduction, methodology, discussion, and conclusion), with an average mean score of 4.37. More specifically, of these sections, they have the most difficulty with writing the discussion (M: 4.89) and introduction (M: 4.75) sections. The least difficulty they experience is with grammar (tenses, articles, etc) (M: 3.75) and writing in-text and end-text citations (M: 3.88).

Similarly, literature supports that non-native speakers of English have difficulty in academicwriting(Chang&Kuo,2011;Flowerdew,1999;Kolzee&Johnstoon,2011;Liu&Braine,2005;Paltridge,2018). More specifically the areas of difficulties related to academic writing are -basic writing skills -grammar&punctuation-(Kotzee&Johnston,2011); connecting sentences(Shaw,1991);Clear and concise organization of ideas (Keong &Mussa,2015); writing literature review (Kwan,2008); describing the results (Okamura,2006); and reference writing (Liu&Braine,2005). Graduate students get least academic support related to writing academic writing genres such as dissertations and research articles (Garbus, 2005).   Due to the inadequate support, academic writing has become one of the most important problems of graduate students (Jordan, 1999; Yugianingrum, 2010).

1.1.2. Design phase:

In this phase, an outline of the course was developed. The course designer needed to make appropriate decisions in relation to a variety of factors, such as the objectives of the course, the instructional strategies and learning activities, the mode of content delivery, assessments of learners' success, evaluations of the programme, assessments and evaluations

of materials, course and supplementary materials, and the structure and schedule of the course.

The web-based academic writing course was developed by a researcher who, at that time, was the academic writing centre coordinator at a Turkish state university, where the medium of instruction is English. The course was developed for university students who want to develop their knowledge and skills in relation to academic writing. It is an in-demand course and does not involve earning credits or certificates.

Recently, universities have tended to move from traditional courses towards blended and online courses (Allen &Seaman, 2013; Carrasco& Johnson 2015; Rubio &Thoms,2012). A variety of research has validated the practice of distance education, revealing no significant differences in learning outcomes between face-to-face and distance education (Hannover Research Report, 2011). Therefore, to increase flexibility and reach more students, an academic writing course was designed for distance learning. In the present study, the concepts 'distance', 'online' and 'web-based' are used interchangeably.

When designing the course the theories below are used:

Instructional theories applied in the design phase

Sociocultural theory, developed from the work of Vygotsky (1978), is the most popular view of learning and teaching (Hall, 2007) in the design of online education (Scott &Palincsar, 2009). Learning develops within the social environment with Vygotsky's concept of the zone of proximal development (ZPD), which is the distance between what a learner can achieve alone and what s/he can achieve with support. Such support is also called scaffolding. As the learner becomes more proficient, the support is gradually removed such that at a later stage, the learner accomplishes the task independently.

In the present study, tasks are organized from simple to complex. A high level of support is provided to the learner at the beginning (pre-section), and the support diminishes by the end (post section). Scaffolding is provided to the learners in a variety of ways. First, in the pre section of each module, to help the learners prepare for the new topic and activate their background knowledge, a pre-task is prepared, which is usually designed in the form of guiding questions or a pre-questionnaire to determine the current state of learners' knowledge about the new topic. For example, in the pre-task activity of the 'how to write a conclusion' module, learners are required to complete a short questionnaire designed in a true/false format that involves prompts such as 'A conclusion chapter is only a brief summary of the research' and 'Implications should be included in the conclusion chapter'. Second, to help the learners better understand the units related to the topic, a summary of these units is presented in the second task of the 'during' section of each lesson. Finally, the students are provided with opportunities to ask the instructor of the course any questions related to the semi-structured tasks (Task 3, Task 4) via e-mail. Scaffolding is removed in the 'post' section of the modules, which requires the learners be independent and compose a free writing sample on their own (Table 2).

Vygotsky (1978) posits that dynamic interaction among the individuals of that community leads to gradual and continuous learning. In the present study, to promote interaction among the members of the course community, the online instructional platform

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has built-in communication tools, such as e-mails and bulletin boards where students can post messages.

Another learning theory that is considered during the 'design' phase is individualized instruction, also called differentiated instruction (Prast et al 2018; Tomlinson, 2014). It is a theory that considers individual differences and posits that the instructional approaches, instructional materials, instructional media, and pace of learning should vary according to the abilities and interests of each individual learner (Tomlinson, 2014). Learners enter learning experiences at different starting points, with different backgrounds and different ability levels, so they progress from one task/concept to another at different speeds according to their needs and abilities. In a traditional classroom, teachers find it increasingly challenging to provide each learner with individualized instruction (Rivera, 2017). However, online technology helps online course designers anticipate and respond to students' various learning needs and offer learners of various learning styles different learning materials, which allows learners to acquire knowledge at their own pace. In the present study, although there is not an enforced time limit for the students to study each module, the students have nine weeks to complete the course.

Another approach is Bloom's Mastery Learning Approach, which is breaking the content of the course into several manageable instructional units. Such segmentation enables effective and explicit instruction (Archer&Hughes, 2011), thus ensuring a comprehensive understanding of the course content. The online academic writing course has two main modules with a total of nine lesson units. These units are sequenced such that they build on each other, thereby enabling learners to master the content.

The primary mode of course delivery is through self-paced modules, each of which is dedicated to a specific topic. Each module is structured within lessons, and each lesson is presented with four subsections (Table 1): 'pre', 'during', 'post' and 'supplementary materials'. The **'*pre*'** section, aims to prepare learners for the new topic and activate learners' background knowledge. This activation could be in the form of guiding questions about the content of the topic to enable the learners to make the necessary connections that might not otherwise be realized by the students themselves. There is no text book for the course. The primary sources of material for course instruction are selected units from a variety of books about the topic. These units are in the form of digital texts. In the first task of the '*during*' section, the students are required to read these digital units to gain the necessary knowledge about the topic. The second task is a summary of the topic highlighting the most important information in the reading assignments. The summary text is embedded with visualizations such as tables and illustrations. The third and fourth tasks are semi-structured practice activities with correct answer explanations. The *'post'* section requires the learners to engage in a free writing task. Finally, the '*supplementary materials'* section includes links to related web-based resources for the students to review and extra supporting information and activities related to the topic.

1.1.3. Development phase

This phase builds on both the analyse and design phases and consists of creating and organizing the learning material that will be used during instruction. It also includes developing and piloting the evaluation and assessment instruments. For this phase, the researcher has developed a course evaluation questionnaire for the students, which consists of structured questions regarding teaching approaches, course content, feedback and assessment, and learners' overall experiences. Learners respond to each question on a five-item Likert-type scale (1: strongly disagree; 2: disagree; 3: neutral/ I have no idea; 4: agree; 5: strongly agree. The evaluation questionnaire also has three open-ended questions, which are as follows: What did you like best about the course? What did you like least about the course? What changes would you recommend to improve the course?

1.1.4. Implementation phase

In the implementation phase, the course is presented to the learners. This phase is the actual use of instructional materials to support students' mastery of the learning objectives. The implementation phase provides an opportunity to evaluate what was planned during the design phase. The course is implemented online and lasts nine weeks. During this time, all students have free access to the course modules. However, after nine weeks, students' access is restricted to the website.

1.1.5. Evaluation phase

Evaluation is an ongoing feedback process. The aim of this phase is to get general student feedback on the course and to assess the overall effectiveness of the course to improve the instruction by correcting the weak points. In the present study, the evaluation questionnaire developed in the previous phase was administered to a total of 25 students, who have indicated that they studied the course content systematically. The participants evaluated the course to be generally very useful and informative. They indicated that the course content was very rich and organized and that usage of sample articles in their field of study was an important factor in fostering their understanding of the topic. However, they also indicated the weaknesses of the course. Most of the students indicated that they would be more motivated if they could have earned credits or if a certificate had been issued upon the completion the course. They also asked for more support from the course instructor, especially in the 'post' section, where they were required to accomplish a free writing task. Some students also highlighted the need to increase interaction among the students and the course instructor and suggested synchronous chat sessions and course content provided through videoconferencing and in the form of PowerPoint slideshows.

2. Conclusion

The present study illustrates how the ADDIE model, with the support of online instructional design theories such as sociocultural and individual instructional theories, is used to design a web-based academic writing course for university students. Low English language proficiency is considered one of the most common difficulties related to academic writing (Ferguson et al,2011; Negretti & Kuteva,2011) and existing workshops often focus on the grammatical aspects of language rather than academic literacy as it relates to academic

writing (Langum and Sullivan 21). However, in the present study, the participants do not regard grammar to be a serious problem in academic writing, which is predictable since most of the participants' English language proficiency is very high due to the high English language entry requirements of the university's MSc and PhD programmes. In the related literature it is mentioned that students also have difficulty in   critical reading (Blue, 1993) and critical thinking (Melles, 2008), which are the essential requirements for academic writing.   Therefore, including these topics in the current course syllabus may lead to a more efficient learning of academic writing.

The findings emphasize learners' preference for the course instructor to play a greater role in a more interactive learning environment. Such a role could involve providing more feedback on students' free writing tasks and more synchronous web-based instruction.

The findings also highlight the training needs of the course instructors. Faculty needs external support to design effective online environments. Most of the course instructors, who are subject experts, also serve as course designers with an added burden. Therefore, they should be provided opportunities to engage in seminars or workshops to learn how to move from traditional courses to online formats, which, in turn, can lead to effective instruction in online educational environments (Siragusa, 2006). Expanding on this need, Issa (2011) and Levinson (2010) highlight that such training should also include educational and instructional theories. Although not indicated by the participants of the present study, the course instructors should be aware that time management could be a challenge for the online learners. If there is no scheduling involved in the online course, because students must pace themselves, they could get behind in their work. Therefore, the course instructors should either provide students with a weekly schedule of topics that outlines the start and end dates or encourage the learners to make a schedule that includes time slots for learning.

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The present study is not without limitations. The first limitation is related to the data collection tools. In the 'Analysis' and 'Evaluation' phases in order to collect data only one type of data collection, a questionnaire designed in a Likert-scale, was used. Data collected through interviews could have complemented the data collected through the questionnaire and could have provided us with a broader understanding in regards to graduate students' academic writing needs and their evaluations of the EAP course.

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Table 1 . Course Syllabus				
Week	Modul	Topic	Lesson	
1,2	Modul 1	Introduction to Academic Writing	Lesson 1	Features of academic writing 1a) Formality 1b) paraphrasing
3			Lesson 2	How to write Introduction?
4,5	Modul 2	Writing an article	Lesson 3	How to write Methodology? 3a) materials & procedures 3b) prsenting the data
6			Lesson 4	How to write Results?
7			Lesson 5	How to write Discussion?
8			Lesson 5	How to write Conclusion?
9			Lesson 6	How to write Abstract?

Table 2 Sample course structure					
	Lessons	Sections	Tasks		Degree of scaffolding
MODULE 2	Lesson 6 How to write abstract?	pre	Task 1	Activation of learners' background	high
		during	Task 1	Pre-reading assignments	high
			Task2	Summary of the units related to topic	high
			Task3	Semi-controlled practice activity	moderate
			Task 4	Semi-controlled practice activity	Moderate/low
		post	Task 1	Free writing activity	-
		Supplementary materials	-	Links to related websites which involve extra practice activities and information	-

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