Differentiated Instruction in Higher Education EFL Classrooms: Instructors' Perceived Practices in a Turkish Context[1]

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Abstract

This study investigated differentiated instruction in EFL classrooms in higher education, particularly in a university English preparatory program in Turkey. The existing differentiation practices were determined using Tomlinson's (1999) framework that involves the differentiation of content, process, product, and learning environment based on students' readiness, interest, and learning profile using various instructional strategies. Fifty-one instructors teaching at the English preparatory program participated in the study, and the data were collected through a questionnaire adapted from Santangelo and Tomlinson (2012). The findings revealed that the instructors in the English preparatory program considered students' readiness level more than their interests and learning profile when differentiating instruction. It was also found that instructors preferred to differentiate the learning environment more than the content, process, and product. Finally, the study showed that the most frequently used differentiation strategies were providing supplemental materials for slow learners, using a variety of grouping formats, and supporting weak students to complete assignments, while the least frequently used ones were providing students with multiple text options, grouping students based on their interests, and allowing students to produce tasks in different forms.

Resumen

Este estudio investigó la instrucción diferenciada en las aulas de EFL en la educación superior, particularmente en un programa preparatorio de inglés universitario en Turquía. Las prácticas de diferenciación existentes se determinaron utilizando el marco de Tomlinson (1999) que implica la diferenciación del contenido, el proceso, el producto y el entorno de aprendizaje en función de la preparación, el interés y el perfil de aprendizaje de los estudiantes utilizando varias estrategias de instrucción. Cincuenta y un instructores que enseñan en el programa preparatorio de inglés participaron en el estudio, y los datos se recopilaron a través de un cuestionario adaptado de Santangelo y Tomlinson (2012). Los hallazgos revelaron que los instructores del programa preparatorio de inglés consideraban el nivel de preparación de los estudiantes más que sus intereses y perfil de aprendizaje al diferenciar la instrucción. También se encontró que los instructores preferían diferenciar el entorno de aprendizaje más que el contenido, el proceso y el producto. Finalmente, el estudio mostró que las estrategias de diferenciación más utilizadas con más frecuencia eran proporcionar materiales complementarios para estudiantes lentos, utilizando una variedad de formatos de agrupación y apoyando a los estudiantes débiles para completar las tareas, mientras que las menos utilizadas eran proporcionar a los estudiantes múltiples opciones de texto, agrupando a los estudiantes en función de sus intereses y permitiendo a los estudiantes producir tareas en diferentes formas

Introduction

Today the number of students in higher education is increasing rapidly worldwide. University students are expected to be 377.4 million by 2030 and 594.1 million by 2040 (Calderon, 2018). With the expansion of higher education, the diversity of university students has become more prominent (Barrington, 2004). Despite the rich diversity of the student population, a one-size-fits-all approach and traditional lecturer-fronted instructional methods are still used by many university professors (Joseph, 2013).

As a learner-based instructional method, differentiated instruction (DI) aims to address the diverse needs of each student in a classroom and help them achieve maximum growth as learners through proactively adjusting teaching and learning to meet their ability level (Tomlinson, 1999). DI has been widely used in different levels of schooling to teach various subject areas and found to have positive effects on students' academic achievement in elementary school (Baumgartner et al., 2003; Ferrier, 2007; Kadum-Bošnjak & Buršic-Križanac, 2012; Koeze, 2007), in secondary school (Baumgartner et al., 2003; Koehler, 2010), and in high school (Muthomi & Mbugua, 2014). Despite its limited use in higher education, differentiation is claimed to be appropriate and applicable in university classrooms as well (Santangelo & Tomlinson, 2012). DI has been found to be beneficial for university students in courses like Educational Psychology (Dosch & Zidon, 2014), Calculus (Chen & Chen, 2017), and Trigonometry (Leonardo et al., 2015). The use of DI in higher education EFL classrooms has also been investigated, and it was found that DI improves English

language learning in areas like reading comprehension (Liang, 2015) and vocabulary acquisition (Alavinia & Farhady, 2012).

Although DI has been repeatedly reported as an effective instructional approach, most existing DI studies widely focus on gifted or disabled learners, elementary and secondary school classrooms, and teaching contents such as mathematics, science, and reading. So far, the existing studies have not focused on the state of differentiation in higher education to teach different subject areas, including English for academic purposes. There is a considerable need for a study on the nature of differentiation in higher education EFL classrooms to further understand how DI can be used effectively to meet the needs of a large and diverse student population.

Literature Review

Differentiation has been interpreted and applied in different ways in different educational contexts. Tomlinson's (1999) differentiation model is the most frequently applied and investigated. It is based mainly on the consideration of students' readiness level, interests, and learning profile and the differentiation of content, process, and product accordingly.

DI assumes that each learner in a single classroom has a different readiness level, which should be considered when planning lessons. Readiness refers to student knowledge, understanding, and skills concerning the instruction a teacher is planning (Tomlinson, 2001). Learners' interest is another factor taken into consideration in DI. It is related to those factors that make learners engaged, curious, attentive, and motivated. According to Santangelo and Tomlinson (2009), students whose interests are considered in differentiated lessons are motivated to connect what is being taught to what they already know. The role of the learning profile in DI is closely related to learners' preferred ways of learning. A learning profile encompasses learning environment preferences such as quiet or noisy, warm or cool, still or mobile, and flexible or fixed; group orientations such as independent or self-orientation and group or peer orientation; cognitive styles such as creative or conforming, essence or facts, whole-to-part or part-to-whole, expressive or controlled, nonlinear or linear, inductive or deductive, collaboration or competition; and intelligence preferences such as analytic, practical, creative, linguistic, mathematical, visual, kinesthetic, musical, interpersonal, intrapersonal, naturalistic, and existential (Tomlinson, 2005).

According to Tomlinson (2001), instructors can mainly differentiate the content, process, and product of their instruction to respond to their students' needs. Content differentiation involves adapting the input of teaching and learning, while process differentiation requires adapting the processes through which the content is delivered. Product differentiation involves differentiating the products representing students' understanding and applications of what they have learned. In addition to these three main areas, the learning environment can also be differentiated. Learning environment differentiation is closely related to the feel and function of the classroom (Sondergeld & Schultz, 2008; Tomlinson, 2003).

Although a wide variety of instructional strategies can be utilized in DI classrooms, several specific strategies naturally correspond to DI practices. Some of the most frequently used strategies to differentiate instruction are tiered tasks, learning contracts, graphic organizers, flexible grouping, learning stations/centers, compacting, interest groups, and varying questions (Heacox, 2014; Tomlinson, 2001).

In a classroom where differentiation is applied, the learning environment is safe, supportive, collaborative, and encouraging (Heacox, 2014; Tomlinson, 2001). In such a learning environment, students have a sense of belonging and are respectful to each other (Nordlund, 2003). They are also responsible for their learning process, know that they are free to make mistakes, and are able to express themselves without hesitation (Fox & Hoffman, 2011). Teachers who implement differentiation in their classrooms need to have a growth mindset (Cunningham, 2015), facilitate the learning opportunities, and collaborate with their students, families, and other teachers effectively (Heacox, 2014; Tomlinson, 2001).

Differentiation has been investigated from several perspectives in different educational contexts. One of the most frequently studied aspects of differentiation is its effects on students' academic achievement. Differentiation has been found to have a positive effect on student learning in elementary, secondary, and high school (Baumgartner et al., 2003; Ferrier, 2007; Kadum-Bošnjak & Buršic-Križanac, 2012; Koehler, 2010; Koeze, 2007; Muthomi & Mbugua, 2014). It has also been found to positively affect the academic achievement of the students at the tertiary level (Chen & Chen, 2017; Dosch & Zidon, 2014; Leonardo et al., 2015). The implementation of differentiation in EFL classrooms has been found to impact language learning positively as well. It was found to improve foreign language learning in general (Kupchyk &

Litvinchuk, 2020), and more specifically, learning vocabulary (Alavinia & Farhady, 2012), learning writing skills (Sharmeen, 2019), and English reading comprehension (Liang, 2015). Although there is a large number of research studies revealing the positive effects of differentiation in all levels of education, some studies indicate that DI does not ensure better academic achievement compared to traditional instructional methods in early levels of schooling (Boges, 2014; Mulder, 2014; Pablico et al., 2017; Williams, 2012), at the tertiary level (Tulbure, 2011) as well as in foreign language learning (Alavinia & Sadeghi, 2013).

The effects of differentiation on affective factors such as student motivation, anxiety, and attitudes have also been the research focus in several studies. Regardless of their educational level, students receiving DI show higher levels of motivation, engagement, enthusiasm, interest, and excitement about learning during the lessons (Beloshitskii & Dushkin, 2005; Joseph, 2013; Joseph et al., 2013; Koehler, 2010; Konstantinou-Katzi et al., 2012; Kupchyk & Litvinchuk, 2020; Liang, 2015; Marghitan et al., 2016; McAdamis, 2001; Pablico et al., 2017; Tieso, 2001; Tulbure, 2011). Research results also reveal that DI helps students develop a positive attitude towards the subject matter (Karadağ & Yaşar, 2010), display higher levels of self-confidence, have better social skills by working in groups (Liang, 2015), and show improved study habits and problem-solving skills (Joseph et al., 2013).

Along with its effects on students, DI has also been reported to impact teachers who apply DI strategies in their teaching. Teachers employing higher levels of differentiation techniques were found to experience increased levels of self-efficacy (Affholder, 2003; Holzberger et al., 2013) and enhanced creativity and satisfaction (Griess & Keat, 2014).

As DI does not have a single prescribed application, it occurs differently in different classrooms depending on the students' needs. The variety in students' readiness, interest, and learning profile is prioritized, and the nature of differentiation is shaped in different ways in different contexts. Some teachers prefer to respond to their students' needs by mainly focusing on their readiness levels rather than their interests and learning profiles (Santangelo & Tomlinson, 2012), while others prefer the opposite (Tzanni, 2018). Regarding the areas of instruction differentiated based on students' needs, the variety in practices among teachers is also evident. Some teachers utilizing DI in their lessons prefer to apply process differentiation the most and the product differentiation the least (Joseph, 2013), while others prefer to differentiate the learning environment more than the content, process, and product (Santangelo & Tomlinson, 2012; Tzanni, 2018).

Research into the instructional strategies applied by teachers to differentiate instruction reveals inconsistent results. A differentiation strategy that is frequently used in one classroom may be the least preferred one in another. For example, Santangelo and Tomlinson (2009) found that teachers differentiated the content of their instruction by providing students with texts in varied levels of difficulty, while Roy et al. (2013), Tzanni (2018), and McMillan (2011) found the opposite, that is, the instructional strategy of offering students texts and assignments at various difficulty levels was not used by teachers in these studies.

The present study

To contribute to the studies on the use of DI in higher education, the present study was designed to reveal the EFL instructors' existing practices of differentiation in an English Preparatory Program at a university in Turkey. It specifically focused on three areas: identifying the student characteristics instructors consider the most during differentiation, determining the instructional areas instructors prefer to differentiate, and identifying the differentiation strategies instructors apply when teaching English. These areas of investigation were based on Tomlinson's (1999) framework for differentiation which is shaped by the idea that teachers can respond to their students' needs by tailoring the content, process, product of the instruction, and the learning environment considering the students' readiness level, interest, and learning profile. As stated frequently in the literature, despite being a promising instructional approach, the use of differentiation in university classrooms has not been investigated extensively yet (Chen & Chen, 2017; Dosch & Zidon, 2014; Santangelo & Tomlinson, 2009, 2012). This study, therefore, intends to explore the nature of the existing differentiation practices applied by tertiary-level EFL instructors.

Research questions

To investigate EFL instructors' use of DI in higher education in Turkey, the following research questions were addressed in this study:

1. *Which student characteristics do the EFL instructors consider when differentiating their instruction (readiness, interest, learning profile)?*

2. *Which areas of instruction do the EFL instructors differentiate (content, process, product, learning environment)?*

3. *What are the differentiation strategies applied by the EFL instructors during the lessons?*

Method

Research design

This study adopted a non-experimental survey approach to describe the nature of DI in university classrooms when teaching English. This descriptive approach involves administering a survey to a randomly selected sample of individuals to identify trends, attitudes, or opinions of the population of interest (Edmonds & Kennedy, 2017).

Setting

This study was conducted in the English Preparatory Program at a foundation university in Turkey. It is an English-medium university consisting of national and international students and instructors. In the English preparatory program, students are divided into three different proficiency levels; A2, B1, and B2. The curriculum of the English Preparatory Program is a structured one, and all the learning objectives and outcomes are clearly defined for each level. The instructors plan their lessons focusing on the target learning objectives and use the available course materials such as course books and supplementary materials. Although the curriculum-related areas are predetermined and structured, instructors have the flexibility to plan their lessons in a way that is most appropriate for their students and exploit the course materials in line with their students' needs provided that they cover the necessary learning objectives. In other words, they have the flexibility to utilize various materials, teaching methods, and activities depending on their students' needs.

Participants

Fifty-one instructors teaching in the English Preparatory Program participated voluntarily in this study. Forty-two (82%) instructors were female, and nine (18%) instructors were male. The participants varied in age; more than half (57%) were aged between 31 and 35. As for the proficiency levels they were teaching, thirteen instructors (26%) were teaching at A2 level, seventeen instructors (33%) at B1 level, and twenty-one instructors (41%) at B2 level. Regarding their professional experience, four instructors (8%) had teaching experience between 0-5 years, thirty instructors (59%) between 6-10 years, twelve instructors (24%) between 11-15 years, one instructor (2%) between 16-20 years, and four instructors (8%) more than 21 years. Forty instructors (78%) had a BA or/and an MA degree in English Language Teaching (ELT), whereas eleven instructors' (22%) degrees were in other fields such as English Language Literature, American Language Literature, Linguistics, Curriculum and Instruction, Translation and Interpretation, Communications, and Marketing.

Data collection instrument

The data were collected from the participants through a questionnaire adapted from Santangelo and Tomlinson (2012). There are two reasons behind using this questionnaire in the study: (a) it was initially designed based on Tomlinson's (1999) DI framework, which is also the theoretical framework of this study, and (b) it was specifically developed to be applied in a university setting to collect data from university instructors. The questionnaire went through an adaptation process for this study to make it more appropriate for collecting data from university instructors who teach English as a foreign language. In its final form, the questionnaire included three parts. Part 1 was designed to gather demographic information about the instructors. Part 2 consisted of 14 items aiming to determine the instructors' perceptions of the variance among their students' readiness (8 items), interests (2 items), and learning profile (4 items) and the impact of this variance on their teaching. In this part of the questionnaire, the respondents were asked to choose among five response choices which were *(1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.* In Part 3, there were 28 items aimed at determining the instructional strategies the instructors employ to differentiate their instruction regarding the content (7 items), process (6 items), product (6 items), and learning environment (6 items). The participants were asked to choose among five response choices which were (1) *never*, (2) *seldom*, (3) *sometimes*, (4) *often*, (5) *always*. The reliability of

the questionnaire was estimated by calculating Cronbach's alpha coefficient. Cronbach's alpha was found to be .88 for the second part of the questionnaire and .87 for the third part. The reliability of the entire questionnaire was found to be .89, which is within the acceptable range. Reliability coefficients should be at least .70 and preferably higher for research purposes (Fraenkel & Wallen, 2009).

Data collection and analysis

After getting permission from the university's research ethics committee to conduct the research, all the English preparatory program instructors were sent an email giving information about the research. Fifty-nine instructors were teaching in the English Preparatory Program at the time of the study, and 51 replied to the email stating they wanted to participate (86%). Questionnaires were distributed to the 51 instructors who volunteered to participate in the study. All participants returned the questionnaires fully completed within four days.

For the data analysis, descriptive statistics such as frequencies, means, and standard deviations were applied to analyze the data collected through the questionnaire, while Cronbach's alpha value was calculated for the determination of the reliability of the questionnaire.

Results

Student characteristics the EFL instructors consider when differentiating their instruction (readiness, interest, learning profile)

Differentiation requires acknowledging that students in a classroom differ in their characteristics, especially in their readiness level, interests, and learning profiles. Having an understanding of the variance among their students, instructors can make appropriate adaptations and adjustments to their instruction to reach all learners. To this end, the second part of the questionnaire consisted of items aiming to identify the instructors' perceptions of the variance among their students regarding their readiness, interests, and learning profile and their response to this variance through differentiation. The instructors responded to the items in the questionnaire such as *"My students differ significantly in their preferred learning modalities (e.g., visual or auditory, active or passive)"* by stating how much they agree or disagree with the given statements ranging from strongly agree to strongly disagree on a 5-point scale. The mean scores and standard deviations of instructors' responses to the items identifying their perceptions of the differences among their students regarding their readiness, interests, and learning profile are presented in Table 1:

Areas of variance in learners	M	SD
Readiness	4.00	0.88
Motivation	4.24	0.95
Study skills	4.18	0.79
Academic skills	3.88	0.95
Background knowledge of English	3.73	1.17
Interest	3.82	1.05
Learning profile	3.77	0.88
Learning modality	3.71	0.94
Grouping orientations	3.53	0.95
Average	3.86	0.90

Table1. Instructors' perceptions of the variance among their students

As can be seen in Table 1, instructors stated that their students differ from each other regarding their readiness level, interests, and learning profile (M=3.86, SD=0.90) in different degrees. They reported that the difference among their students shows itself mostly in their readiness level (M=4.00, SD=0.88) followed by their interests (M=3.82, SD=1.05) and their learning profile (M=3.77, SD=0.88).

When considering the variance in their students' readiness, instructors focused on students' motivation towards the course, study skills such as note-taking and time management, basic academic skills such as reading comprehension and written expression, and background knowledge of English. Among these areas of readiness, the students' motivation (M=4.24, SD=0.95) was reported to be the area that shows the highest variance. Motivational readiness was followed by readiness in study skills (M=4.18, SD=0.79), academic skills (M=3.88, SD=0.95), and background knowledge of English (M=3.73, SD=1.17).

Variance in students' learning profile was considered in two main areas: preferred learning modalities such as visual, auditory, active, and passive, and preferred grouping orientations such as whole class, small group, and individual. Instructors reported that their students vary in their preferred learning modalities (M=3.71, SD=0.94) and preferred grouping orientations (M=3.53, SD=0.95).

To determine which student characteristics instructors consider when differentiating their lessons, they were asked to respond to some items in the questionnaire, such as *"My understanding of variance in my students' learning modalities impacts what/how I teach"* by stating how much they agree or disagree on a 5-point scale. The instructors stated that their understanding of variance among their students' characteristics affects how they teach. Table 2 demonstrates student characteristics instructors consider when teaching English.

Areas of variance affecting how instructors teach	M	SD
Readiness	4.00	0.79
Motivation	4.10	0.81
Study skills	4.00	0.69
Academic skills	3.96	0.80
Background knowledge of English	3.92	0.85
Learning profile	3.92	0.82
Learning modality	4.08	0.72
Grouping orientations	3.76	0.91
Interest	3.78	0.83
Average	3.90	0.81

Table 2. Student characteristics instructors consider when differentiating their lessons

As Table 2 shows, instructors reported that differences among their students impact their teaching. They stated that their teaching was affected by their students' readiness (M=4.00, SD=0.79), learning profile (M=3.92, SD=0.82), and interests (M=3.78, SD=0.83). Among the areas of student readiness, the variety in student motivation (M=4.10, SD=0.81) was reported to be the first reason why instructors adapt their teaching. Instructors also considered their students' readiness level in their study skills (M=4.00, SD=0.69), basic academic skills (M=3.96, SD=0.80), and background knowledge of English (M=3.92, SD=0.85) when planning their teaching. The second area of variance affecting how instructors teach is their students' learning profile. Instructors reported that they consider their students' preferred learning modalities (M=4.08, SD=0.72) and grouping orientations (M=3.76, SD=0.91) when teaching English. In addition to the students' readiness levels and learning profiles, it was found that the instructors differentiated their lessons based on their students' interests (M=3.78, SD=0.83). Interest was the least considered student characteristic by the instructors when differentiating their instruction.

According to Table 1 and Table 2, instructors generally believed that their students varied in their readiness, interest, and learning profile and they tended to consider this variety when teaching English. It is also clear that although the instructors believed their students' interests show a wider variety than their learning profile, they considered their learning profile more compared to their interests during the differentiation process. Overall, the instructors appeared to believe that their students show the most significant difference in their readiness level and base their differentiation on the variety in students' readiness the most.

Areas of instruction the EFL instructors differentiate (content, process, product, learning environment)

The third part of the questionnaire included 25 items which aimed to identify the areas of instruction differentiated by the instructors when teaching English. These items exemplified the differentiation of content, process, product, and learning environment and required the instructors to state how often they apply these by selecting options ranging from never to always on a 5-point scale. For example, the item *"When I teach, I allow my students to select from multiple text options (e.g., read one of three)"* exemplifies content differentiation. Based on the variety in their students' characteristics, namely their readiness, interests, and learning profile, instructors stated that they differentiate the content, process, product, and learning environment in their lessons. Table 3 shows the means and standard deviations for the questionnaire items revealing the areas the instructors differentiate when teaching English:

Differentiated areas of instruction	M	SD
Learning environment	4.34	0.67
Product	3.68	0.98
Content	3.65	0.86
Process	3.58	0.91
Average	3.81	0.86

Table 3. Results showing the differentiated areas of instruction

As shown in Table 3, instructors differentiated the learning environment the most (M=4.34, SD=0.67) compared to other areas of instruction. Differentiation of the learning environment was followed by differentiation of product (M=3.68, SD=0.98), content (M=3.65, SD=0.86), and process (M=3.58, SD=0.91). The mean composite score for areas of instruction differentiated by the instructors is 3.81 (SD=0.86).

The differentiation strategies applied by the EFL instructors during the lessons

To identify the differentiation strategies used in the EFL classrooms, the questionnaire included some items regarding strategies for content, process, product, and learning environment differentiation. It was found that EFL instructors differentiated the content, process, product, and learning environment through several instructional strategies.

The most frequently differentiated area of instruction, the learning environment, was differentiated in several ways. Table 4 presents the means and standard deviations for the questionnaire items showing the strategies used by instructors when differentiating the learning environment:

Strategies to differentiate the learning environment	M	SD
Being approachable and available for students	4.66	0.52
Making students feel respected, welcome, and known	4.50	0.61
Ensuring student participation	4.34	0.59
Enhancing student attitude and motivation	4.28	0.70
Observing students' concerns	4.24	0.74
Creating a sense of belonging to the classroom among students	4.02	0.82
Average	4.34	0.67

Table 4. The strategies used to differentiate the learning environment

As presented in Table 4, the instructors reported that they differentiate the learning environment by trying to make themselves approachable and available to their students (M=4.66, SD=0.52), ensure that each student feels respected, welcome, and known (M=4.50, SD=0.61), ensure that students participate consistently and equitably during class (M=4.34, SD=0.59), enhance students' attitude and motivation towards course content (M=4.28, SD=0.70), follow up privately on behaviors or circumstances of concern (e.g., absences, low grades, the conflict between students) (M=4.24, SD=0.74), and create activities and assignments to develop a sense of belonging to the learning environment among students (M=4.02, SD=0.82). The mean composite score for learning environment differentiation is 4.34 (SD=0.67).

As for the second most frequently differentiated instructional area, product differentiation, Table 5 shows the means and standard deviations for the related items in the questionnaire:

Strategies to differentiate the product	M	SD
Supporting weak students to complete assignments	4.20	0.85
Assigning tasks enabling student interaction	4.14	0.75
Using various grouping formats for outside class tasks	3.69	1.12
Adjusting assignment deadlines	3.43	1.20
Allowing students to select a topic based on their interests	3.31	0.86
Allowing students to produce tasks in different forms	3.29	1.10
Average	3.68	0.98

Table 5. The strategies used to differentiate the product

As shown in Table 5, individual item means ranged from 3.29 to 4.20. Instructors' responses revealed that the most frequently used product differentiation strategy was providing supplemental support to students

who have difficulty completing assignments (M=4.20, SD=0.85). However, it was found that the least frequently used product differentiation strategy was creating assignments that offer format options (e.g., choosing from writing a paper, creating a visual, designing a web page, or giving a presentation) (M=3.29, SD=1.10). The mean composite score for product differentiation is 3.68 (SD=0.98).

Another area the instructors differentiate when teaching English is the content of the instruction. Table 6 shows the means and standard deviations for the items in the questionnaire related to the differentiation of content:

Strategies to differentiate content	M	SD
Providing supplemental materials for slow students	4.33	0.68
Providing supplemental support for slow students	4.12	0.84
Using examples based on students' interests	4.04	0.87
Providing supplemental materials for strong students	3.96	0.87
Using student feedback to create activities	3.82	1.03
Using materials varying in complexity	2.92	0.87
Providing students with multiple text options	2.33	0.84
Average	3.65	0.86

Table 6. The strategies used to differentiate content

According to Table 6, individual item means ranged from 2.33 to 4.33. Instructors' responses revealed that the most frequently used content differentiation strategy was providing supplemental materials and resources to support students who have difficulty understanding the course content (M= 4.33, SD=0.68). On the other hand, the least utilized content differentiation strategy was allowing students to select from multiple text options (e.g., read one of three) (M= 2.33, SD=0.84). The mean composite score for content differentiation is 3.65 (SD=0.86).

Among all areas of instruction, the least frequently differentiated area was found to be the process of instruction. Table 7 shows the means and standard deviations for each questionnaire item reflecting the strategies instructors used to differentiate the process:

Strategies to differentiate process	M	SD
Using a variety of grouping formats	4.47	0.61
Assigning extra tasks to strong students	3.78	0.83
Grouping students based on their readiness level	3.75	1.06
Grouping students based on their learning modalities	3.25	0.98
Allowing students to select their preferred grouping format	3.16	1.05
Grouping students based on their interests	3.12	0.92
Average	3.58	0.91

Table 7. Results showing the strategies used to differentiate process

As presented in Table 7, individual item means for the strategies to differentiate process ranged from 3.12 to 4.47. Instructors' responses revealed that the most frequently used process differentiation strategy was using a variety of grouping formats during class (e.g., whole class, small group, individual) (M=4.47, SD=0.61). On the other hand, the least frequently used strategy for process differentiation was reported to be grouping students based on their interests (M=3.12, SD=0.92). The mean composite score for process differentiation is 3.58 (SD=0.91).

Discussion

This study investigated the use of DI in EFL classrooms in higher education, specifically in an English Preparatory Program in a Turkish context. The findings demonstrated that EFL instructors differentiated the learning environment the most, primarily based on their students' readiness level, using several differentiation strategies.

This study has shown that EFL instructors believed the most notable difference among their students was their readiness, particularly their motivation level, and they reported considering the variance in readiness level among students when differentiating their instruction. This result is consistent with some study findings (Santangelo & Tomlinson, 2012), while it conflicts with others (Tzanni, 2018). Santangelo and Tomlinson investigated teacher educators' use of DI in a public university in the USA and found that they considered their students' readiness level the most when differentiating their instruction. Tzanni, on the other hand,

showed that English teachers teaching at different levels of schooling considered their students' readiness level the least when applying differentiation. This difference in teachers' tendencies to pay more attention to a specific student characteristic may be caused by their students' age and the level of schooling. It may be possible for university instructors to focus on their students' academic readiness level rather than their interests and learning profile regardless of the subject matter they are teaching.

As for the areas of instruction, in the present study, instructors tended to differentiate the learning environment more than content, process, and product when teaching English. This finding supports the previous studies that have found the learning environment to be the most frequently differentiated area (Santangelo & Tomlinson, 2012; Tzanni, 2018) while it conflicts with some others revealing that process is differentiated the most (Joseph, 2013). A possible reason behind the finding showing that instructors differentiate the learning environment more than other areas of instruction may be that learning environment differentiation generally involves being approachable to all learners and creating a positive learning atmosphere. Heacox (2014) claims that successful differentiation occurs in supportive learning environments. Regardless of the subject matter and level of schooling, it seems common for teachers to create such an effective learning environment by making the necessary adaptations and arrangements for students depending on their needs. As Tomlinson (2001) states, effective learning environments have specific characteristics, such as a welcoming atmosphere that encourages collaboration between learners and teachers.

The most frequently used differentiation strategies in this study were providing supplemental materials for slow learners, using a variety of grouping formats, and supporting weak students to complete assignments. However, providing students with multiple text options, grouping students based on their interests, and allowing students to produce tasks in different forms were the least frequently applied ones. This finding shows similarities and differences with other studies. Some studies showed that the most frequently used strategy was adjusting the amount of work based on students' readiness (Roy et al., 2013), while the least frequently used ones were providing students with materials with varying levels of complexity (Roy et al., 2013; Tzanni, 2018), offering students multiple text options (Santangelo & Tomlinson, 2012; Tzanni, 2018), and providing learners who mastered the course content with supplemental materials, resources and tasks (Santangelo & Tomlinson, 2012). The wide variety among the use of instructional strategies is not surprising due to the context-based and needs-based nature of differentiation. As differentiation does not pose a single format or a specific way to be applied in every classroom, instructors are able to use any strategy appropriate for responding to their students' needs from a rich array of options (Tomlinson, 2001).

The findings reveal that EFL instructors teaching at a Turkish university use differentiation to meet their students' diverse needs. It also shows that regardless of the level of education, differentiation is not a fixed method that can be employed in the same ways in any classroom with any student population. Instead it is a one-size-does-not-fit-all approach that can only be tailored by the instructors considering their students' needs.

Conclusion and Implications

The present study significantly contributes to the literature by providing information about the use of DI in higher education EFL contexts, particularly in an English preparatory program. The results showed that EFL instructors in the English preparatory program applied some instructional strategies to differentiate the content, process, product, and learning environment considering their students' readiness, interest, and learning profile; however, they predominantly differentiated the learning environment considering their students' readiness level. Furthermore, among several instructional strategies, the most frequently used differentiation strategies were providing supplemental materials for slow learners, using a variety of grouping formats, and supporting weak students to complete assignments while providing students with multiple text options, grouping students based on their interests, and allowing students to produce tasks in different forms were the least frequently applied ones.

This study has certain limitations that need to be considered when interpreting the findings. First of all, the data were collected through a questionnaire that required the participants to express themselves through self-report, which may not fully reflect the reality. The participants may be biased when they report their experience of DI. They may be consciously exaggerating or simply unaware of the actual situation. Therefore, in similar future studies, the triangulation of data through classroom observations would provide a better and more realistic understanding of the nature of DI in teaching English in university settings.

Moreover, the data were collected from the EFL instructors teaching at a single university. To be able to generalize the results, future research needs to have a larger sample representing different universities.

As stated by some researchers, DI can be applied in higher education successfully to respond to the needs of diverse student populations (Joseph, 2013; Joseph et al., 2013; Santangelo & Tomlinson, 2009, 2012). This study also reflects that university instructors can apply differentiation strategies when teaching English.

References

Affholder, L. P. (2003). *Differentiated instruction in inclusive elementary classrooms* (Publication No. 310729) [Master's thesis, University of Kansas]. ProQuest Dissertations & Theses Global.

Alavinia, P., & Farhady, S. (2012). Using differentiated instruction to teach vocabulary in mixed ability classes with a focus on multiple intelligences and learning styles. *International Journal of Applied Science and Technology*, *2*(4), 72-82. https://www.ijastnet.com/journals/Vol_2_No_4_April_2012/11.pdf

Alavinia, P., & Sadeghi, T. (2013). The impact of differentiated task-based instruction via heeding learning styles on EFL learners' feasible proficiency gains. *The Southeast Asian Journal of English Language Studies*, *19*(1), 75-91. http://journalarticle.ukm.my/6142/1/1773-5055-1-PB%5B1%5D.pdf

Barrington, E. (2004). Teaching to student diversity in higher education: How Multiple Intelligence Theory can help. *Teaching in Higher Education*, *9*(4), 421-434. https://doi.org/10.1080/1356251042000252363

Baumgartner, T., Lipowski, M. B., & Rush, C. (2003). *Increasing reading achievement of primary and middle school students through differentiated instruction* (ED479203) Eric. https://eric.ed.gov/?id=ED479203

Beloshitskii, A. V., & Dushkin, A. V. (2005). An experiment in differentiated instruction in a higher technical educational institution. *Russian Education and Society*, *47*(9), 54-61. https://doi.org/10.1080/10609393.2005.11056996

Boges, C. (2014). *The effects of differentiated instruction on the achievement scores of struggling fourth grade readers* [Unpublished doctoral dissertation]. Walden University. https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=1174&context=dissertations&httpsredir=1&referer=

Calderon, A. J. (2018). *Massification of higher education revisited*. RMIT University. http://cdn02.pucp.education/academico/2018/08/23165810/na_mass_revis_230818.pdf

Chen, J.-H., & Chen, Y-C. (2017). Differentiated instruction in a calculus curriculum for college students in Taiwan. *Journal of Education and Learning*, *7*(1), 88-95. http://doi.org/10.5539/jel.v7n1p88

Cunningham, C. J. (2015). Differentiation revealed: A multiple-methods qualitative study on the implementation of differentiated instruction in a mixed-ability elementary classroom (No. 1298) [Doctoral dissertation, University of Arkansas]. Graduate Theses and Dissertations. https://scholarworks.uark.edu/etd/1298

Dosch, M., & Zidon, M. (2014). "The course fit us": Differentiated instruction in the college classroom. *International Journal of Teaching and Learning in Higher Education*, *26*(3), 343-357 https://www.isetl.org/ijtlhe/pdf/IJTLHE1799.pdf

Edmonds, W. A., & Kennedy, T. D. (2017). *An applied guide to research designs: Quantitative, qualitative, and mixed methods* (2nd ed.). Sage Publications.

Ferrier, A. M. (2007). *The effects of differentiated instruction on academic achievement in a second-grade science classroom* (Publication No. 3255550) [Master's thesis, Walden University]. ProQuest Dissertations & Theses Global.

Fox, J., & Hoffman, W. (2011). *The differentiated instruction: Book of lists*. Jossey-Bass.

Fraenkel, J. R., & Wallen, N. E. (2009). *Design and evaluate research in education* (7th ed.). McGraw-Hill.

Griess, C. J., & Keat, J. B. (2014). Practice what we preach: Differentiating instruction and assessment in a higher education classroom as a model of effective pedagogy for early childhood teacher education candidates. *Journal of Early Childhood Teacher Education*, *35*(1), 98-109. https://doi.org/10.1080/10901027.2013.874381

Heacox, D. (2014). *Differentiating instruction in the regular classroom: How to reach and teach all learners*. Free Spirit Publishing.

Holzberger, D., Philipp, A., & Kunter, M. (2013). How teachers' self-efficacy is related to instructional quality: A longitudinal analysis. *Journal of Educational Psychology*, *105*(3), 774-786. https://doi.org/10.1037/a0032198

Joseph, S. (2013). Differentiating instruction: Experiences of pre-service and in-service trained teachers. *Caribbean Curriculum*, *20*, 31-51. https://journals.sta.uwi.edu/ojs/index.php/cc/article/viewFile/555/487

Joseph, S., Thomas, M., Simonette, G., & Ramsook, L. (2013). The impact of differentiated instruction in a teacher education setting: Successes and challenges. *International Journal of Higher Education*, *2*(3), 28-40. https://doi.org/10.5430/ijhe.v2n3p28

Kadum-Bošnjak S., & Buršic-Križanac, B. (2012). Impact of differentiated instruction on achievement in teaching mathematics to lower-stage grades. *Metodicki Obzori*, *7*(2), 15-29. https://doi.org/10.32728/mo.07.2.2012.02

Karadağ, R., & Yaşar, Ş. (2010). Effects of differentiated instruction on students' attitudes towards Turkish courses: An action research. *Procedia-Social and Behavioral Sciences*, *9*, 1394-1399. https://doi.org/10.1016/j.sbspro.2010.12.340

Koehler, S. (2010). *Effects of differentiating for readiness, interest and learning profile on engagement and understanding* [Unpublished master's thesis]. St. John Fisher University. http://fisherpub.sjfc.edu/mathcs_etd_masters/91

Koeze, P. A. (2007). *Differentiated instruction: The effect on student achievement in an elementary school* [Unpublished doctoral dissertation]. Eastern Michigan University. http://commons.emich.edu/theses/31

Konstantinou-Katzi, P., Tsolaki, E., Meletiou-Mavrotheris, M., & Koutselini, M. (2012). Differentiation of teaching and learning mathematics: An action research study in tertiary education. *International Journal of Mathematical Education in Science and Technology*, *44*(3), 332-349. https://doi.org/10.1080/0020739X.2012.714491

Kupchyk, L., & Litvinchuk, A. (2020). Differentiated instruction in English learning, teaching and assessment in non-language universities. *Advanced Education*, 15, 89-96. https://doi.org/10.20535/2410-8286.168585

Leonardo, R. R., Nivera, G. C., & Reyes, A. S. (2015). Effects of differentiated instruction on college students' achievement in and attitude towards trigonometry. *The Normal Lights Journal of Teacher Education*, *9*(1), 119-133.

Liang, L. (2015). *A study of EFL reading via differentiated instruction in a technological university* (No. U0002-0309201509163300) [Master's thesis], Tamkang University. https://etds.lib.tku.edu.tw/ETDS/Home/Detail/U0002-0309201509163300

Marghitan, A. L., Tulbure, C., & Gavrila, C. (2016). Students' perspective regarding the necessity and opportunity of using the differentiated instruction in higher education. *Bulletin of the Transilvania University of Braşov*, *9*(59), 179-186. http://webbut2.unitbv.ro/BU2016/Series%20VII/FIS/20_MARGHITAN.pdf

McAdamis, S. (2001). Individual paths. *Journal of Staff Development*, *22*(2), 48-50.

McMillan, A. (2011). *The relationship between professional learning and middle school teachers' knowledge and use of differentiated instruction* (No. 871) [Doctoral dissertation, Walden University]. Walden Dissertations and Doctoral Studies. https://scholarworks.waldenu.edu/dissertations/871

Mulder, Q. (2014). *The effect of differentiated instruction on student mathematics achievement in primary school classrooms* [Unpublished Master's thesis]. University of Twente. https://purl.utwente.nl/essays/66645

Muthomi, M. W., & Mbugua, Z. K. (2014). Effectiveness of differentiated instruction on secondary school students' achievement in mathematics. *International Journal of Applied Science and Technology*, *4*(1), 116-122. http://www.ijastnet.com/journals/Vol_4_No_1_January_2014/12.pdf

Nordlund, M. (2003). *Differentiated instruction: Meeting the educational needs of all students in your classroom*. Scarecrow Press.

Pablico, J. R., Diack, M., & Lawson, A. (2017). Differentiated instruction in the high school science classroom: Qualitative and quantitative analyses. *International Journal of Learning, Teaching, and Educational Research*, *16*(7), 30-54. https://www.ijlter.org/index.php/ijlter/article/view/957/pdf

Roy, A., Guay, F., & Valois, P. (2013). Teaching to address diverse learning needs: Development and validation of a Differentiated Instruction Scale. *International Journal of Inclusive Education*, *17*(11), 1186-1204. https://doi.org/10.1080/13603116.2012.743604

Santangelo, T., & Tomlinson, C. A. (2009). The application of differentiated instruction in post-secondary environments: Benefits, challenges, and future directions. *International Journal of Teaching and Learning in Higher Education*, *20*(3), 307-323. https://www.isetl.org/ijtlhe/pdf/IJTLHE366.pdf

Santangelo, T., & Tomlinson, C. A. (2012). Teacher educators' perceptions and use of differentiated instruction practices: An exploratory investigation. *Action in Teacher Education*, *34*(4), 309-327. https://doi.org/10.1080/01626620.2012.717032

Sharmeen, I. (2019). Impact of differentiated instruction on the writing process of ESL learners. *ELF Annual Research Journal*, 21, 130-153.

Sondergeld, T. A., & Schultz, R. A. (2008). Science, standards, and differentiation: It really can be fun! *Gifted Child Today*, *31*(1), 34-40. https://doi.org/10.4219/gct-2008-694

Tieso, C. (2001). Curriculum: Broad brushstrokes or paint-by-the-numbers? *Teacher Educator*, *36*(3), 199-213. https://doi.org/10.1080/08878730109555264

Tomlinson, C. A. (1999). *The differentiated classroom: Responding to the needs of all learners*. ASCD.

Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.). ASCD.

Tomlinson, C. A. (2003). *Fulfilling the promise of the differentiated classroom*. ASCD.

Tomlinson, C. A. (2005). Grading and differentiation: Paradox or good practice? *Theory into Practice*, *44*(3), 262-269. https://doi.org/10.1207/s15430421tip4403_11

Tulbure, C. (2011). Intensifying the intrinsic motivation by differentiating the teaching strategies in higher education. *Bulletin of the Transilvania University of Braşov*, *4*(53), 97-102.

Tzanni, V. (2018). Exploring differentiated instruction in TESOL: The teachers' beliefs and practices in Greece. *Research Papers in Language Teaching and Learning*, *9*(1), 149-165. https://rpltl.eap.gr/images/2018/09-01-149-Tzanni.pdf

Williams, K. G. (2012). *The effect of differentiated instruction on standardized assessment performance of students in the middle school mathematics classroom* (No. 573) [Doctoral dissertation, Liberty University]. Doctoral Dissertations and Projects. https://digitalcommons.liberty.edu/doctoral/573