www.ijemst.net

Organizational, Technological, and Pedagogical Conditions for Differentiated Instruction of Teaching English as a Foreign Language

Galiya Sarzhanova
Academician E.A. Buketov Karaganda University, Kazakhstan

Malika Otynshiyeva
Academician E.A. Buketov Karaganda University, Kazakhstan

Gulnaz Tleuzhanova
Academician E.A. Buketov Karaganda University, Kazakhstan

Dariya Assanova
Academician E.A. Buketov Karaganda University, Kazakhstan

Aigul Sadvakassova
L.N. Gumilyov Eurasian National University, Kazakhstan

To cite this article:

Sarzhanova, G., Otynshiyeva, M., Tleuzhanova, G., Assanova, D., & Sadvakassova, A. (2023). Organizational, technological, and pedagogical conditions for differentiated instruction of teaching English as a foreign language. *International Journal of Education in Mathematics, Science, and Technology (IJEMST), 11*(1), 74-95. https://doi.org/10.46328/ijemst.2809

International Journal of Education in Mathematics, Science and Technology

2023, Vol. 11, No. 1, 74-95 https://doi.org/10.46328/ijemst.2809

Organizational, Technological, and Pedagogical Conditions for Differentiated Instruction of Teaching English as a Foreign Language

Galiya Sarzhanova, Malika Otynshiyeva, Gulnaz Tleuzhanova, Dariya Assanova, Aigul Sadvakassova

Article Info

Article History

Received:
11 February 2022
Accepted:
18 August 2022

Keywords

Differentiated instructional self-efficacy
Pedagogical competence
Technological competence
Foreign language teaching
Kazakhstan

Abstract

The aim of this study is to examine the relationships between differentiated instruction, pedagogical and technological competencies of students studying in the foreign language department. Differentiated instructional self-efficacy, pedagogical and technological competencies of students studying in foreign languages departments were examined in terms of grade level and perception of academic achievement within the scope of the comparative relational survey model. In the study, the relationships between differentiated instructional self-efficacy and pedagogical and technological competencies of students studying in foreign language departments were also examined on the basis of the relational survey model. The study was carried out on 234 students studying in foreign languages departments of different universities in Kazakhstan. Differentiated instructional self-efficacy, pedagogical and technological competence scales in the Likert-form were used to collect the research data. In the study, descriptive statistics F test and Regression analysis techniques were used in the analysis of the data. According to the research findings, the differentiated instruction self-efficacy, pedagogical and technological competencies of foreign language students were found to be moderate. Differentiated instructional self-efficacy, pedagogical and technological competencies of foreign language students differ according to their classroom and academic achievement perceptions. Finally, the pedagogical and technological competencies of foreign language students significantly affect their self-efficacy towards differentiated instruction.

Introduction

Foreign language education is useful in teaching a child to understand and be tolerant of others, as well as teaching a child to communicate in that language. Foreign language also teaches the child a lot about his/her own language and improves communication, grammar and usage in his/her mother tongue (Black, 1984; Tleuzhanova et al., 2021). Moreover, foreign language teaching is a great tool for teaching children to generate new ideas, think and problem-solving skills (Balcı & Sünbül, 2015; Feldhusen & Kolloff, 1978; Feldhusen & Wyman, 1980). Although there are learning designs based on constructivism, such as collaborative learning, content-oriented learning and

task-oriented learning in language teaching (Şengül & Sünbül, 2016), these designs are used one by one in foreign language lessons and are insufficient to respond to the differing needs of students. The use of a single language teaching design will be difficult to meet the needs of such a group, particularly for university students, who are a group whose characteristics can differ even within themselves. Considering what has been explained above, it has been understood through the literature review that there is a great need for this subject.

Differentiation is a hot topic in education today. In recent years, policy makers and researchers have encouraged teachers to embrace diversity and adapt their teaching to the different learning needs of students in their classrooms (Schleicher, 2016; Unesco, 2017). Differentiation is a teaching philosophy based on a deep respect for students, acceptance of their differences, and a drive to help all students improve. Such ideas imply that teachers actively change the curriculum, teaching methods, resources, learning activities, or requirements for student products to better meet students' learning needs (Tomlinson et al, 2003).

A number of developments in education have increased the need for differentiated instruction. First, contemporary classrooms are becoming relatively heterogeneous due to approaches that focus on the inclusion of students from different cultural and linguistic backgrounds and the inclusive teaching of the different skill areas required by the foreign language field (Smale-Jacobse et al., 2019; Rock et al., 2008; Tomlinson, 2015). Because early stratification of students can have undesirable effects on the educational opportunities of students with different backgrounds, addressing students' learning needs by adaptively teaching in heterogeneous classrooms has been suggested as the best choice for a fair education system (Schofield, 2010; OECD, 2012, 2018). In addition, there are significant differences among students in relatively homogeneous classrooms in terms of many factors (Wilkinson & Penney, 2014). Secondly, it is a scientifically accepted fact that learners have different learning needs and a one-size-fits-all approach is not enough (Akdeniz et al., 2016; Subban, 2006). Policy makers and education administrators emphasize that all students should be supported to develop their knowledge and skills at their own level (Rock et al., 2008; Schleicher, 2016; Unesco, 2017; Kyriakides et al., 2018).

Several studies indicate that the environments that take the individual differences of the students into account the most are the classrooms where differentiated instruction is applied (Demir, 2013). Hall (2002) defines differentiated instruction as identifying all these different characteristics and maximizing each student according to himself. Likewise, Gregory & Chapman (2002) define differentiated instruction as a philosophy that expresses teachers' planning according to their students' individual differences rather than a tool. Teachers in classrooms where differentiated instruction is applied differentiate instruction as to the characteristics of their students and design a teaching plan for their students (Avcı & Yüksel, 2014). The main objective here is to determine the learning styles of the students and to organize the learning and teaching processes according to these styles. Thus, students perform activities appropriate for different levels of readiness, learning styles and interests. Students compete with themselves, not with each other (Tomlinson, 2014). In these classes, teachers stated that students' academic achievement and taking responsibility for learning increased (Driskill, 2010).

According to Tomlinson (1995), differentiated instruction is a learning experience in which various ways are used for students to discover the content of the program, activities and processes are carried out for students' meaningful

learning, reaching their own knowledge and ideas, and students can make their choices to show and exhibit what they have learned. According to Skowron (2001), it is an approach that argues that students need different types of learning. Gregory & Chapman (2002) define differentiated instruction as a philosophy rather than a tool that allows teachers to plan to meet the individual needs of different students in their classrooms. The basis of this philosophy is to meet the needs of every learner. Hall, Strangman, and Meyer (2002) stated in their study that differentiating education means that students have different prior knowledge, their readiness levels, language options, their preferences in learning, and the diversity of their interests. These differences stem from students' prior knowledge, experiences, learning options, intelligence levels, and personal interests (Rule & Lord, 2003).

Differentiated instruction gives academically successful students the opportunity to challenge themselves and enables them to raise their level to a higher level by working. It supports students with academic difficulties by giving them the necessary tasks and increases their motivation. That is, teachers can give students slightly easier tasks while giving higher-level students slightly more challenging tasks. Thus, instead of getting lost in a big classroom, they can gain the sensitivity they need to work on a subject that they think is difficult (Good, 2006). In addition, since students have their own learning options, they both enjoy their work and increase their motivation.

The purpose of differentiated instruction for teachers is to change their role from classroom commander to time manager and student helper. The primary role of the teacher is to make students understand that they are responsible for their own learning, rather than imparting information. The two main goals of differentiation constitute the answer to the question “Why differentiated instruction?”: 1- To raise the standards of the general education program to the highest level for all students, 2- To provide the appropriate program for the students in need (Brown, 2004; Hartwig & Schwabe, 2018). In this context, in teaching English as a foreign language, students' different readiness, whether they have an interest in English, foreign language learning strategies should be taken into account, and teaching should be planned and designed according to these factors. Therefore, every student will have the opportunity to learn and be successful in a foreign language (Billie, 2015).

Teachers' pedagogical competencies and their ability to use contemporary teaching technologies have a significant impact on implementing differentiated instruction (Kara, 2020; Sarzhanova & Alimbekova, 2016; Tao & Gao, 2022; Toleubekova & Sarzhanova, 2018). Academically, "teaching profession knowledge" is expressed as pedagogical formation for the education given to teacher candidates to gain the knowledge, skills, attitudes and values required by the teaching profession (Çapri & Çelikkaleli, 2008). The concept of pedagogy, known as “Paidagoge” in Greek, means “child management”, “science and art of teaching children” and “educational science and theory”. Formation comes from the English word "Formation". In Turkish, it can be defined as formation, cultivation and formation (Sünbül, 2010). When pedagogical formation is considered as a whole, it can be defined as a qualification required to realize teaching-learning processes or a training required to become a teacher (Yapıcı & Yapıcı, 2013). In this sense, as a result of the pedagogical formation training they receive, foreign language teacher candidates need to create behavioral changes appropriate for the profession in the cognitive, affective and psychomotor fields, and acquire strategic information such as what, how and when to teach within their effective teaching qualifications (Doğan & Çoban, 2009; Smagulova et al., 2021).

Another factor concerning differentiated instruction is the use of technology in lessons and the competence of teachers in this regard. Studies on foreign language teachers' use of technology and as an important component of their online teaching experience often begin with general questions about language teachers' perceptions and competencies regarding technology and the advantages and disadvantages of online teaching (Tarrayo, Paz, and Gepila, 2022; Toleubekova & Sarzhanova, 2016). The most frequently highlighted disadvantages are limited student participation, uncertainty in students' understanding of learning content, technical problems, and lack of technological skills. Cheung's (2022) case study of secondary school ESL teachers in Hong Kong reveals that language teachers' technology use is mediated not only by their technological competence but also by their pedagogical beliefs. The large-scale study of Xu, Jin, Deifell, and Angus (2022) on foreign language teachers in the United States examined the important role of self-confidence in language teachers' use of technology and their competence in using instructional technologies. As teachers assume primary responsibility for adapting to online and technology-assisted teaching, their own competence is paramount and therefore such studies discuss the need to provide hands-on and language-specific professional support through professional communities of language teachers.

Another important research area has focused on the design and implementation of pedagogical activities to facilitate peer interaction and/or teacher-student communication in technology-assisted teaching (Ferdiansyah, Ridho, Sembilan, Sembilan & Zahro, 2020; Porto, Golubeva & Bayram, 2022; Sünbül, Gündüz & Yilmaz). The concept of technology collaboration-oriented pedagogy pointed out the importance of integrating it into pre-service language teacher education for pedagogical task design (Ekin, Balaman & Bademkorkmaz, 2022). Technology-collaboration is also material for language teachers to promote flexible learning, contribute to a more inclusive classroom for students with different technology access (Tarrayo & Anudin, 2022) or with different English proficiency levels (Glas, Catalán, Donner & Donoso, 2022). It also shows itself in its design. The above-mentioned studies are discussed in relation to topics such as differentiated instruction either in language program design (Sun, 2022) or in language teacher education (Glas et al., 2022).

Technological competencies of teachers have an important role in implementing differentiated instruction. Teachers who have competence in instructional technologies will use these technologies more actively and efficiently in their lessons and in implementing instructional strategies (Doğru, 2020; Kaleli, 2021; Kara, 2021; Tleuzhanova et al., 2019). Developing technological competencies for future teachers will positively affect the quality of foreign language education, as in all other fields (European Commission, 2016; Heuling, Wild & Vest, 2021; Kibici, 2022). Developing technologies have created learning opportunities that challenge traditional pedagogical approaches in foreign language learning through online software. If prospective teachers do not see their educators as role models in the use of new technologies in education, they are unlikely to be inspired by them to apply technology in the classroom (García-Vandewalle et al., 2021). Teachers cannot use differentiated instruction effectively if they do not master the skills of adapting technology to their lessons (Baş, Kubiatko & Sünbül, 2016; Ramírez-Montoya et al., 2017). They cannot effectively teach a subject without mastering ICT skills, overcoming isolated pockets of knowledge in technology, content, or education. There are serious inadequacies in the development of foreign language teachers' technological competencies (Chapelle, 2003; Çuhadar & Yücel, 2010). A limited number of professional development activities are organized in this regard,

and the majority of professional development activities are carried out with traditional methods without adequate consideration of teacher needs (Garrett, 2009; Kibici, 2022). It is likely to conclude that there are serious problems about the technological competence of foreign language teachers, considering that in-service training activities do not contribute enough to the individual and professional development of teachers (Kibici & Sarıkaya, 2021).

The key to successful foreign language teaching lies in the ability of prospective teachers to effectively integrate technology and subject areas with pedagogy. Teachers need to use differentiated instructional processes and teaching methods and instructional technologies effectively to transform content knowledge into content that students can understand and learn [Mishra & Kohler, 2006; Thekes, 2021]. It is essential for foreign language teachers and prospective teachers to have knowledge, skills and competencies in order to effectively use differentiated instruction and technology in their lessons, and to consider appropriate pedagogical approaches when using them (Koh & Chai, 2011; Paudel, 2021). Although studies investigating the effect of differentiated instruction on the learning performance of students at secondary, high school and primary school levels in different courses (Demir 2013; Kaplan, 2016; Karip, 2016; Yabaş, 2008) have been encountered in the literature, it is possible to analyze foreign language students' differentiated instruction, technology and pedagogy competencies with a holistic approach. No study has been found. In this context, it is thought that the study will contribute to the relevant literature. In this context, in this study, the self-efficacy, technological and pedagogical competencies of the students of the foreign languages department on differentiated instruction were examined in a multi-dimensional and relational way in order to contribute to the application dimensions of the relevant subject area in the literature. In relation to this purpose, answers to the following questions were sought in the study.

1. What is the level of self-efficacy of the students of the department of foreign languages towards differentiated instruction?
2. What are the pedagogical competencies of the students of the foreign languages department?
3. What is the technological competence of the students of the foreign languages department?
4. Do foreign languages department students' self-efficacy, technological and pedagogical competencies for differentiated instruction differ significantly according to grade level?
5. Do foreign languages department students' self-efficacy, technological and pedagogical competencies for differentiated instruction differ significantly according to their perception of academic achievement?
6. Do the technological and pedagogical competencies of foreign languages department students significantly affect their self-efficacy for differentiated instruction?

Method

The aim of this study is to examine the relationships between differentiated instruction, pedagogical and technological competencies of students studying in the foreign language department. In addition, it was also examined whether the participants showed a significant difference in terms of differentiated instruction, pedagogical and technological competencies, grade level and perceived success levels. In this section, the model, sample, measurement tools and data analysis techniques used in the research will be defined. This research was carried out on the basis of comparative associative screening and relational screening models from screening models. Survey models are research models that aim to describe a past or present situation as it is. The main

purpose of these models is to describe the existing situation as it is. In comparison type relational screening models, at least two variables are found and groups are formed according to one of them and it is examined whether there is a differentiation between them according to the other variable (Sünbül, Yılmaz & Küçüktığlı, 2009). In this research, the comparison type of which is a relational survey, it is aimed to determine the differentiated instruction, pedagogical and technological competencies of the students studying in foreign language departments and to examine them in terms of various variables. Relational screening models, on the other hand, are defined as research models that aim to determine the existence and/or degree of co-change between two or more variables. In correlation type relationship searches, it is tried to learn whether the variables change together and if there is a change, how. On this basis, the relationships between differentiated instruction, pedagogical and technological competencies of students studying in foreign language departments were examined in this study.

The sample of this study consists of students studying in foreign language education departments of universities in Kazakhstan. The sample consists of 234 foreign languages department students selected randomly. The sample of students studying in the foreign languages department shows a balanced distribution according to the 1st, 2nd, 3rd and 4th grades. The accessibility of the sample was effective in selecting the sample from the relevant universities. In the study, criterion sampling method was used to determine the study group. The basic understanding in criterion sampling method is to study all cases that meet a set of predetermined criteria (Yıldırım & Şimşek, 2008). The basic criterion here is that university students are studying in foreign language education departments.

Data Collection Tools

In this section, the data collection tools used by the researcher in order to obtain the necessary information for the purpose of the research are given. For what purpose the data collection tools were used, by whom they were developed, and by which methods their validity and reliability were tested are explained in detail. For this purpose, the data of the research were obtained by applying differentiated instructional self-efficacy, pedagogical competence and technological competence scales to foreign language students studying at two different universities in Kazakhstan. The application took about 3 weeks. All groups were explained about the application and the researchers were with the students during the application process. It was observed that the students of the foreign language department answered the scales in approximately 30 minutes. The answered measurement tools were collected and reviewed one by one. Measurement tools that were left blank, incomplete or incorrectly answered were considered invalid and were not included in the evaluation.

In this study, a Likert-form scale including 36 items developed by Roy, Guay, and Valois (2013) was used to determine self-efficacy levels for differentiated instruction. When the KMO value and Barlett's test results were calculated, it was seen that the items were suitable for factorization. As a result of the explanatory and confirmatory factor analysis, it was determined that the scale was collected in three dimensions as planning, implementation and evaluation. There are 10 items with factor loads between 0.40 and 0.80 in the "Planning" dimension, 10 items with factor loads between 0.41 and 0.65 in the "Practice" dimension, and finally 5 items with

factor loads between 0.44 and 0.70 in the "Assessment" dimension. This three-dimensional structure explains 58.43% of the total variance. The reliability coefficients were found to be 0.92, 0.88, 0.89 and 0.93 in the sub-dimensions of "Planning", "Practice", "Evaluation" and in total, respectively. Considering these statistics, it was concluded that the psychometric properties of the Self-Efficacy Scale for Differentiated Instruction were sufficient.

The measurement tool developed by Tınmaz (2018) was used to determine the pedagogical proficiency levels of foreign language department students. Likert type measurement tool consists of 20 items. Explanatory and confirmatory factor analyzes were used for the validity of the scale, Cronbach Alpha internal consistency coefficient and two-half test reliability were examined for the reliability and item discrimination was also checked. As a result of exploratory factor analysis, a single factor structure emerged. The 20-item scale explains 54% of students' views on pedagogical competencies. The Cronbach Alpha internal consistency coefficient of the scale is .93, and the two-half test reliability is .87. All these results show that the Pedagogical Proficiency Scale is a valid and highly reliable measurement tool that can be used to measure the pedagogical competencies of foreign languages department students.

In order to determine the technological proficiency levels of foreign language department students, the teacher's 'Technology Proficiency Scale' developed by Bayraktar (2015) was adapted again on the sample by the researcher. The prepared scale was applied to students studying in foreign language education departments in different universities for validity and reliability studies. 5-point Likert-type grading was used for the opinions of the subjects in the sample about the items in the scale. This rating is scored as strongly disagree (1), somewhat agree (2), undecided (3), strongly agree (4), strongly agree (5). The scale was applied to the study group for construct validity and reliability studies. In line with the data obtained from this application, "exploratory factor analysis" was applied for construct validity. In the exploratory factor analysis, while determining the items to be included in the scale, care was taken to ensure that the load values of the items were at least .30 and that the items were included in a single factor. The reliability of the scale was also checked with the internal consistency coefficient. In the exploratory factor analysis, 1 item that disrupted the structure was removed from the scale, and factor analysis was applied to the 23-item scale again. In order to perform factor analysis, first of all, KMO and Bartlett Sphericity test values were examined. Since the data obtained by looking at the KMO value of .82 and the Bartlett Sphericity test showed significant differences, it was decided that factor analysis of the scale was appropriate. As a result of factor analysis, it was found that the scale had a one-dimensional structure consisting of 23 items. The internal consistency coefficient of the structure of the scale, which explains 52.1% of the total variance, is .85. Scales with a reliability coefficient of .60 and above are considered highly reliable, while scales with a reliability coefficient of .80 and above are considered to be highly reliable (Yılmaz & Sünbül, 2009). These results show that the scale is valid and reliable.

Data Analysis Techniques

Parametric analysis techniques were used to compare and analyze the scores of the foreign languages department students who participated in the study from the differentiated instructional self-efficacy, pedagogical competence

and technological competence scales according to the variables of grade level and perception of academic achievement. Parametric tests are based on a number of assumptions. These assumptions were checked before the analysis was performed. First, it was investigated whether there were observations in the data set as outliers that made the normal distribution difficult. To determine the extreme values in the data set, box plots were created and standardized Z values were calculated. When the results obtained are examined, it is understood that there is no extreme value in the data set that makes it difficult to achieve the normal distribution. After this stage, it was investigated whether the scores obtained from the differentiated instructional self-efficacy, pedagogical competence and technological competence scales had a normal distribution. In studies with a large sample size, it is considered sufficient to have skewness and kurtosis coefficients in the range of ±2 in order to meet the assumption of normal distribution (George & Mallery, 2010). It was determined that the skewness and kurtosis values of the distributions were within the specified range, and the data were distributed very close to normal. According to this result, it has been understood that it is appropriate to use parametric tests in the analysis of data. In this context, One Waf ANOVA (F test) technique was used to compare the differentiated instructional self-efficacy, pedagogical competence and technological competence scores of the students of the foreign languages department. In determining the arithmetic averages, the score range was determined as 1.00-1.79 strongly disagree, 1.80-2.59 somewhat agree, 2.60-3.39 undecided, 3.40-4.19 highly agree, 4.20-5.00 strongly agree. The significance level was taken as .05.

Another aim of the study is to determine the effect of the scores of the participants on the pedagogical competence and technological competence scales on the differentiated instructional self-efficacy. In this direction, multiple regression analysis was performed by choosing the scores obtained from the pedagogical competence and technological competence scales as independent variables, and the scores obtained from the differentiated instructional self-efficacy scale as the dependent variable. Regression analysis was performed using the SPSS 25.0 program. Before performing the regression analysis, the assumptions of the multivariate normal distribution, the existence of a linear relationship between the independent variable and the predictor variables, and the absence of a multicollinearity problem between the independent variables were tested. To control the multivariate normal distribution, Mardia's multivariate standardized kurtosis coefficient was calculated and examined. A Mardia multivariate standardized kurtosis value of less than 8 indicates that the data have a multivariate normal distribution (Wulandari, Sutrisno & Nirwana, 2021).

Findings

In the first stage of the findings section of the study, descriptive findings related to the scores obtained by the participant foreign languages department students from the differentiated instructional self-efficacy, pedagogical and technological competency scales were included. In the second stage, the scores of the participating foreign languages department students on differentiated instructional self-efficacy, pedagogical and technological competence scales were compared with the F test according to grade level and perception of academic achievement. In the last stage of the findings, the predictive level of the differentiated instructional self-efficacy of the scores obtained by the participants from the pedagogical and technological proficiency scales was analyzed by regression technique and presented.

As can be seen in Table 1, the differentiated instruction average score of foreign languages department students was the highest in the "planning" subscale (4.08), followed by the "evaluation" subscale (3.54) and the "practice" subscale, respectively. It was found as (3.03) in the “practice” subscale. On the whole scale, it was calculated as 3.55. In this case, it can be said that foreign language students have the most differentiated instructional self-efficacy in the "planning" dimension. However, the general differentiated self-efficacy level and practice and evaluation competencies were found to be moderate.

Table 1. Values regarding Differentiated Instruction Self-efficacy Scores of Foreign Languages Department Students

	N	Minimum	Maximum	Mean	Std. Deviation
Planning	234	2.00	5.00	4.08	0.66
Practice	234	1.00	5.00	3.03	0.98
Evaluation	234	1.00	5.00	3.54	0.91
Differentiated self-efficacy total	234	2.00	5.00	3.55	0.62

In Table 2, descriptive values related to the scores obtained by the students of the Department of Foreign Languages from the pedagogical competency scale are seen. According to the descriptive analysis, the pedagogical proficiency scale mean score of the participant students was calculated as 2.84. This finding showed that the participant foreign languages department students had a medium level of pedagogical competence.

Table 2. Values regarding Pedagogical Proficiency Scale Scores of Foreign Languages Department Students

	N	Minimum	Maximum	Mean	Std. Deviation
Pedagogical Competence	234	1.00	5.00	2.84	0.88

In Table 3, descriptive values related to the scores obtained by the students of the Department of Foreign Languages from the technological proficiency scale are seen. According to the descriptive values, the technological proficiency scale mean score of the participant students was calculated as 3.23. This finding showed that the participant foreign languages department students had an upper-intermediate level of technological proficiency.

Table 3. Values regarding the technological proficiency scale scores of Foreign Languages Students

	N	Minimum	Maximum	Mean	Std. Deviation
Technological Competence	234	1.11	5.00	3.23	0.81

When Table 4 is examined, it is understood that there is a statistically significant difference between the planning, implementation and evaluation subscales and the total differentiated instructional self-efficacy score averages according to grade level ($p<0.05$). When the source of the difference was examined, it was seen that the students of the foreign language department studying in the fourth and third grades achieved significantly higher levels of differentiated instruction self-efficacy than the participants in the first and second grades.

Table 4. Comparison of Scores Obtained from Differentiated Instructional Self-Efficacy Scale by Grade Level

	Grade Level	N	Mean	Std. Deviation	F	p
Planning	1	55	3.86	0.73	3.472	0.017
	2	62	4.06	0.68		
	3	63	4.16	0.65		
	4	54	4.24	0.54		
	Total	234	4.08	0.66		
Practice	1	55	2.70	1.03	5.149	0.002
	2	62	2.91	0.84		
	3	63	3.14	0.99		
	4	54	3.38	0.97		
	Total	234	3.03	0.98		
Evaluation	1	55	3.07	0.96	10.182	0.000
	2	62	3.43	0.83		
	3	63	3.76	0.81		
	4	54	3.90	0.83		
	Total	234	3.54	0.91		
Differentiated self-efficacy total	1	55	3.21	0.68	12.511	0.000
	2	62	3.47	0.51		
	3	63	3.69	0.55		
	4	54	3.84	0.55		
	Total	234	3.55	0.62		

When Table 5 is examined, it is found that the mean scores of the pedagogical proficiency scale showed a statistically significant difference according to the grade level ($p<0.05$). When the source of the difference was examined, it was seen that the students of the foreign language department studying in the fourth and third grades had significantly higher pedagogical self-efficacy than the participants in the first and second grades.

Table 5. Comparison of Scores Obtained from the Pedagogical Competence Scale by Grade Level

	Grade Level	N	Mean	Std. Deviation	F	p
Pedagogical Competence	1	55	2.64	0.92		
	2	62	2.62	0.71		
	3	63	2.92	0.90	6.124	0.001
	4	54	3.22	0.86		
	Total	234	2.84	0.88		

When Table 6 is examined, it is seen that there is no statistically significant difference in the mean scores of the technological proficiency scale according to the grade level ($p>0.05$). It has been observed that foreign language department students at all grade levels have similar and equivalent technological proficiency.

Table 6. Comparison of Scores Obtained from the Technological Competence Scale by Grade Level

	Grade Level	N	Mean	Std. Deviation	F	p
Technological Competence	1	55	3.05	0.76		
	2	62	3.15	0.76		
	3	63	3.35	0.82	1.887	0.133
	4	54	3.35	0.89		
	Total	234	3.23	0.81		

In Table 7, the differentiated self-efficacy levels of the students of the foreign languages department according to their perceptions of academic achievement were examined comparatively. According to the F test analysis, a statistically significant difference was observed in the sub-dimension and total scores of the differentiated instructional self-efficacy scale according to the academic achievement perceptions of the participants ($p<0.05$). When the source of the difference was examined, it was seen that foreign language department students with a high perception of academic achievement had higher differentiated instruction self-efficacy levels compared to their medium and low-achieving peers.

Table 7. Comparison of Scores Obtained from Differentiated Instructional Self-Efficacy Scale According to Perception of Academic Achievement

	Academic Achievement	N	Mean	Std. Deviation	F	Sig.
Planning	High	86	4.22	0.69	3.656	0.027
	Middle	80	4.06	0.52		
	Low	68	3.94	0.75		
	Total	234	4.08	0.66		
Practice	High	86	3.29	1.02	6.820	0.001
	Middle	80	3.03	0.85		
	Low	68	2.71	1.00		
	Total	234	3.03	0.98		
Evaluation	High	86	3.82	1.00	3.897	0.041
	Middle	80	3.40	0.83		
	Low	68	3.37	0.85		
	Total	234	3.54	0.91		
Differentiated self-efficacy total	High	86	3.74	0.68	8.787	0.000
	Middle	80	3.53	0.48		
	Low	68	3.34	0.60		
	Total	234	3.55	0.62		

In Table 8, pedagogical self-efficacy levels of foreign languages department students were not compared according to their perceptions of academic achievement. According to the F test analysis, a statistically significant difference was observed in the pedagogical self-efficacy scores of the participants according to their perceptions of academic achievement ($p<0.05$). When the source of the difference was examined, it was seen that foreign

language department students with a high perception of academic achievement had higher pedagogical proficiency levels compared to their medium and low-achieving peers.

Table 8. Comparison of Scores Obtained from the Pedagogical Competence Scale according to the Perception of Academic Achievement

	Academic Achievement	N	Mean	Std. Deviation	F	Sig.
Pedagogical	High	86	3.05	0.95	5.920	0.003
Competence	Middle	80	2.86	0.77		
	Low	68	2.57	0.83		
	Total	234	2.84	0.88		

In Table 9, the technological proficiency levels of the students of the foreign languages department were not compared according to their perceptions of academic success. According to the F test analysis, a statistically significant difference was observed in the pedagogical proficiency scores of the participants according to their perceptions of academic achievement ($p<0.05$). When the source of the difference is examined, it is seen that the foreign language department students with a high perception of academic success have a higher level of technological proficiency compared to their medium and low-achieving peers.

Table 9. Comparison of Scores Obtained from the Technological Proficiency Scale According to the Perception of Academic Achievement

	Academic Achievement	N	Mean	Std. Deviation	F	Sig.
Technological	High	86	3.42	0.81	3.816	0.023
Competence	Middle	80	3.11	0.75		
	Low	68	3.12	0.85		
	Total	234	3.23	0.81		

When Table 10 is examined, it is seen that the regression model created is statistically significant. In the regression model, it was observed that the variables of pedagogical competence ($\beta=0.60$; $p<0.05$) and technological competence ($\beta=0.18$; $p<0.01$) had a statistically significant effect on the differentiated self-efficacy level. In this model, independent variables explained approximately 49% of the variation in differentiated instruction self-efficacy.

Table 10. Regression Analysis Results Regarding the Prediction Level of Differentiated instructional Self-Efficacy of Pedagogical and Technological Competencies of Foreign Languages Students

Dependent Variable	Independent Variable	B	Standard Error	**β**	t	Sig.
Differentiated	(Constant)	1.892	0.129		14.708	0.000
Instructional Self-efficacy	Pedagogical Competence	0.423	0.036	0.602	11.659	0.000
	Technological Competence	0.142	0.039	0.188	3.641	0.000
$R= .701$; $R^2=0.491$; $F=110.37$; $p<0.05$						

Discussion and Conclusion

In this study, differentiated teaching self-efficacy and pedagogy and technology competencies of students studying in the Department of Foreign Languages in Kazakhstan were discussed on a relational basis. In the first sub-problem of the research, the answer was sought to what level the foreign languages department students' self-efficacy for differentiated learning was. According to the research findings, it was found that foreign language students had the most differentiated teaching self-efficacy in the dimension of "planning", whereas their competence in the dimensions of practice and evaluation was found to be moderate. These findings are similar to the results of studies conducted by Clapper (2011), Garcia (2011), Hall & Ponton (2005), Heacox (2002) and Tomlinson (2001).

In differentiated instruction, it is aimed to increase students not only at the level of knowledge but also to higher cognitive levels, and in line with this goal, it is tried to ensure that students do in-depth studies on a subject. As discussed in the related literature, one of the important principles of differentiated instruction is that it is qualitative rather than quantitative, in other words, it deals with the quality and permanence of the learned information rather than the abundance of the learned information (Heacox, 2002; Tomlinson, 2001). According to Tomlinson (2001), although differentiated instruction is planned richly and effectively, problems often arise in transforming it into practice. Clapper (2011) concluded in a classroom observation that although teachers said they are differentiating teaching, they did not do this fully. So, for example, although the teachers think that they diversify the materials according to the interests of the students, it has been determined that they use only one type of material that appeals to different interests each time, but that the whole group can use. According to differentiated instruction, it is necessary to have materials that appeal to more than one area of interest or address more than one learning level in the classroom environment at the same time, and enable students to use the material they want by making necessary guidance in line with their interests or needs (Tomlinson, 2001; Clapper, 2008). It is noteworthy that the level of implementation of differentiated education in our country is at a medium level.

In other words, it can be thought that teachers cannot fully reflect the real situation. When Garcia's (2011) teachers' skills in applying differentiated instruction were examined, it was found that teachers had the most difficulty in the process part. Although it is easy to get to know the students, it has been found that teachers have difficulties in directing them to appropriate activities and tasks. In Zoraloğlu's (2016) study, English teachers scored lower in the assessment sub-dimension of differentiated teaching self-efficacy compared to other branches. The statistically significant difference between the mathematics and social studies lessons and the English lesson in favor of these two lessons can be thought of as a result of the anxiety experienced by the English teachers, as well as the task dimension, or the inability to provide the necessary infrastructure, namely the learning environment, for foreign language teaching in schools.

According to another finding of the study, foreign language students' self-efficacy towards differentiated instruction differed according to their grade and academic achievement level. Successful students, the participants in the 3rd and 4th grades achieved low levels of achievement and higher self-efficacy levels than the students in the lower grades. As a result of their findings, Hall and Ponton (2005) argued that methods to improve the

perception of differentiated instruction self-efficacy should be developed and applied, especially in courses with low-achieving students. It is also supported by the researches that the perception of self-efficacy towards differentiated instruction increases more in environments where teaching strategies and methods to positively change this perception are used, unlike in teaching environments with only knowledge transfer. Therefore, as the grade level increases, the competence of the students in using the subject area knowledge, teaching strategies and methods effectively increases, especially in foreign languages departments. Therefore, the result reached within the scope of the research can be interpreted as a finding supporting that instructional designs based on differentiated instruction have an effective variable on students' self-efficacy as the grade level increases.

In differentiated instruction, students are expected to evaluate themselves and move to a level group or interest group. In other words, he is expected to study the subject that interests him or the subject he thinks is missing. It is known that the level of foreign language learning in Kazakhstan is lower than in other countries. For this reason, it may be an important reason why the self-efficacy towards differentiated instruction is not high, as factors such as students' self-expression, class participation and success levels in English lessons are low. However, differentiated instruction is an effective model, especially in lessons and subjects that have difficulties in learning (Tomlinson, 2001). The fact that pre-service English teachers mostly use traditional teaching methods in order to ensure classroom integrity and learning can be shown as the reason for this situation.

Another variable discussed in the study is about the pedagogical competencies of foreign language department students. It has been observed that the students of the participant foreign languages department have a medium level of pedagogical competence. However, it was observed that as the class and academic success level of foreign language department students increased, their pedagogical competencies also increased. These findings are similar to the findings of the studies conducted by Dündar and Kara (2013), Schunk and Zimmerman (2006), and Yaman (2010). Since the behavioral forms, knowledge and skills required by foreign language teaching are valid for everyone, it can be said that the candidates do not differ according to their personal characteristics. Yaman (2010) determined that teachers who have not received pedagogical formation experience inadequacies in classroom management practices based on experience or lack of knowledge. For this reason, as the grade level increases, it can be mentioned that the pedagogical competencies of the foreign language teacher candidates improve in parallel with the development in their learning-teaching experiences. On the other hand, according to Schunk and Zimmerman (2006), the development of cognitive and psychomotor competencies of individuals during the development of competencies specific to a field affects self-efficacy. In this respect, the development of foreign language students' awareness and competencies in the basic skills of teaching pedagogical competence in upper grades has enabled them to have higher self-efficacy.

Another variable discussed in the research is about the technological competencies of foreign language department students. It has been observed that the students of the participant foreign languages department have an upper-intermediate level of technological proficiency. In addition, it has been observed that foreign language department students at all grade levels have similar and equivalent technological proficiency. However, it has been observed that as the academic success level of foreign language department students increases, their technological competencies also increase. These findings are similar to the findings of studies conducted by Akgün (2013),

Mishra & Koehler (2006), Kinzie and Delcourt (1991), Wang, Ertmer and Newby (2004), and Yurdakul (2011). Technological pedagogical and content knowledge has played an important role in promoting the TPACK framework in the 21st century, as introduced by Mishra & Koehler (2006). The knowledge, skills and competencies of foreign language teacher candidates regarding the use of ICT in a classroom environment are of great importance in achieving learning goals. Kinzie and Delcourt (1991); Wang, Ertmer, and Newby (2004) stated in their research that real experiences of using technology in teacher education are a strong determinant of attitude and self-efficacy, both in the classroom and in daily use. In this context, the distance education technologies implemented in all fields and courses in Kazakhstan, especially during the Covid 19 process, may have positively affected the technology competencies of English teacher candidates. Akgün (2013) and Yurdakul (2011) stated that pre-service teachers consider themselves advanced in terms of techno-pedagogical education competencies in their study titled "Examination of Pre-service Teachers' Techno-pedagogical Education Competencies in Terms of Their Use of Information and Communication Technologies". Morever, it has been revealed that they see themselves at a partially advanced level in design, practice and ethics, which are the sub-dimensions of techno-pedagogical education, and at a moderate level in specialization. In addition, in the study, it was observed that as the level of pre-service teachers' use of Information and Communication Technologies (ICT) increased, their techno-pedagogical education skills also increased.

The last situation discussed in the research is about the pedagogical and technological competencies of the Foreign Languages Department students affecting their self-efficacy towards differentiated instruction. According to the regression analysis, both pedagogical competence and technological competence, separately and together, significantly affect the differentiated teaching self-efficacy of the participants. These findings are supported by the results of studies conducted by Finley (2008), Koyuncuoğlu (2021), and Welsh (2010). A high level of positive correlation has emerged between the levels of foreign language teacher candidates' levels of applying differentiated instruction according to current conditions and their competency levels. In other words, according to this relationship, it can be said that the more competent the teachers find themselves in teaching practice, the more they implement the practice. The fact that differentiated instruction, which has been on the agenda in recent years, has not been included in the curriculum of the curriculum suggests this relationship. Because it is surprising that this teaching model, which has just begun to be implemented around the world, has not been put into practice so quickly, and accordingly, it is at a high level of correlation with teachers' finding themselves competent in this subject. Welsh (2010) revealed in his study that the subjects of using time flexibly, acting with a flexible program and caring about student choices within the scope of differentiating teaching according to individual differences were not fully understood while determining the views of teachers and prospective teachers on differentiated teaching, and therefore there were problems in practice. Similarly, according to Koyuncuoğlu (2021), having technological and pedagogical competencies enables acquiring new knowledge in the field, multi-dimensional learning and teaching. It is considered that foreign language students who have technological and pedagogical competencies and skills will effectively use rich, creative and different methods in foreign language teaching.

As a result, Finley's (2008) candidate teachers were asked to make and implement lesson plans regarding the differentiated teaching approach, and it was seen that they made practical lesson plans thanks to the coexistence of theory and practice and the support of the advisor. This situation shows that courses related to differentiation

of teaching can be conducted in faculties. Higher Education Institution and faculties of education can work in cooperation while preparing the course contents in order to gain competencies related to the differentiated teaching approach. In school experience and teaching practice courses, which are designed to show the knowledge gained from the course or lessons that are proposed to be given, it should be ensured that novice teachers can present examples of practice related to this approach and these examples should be seriously evaluated.

In today's world, where field studies related to education continue rapidly, it is necessary to inform prospective foreign language teachers, who have been in the system for years, about new approaches and to convey up-to-date information about the applied examples. Burkett (2013) in his study with elementary school teachers in Oklahoma and Peters (2012) with middle school language teachers using differentiated instruction in Florida stated that teachers need in-service training. In order to provide in-service training, the ties between the Ministry of National Education and universities should be strengthened. In future studies, a comparative multiple case study can be made on differentiated instruction self-efficacy in samples selected from different universities, and in this way, situations in schools with different characteristics can be tried to be determined.

References

Akdeniz, C., Bacanlı, H., Baysen, E., Çakmak, M., Doğruer, N., Erişti, B., Eyyam, R., Gündoğdu, K., Karataş, E., Kayabaşı, Y., Kurnaz, A., Sünbül, A.M. & Tok, H. (2016*). Learning and Teaching*. Ankara: Cozum Eğitim Yayıncılık

Akgün, F. (2013). Preservice Teachers' Web Pedagogical Content Knowledge and Relationship fbetween Teachers' Perceptions of Self Efficacy. *Trakya Üniversitesi Eğitim Fakültesi Dergisi*, *3*(1). Retrieved from https://dergipark.org.tr/en/pub/trkefd/issue/21475/230180

Avcı, S. & Yüksel, A. (2014). *Differentiated instruction*. Ankara: Nobel Akademik Yayıncılık.

Balcı, Ö. & Sünbül, A. M. (2015). Students' opinions on the activities based on learning styles in English foreign language reading classes. *SDU International Journal of Educational Studies*, *2*(1), 1-19.

Baş, G., Kubiatko, M., & Sünbül, A.M. (2016). Teachers' perceptions towards ICTs in teaching-learning process: Scale validity and reliability study. *Computers in Human Behavior*, *61*, 176-185

Billie, F. B. (2015) Making the Case for Differentiation, *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *88*(2), 62-65, DOI: 10.1080/00098655.2014.998601

Black, J. (1984). Purdue's New Program for Foreign Language Devlopment. *Gifted Child Today*, *7*, 40-43

Brown, L. D. (2004). Differentiated instruction: Inclusive strategies for standards-based learning that benefit the whole class. *American Secondary Education*, *32*(3), 34-62.

Burkett, A. J. (2013). *Teacher perception on differentiated instruction and its influence on instructional practice.* Unpublished Doctoral Dissertation. Oklahoma State University.

Chapelle, C. A. (2003). *English Language Learning and Technology: Lectures on teaching and research in the age of information and communication*. Amsterdam: John Benjamins. http://dx.doi.org/10.1075/lllt.7

Cheung, A. (2022). A case study of zoom use by a secondary ESL teacher in HK. *RELC Journal,* doi: 10.1177/0033688220981784. (in press)

Clapper, C. T. (2011). *The effect of differentiated instruction on leadership training* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (UMI No: 3440244).

Çapri, B. & Çelikkaleli, Ö. (2008). Investıgatıon of Preservıce Teachers' Attıtudes towards Teachıng and Professıonal Self-Efficacy Belıefs Accordıng To Their Gender, Programs, And Facultıes. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, *9*(15)33–53

Çuhadar, C. & Yücel, M. (2010). Perceptions of Foreign Language Education Pre-Service Teachers on Educational Use of Information and Communication Technologies. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, *27*, 199-210.

Demir, S. (2013). *The effect of differentiated teaching methods on students' academic achievement, learning approaches and retention scores of learning*. PhD Thesis, Yıldız Teknik Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul.

Doğan, T. & Çoban, A.E., (2009). The Investigation of the Relations between Students' Attitude toward Teaching Profession and Anxiety Level in Faculty of Education. *Eğitim ve Bilim (Education and Science)*, *34*(153), 157-168

Driskill, K. M. (2010). *A qualitative study of teacher understanding and use of differentiated instruction to promote reading achievement*. Unpublished Doctoral Dissertation, University of Phoenix, USA

Dündar, H. & Karaca, E.T. (2013). Pedagogical formation students' conceptual metaphors about pedagogical formation program. *Gazi University Journal of Industrial Arts Education Faculty*, (30),19-34

Ekin, S., Balaman, U. & Badem-Korkmaz, F. (2022). Tracking telecollaborative tasks through design, feedback, implementation, and reflection processes in pre-service language teacher education. *Applied Linguistics Review*, 2022 doi: 10.1515/applirev-2020-0147.

European Commission. (2016). *Fina Summary of a Survey on the Europe 2020 Flagship Initiative "A Digital Agenda for Europe".* Publications Office of the European Union. https://bit.ly/2XqtXxN

Feldhusen, J. F., & Kolloff, M. B. (1978). A three stage model for gifted education. *Gifted Child Today, 1*(4), 3-57.

Feldhusen, J. F.,& Wyman, A. R. (1980). Super Saturday: Design and Implementation of Purdue's Special Program for Gifted Children. *Gifted Child Quarterly*, *24*(1), 15-21.

Finley, P. L. (2008). *A transfer model for differentiated instruction from the university to elementary classrooms.* Unpublished Doctoral Dissertation. Walden University.

García, O. (2011). Educating New York's Bilingual Children: Constructing a future from the past. *International Journal of Bilingual Education and Bilingualism*, *14*(2), 133-153.

García-Vandewalle, J. M., García-Carmona, M., Trujillo Torres, J. M., & Moya Fernández, P. (2021). Analysis of digital competence of educators (DigCompEdu) in teacher trainees: the context of Melilla, *Spain. Technology, Knowledge and Learning*, 1–28. Advance online publication. https://doi.org/10.1007/s10758-021-09546-x

Garrett, N. (2009). Computer-assisted language learning trends and issues revisited: Integrating innovation. *Modern Language Journal*, *93*, 719-740. http://dx.doi.org/10.1111/j.1540-4781.2009.00969.x

George, D. & Mallery, M. (2010). *SPSS for Windows Step by Step: A Simple Guide and Reference* (10a ed.) Boston: Pearson.

Glas, K., Catalán, E., Donner, M., Donoso, C. (2022). Designing and providing inclusive ELT materials in times

of the global pandemic: A Chilean experience. *Innovation in Language Learning and Teaching*, 2022 doi: 10.1080/17501229.2021.1940187. (in press)

Good, M. (2006). *Differentiated Instruction: Principles and Techniques for the Elementary Grades.* Unpublished Master's Thesis. Dominican University of California, USA.

Gregory, G. H. & Chapman, C. (2002). *Differentiated instruction strategies: one size doesn't all fit*. USA: Corwin.

Hall, J., Michael, M. & Ponton, K. (2005). Mathematics Self-Efficacy of College Freshman. *Journal of Developmental Education*. *28*(3), 26-32

Hall, T. (2002). *Differentiated instruction*. Wakefield, MA: National Center on.

Hall, T., Strangman, N., & Meyer, A. (2002). *Differentiated Instruction. Effective Classroom Practises Report*. Wakefield, VA: National Center on Accessing the General Curriculum.

Hartwig, S. J. & Schwabe, F. (2018). Teacher attitudes and motivation as mediators between teacher training, collaboration, and differentiated instruction. *Journal for Educational Research Online, 10*(1), 100-122 - URN: urn:nbn:de:0111-pedocs-154150 - DOI: 10.25656/01:15415

Heacox, D. (2002). *Differentiating Instruction in the Regular Classroom: How to Reach and Teach All Learners, Grades 3-12*. ABD: Free Spirit Publishing.

Heuling, L. S., Wild, S., & Vest, A. (2021). Digital Competences of Prospective Engineers and Science Teachers: A Latent Profile and Correspondence Analysis. *International Journal of Education in Mathematics, Science, and Technology (IJEMST), 9*(4), 760-782. https://doi.org/10.46328/ijemst.1831

Kaleli, Y. S. (2021). The effect of individualized online instruction on TPACK skills and achievement in piano lessons. *International Journal of Technology in Education (IJTE)*, *4*(3), 399-412. https://doi.org/10.46328/ijte.143

Kaplan, M. (2016). *The effect of the 7th grade force and motion unit in the science course taught with the differentiated teaching method on students' conceptual understanding, scientific process skills and academic achievement.* PhD Thesis, Dokuz Eylül Üniversitesi Eğitim Bilimleri Enstitüsü, İzmir.

Kara, S. (2020). Prospective visual arts teachers' innovation skills and attitudes towards computer assisted instruction. *International Journal of Technology in Education and Science (IJTES), 4*(2), 98-107.

Kara, S. (2021). An investigation of Technological Pedagogical and Content Knowledge (TPACK) competencies of pre-service visual arts teachers. *International Journal of Technology in Education (IJTE)*, *4*(3), 527-541. https://doi.org/10.46328/ijte.184

Karip, F. (2016). *The effect of differentiated visual arts instruction on 7th grade students' academic achievement, attitudes and studies.* PhD Thesis, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Kibici, V. B. & Sarıkaya, M. (2021). Readiness levels of music teachers for online learning during the COVID 19 pandemic. *International Journal of Technology in Education (IJTE)*, *4*(3), 501-515. https://doi.org/10.46328/ijte.192

Kibici, V. B. (2022). An Investigation into Music Teachers' Perceptions of Technological Competencies. *International Journal of Technology in Education and Science (IJTES), 6*(1), 111-123. https://doi.org/10.46328/ijtes.344

Kinzie, M. B. & Delcourt, M. A. (1991). Computer technologies in teacher education: the measurement of attitudes and self-efficacy. *Annual Meeting of the American Educational Research Association*. Chicago, IL.

Koh, J. H. L., & Chai, C.S. (2011). Modelingpre-service teachers' technological pedagogical content knowledge (TPACK) perceptions: Thein fluence of demographic factorsand TPACK constructs. In G.Williams, P. Statham, N. Brown, B. Cleland (Eds.), *Changing Demands, Changing Directions*. Proceedings ASCILITE Hobart, pp.735-746.

Koyuncuoğlu, Ö. (2021). An Investigation of Graduate Students' Technological Pedagogical and Content Knowledge (TPACK). *International Journal of Education in Mathematics, Science and Technology (IJEMST)*, *9*(3), 299-313.

Kyriakides L., Creemers B., & Charalambous E. (2018). *Equity and quality dimensions in educational effectiveness*. Dordrecht: Springer International Publishing; 10.1007/978-3-319-72066-1

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for integrating technology in teachers' knowledge. *Teachers College Record*, *108*(6), 1017–1054

OECD. (2012). *Equity and Quality in Education: Supporting Disadvantaged Students and Schools*. Paris: OECD Publishing; 10.1787/9789264130852-en

OECD. (2018). *The Resilience of Students with an Immigrant Background: Factors that Shape Well-being*. Paris: OECD Publishing; 10.1787/9789264292093-en

Paudel, P. (2021). Information and Communication Technology in Foreign Language Classes in English: Roles and Practices. *International Journal of Technology in Education and Science (IJTES)*, *5*(1), 37-55. https://doi.org/10.46328/ijtes.179

Peters, A. (2012). *An investigation of teacher perceptions and implementation of differentiated literacy ınstruction with advanced students.* Unpublished Doctoral Dissertation. Capella University.

Ramirez-Montoya, M., Mena, J., & Rodriguez-Arroyo, J. (2017). In-service teachers' self-perceptions of digital competence and OER use as determined by a xMOOC training course. *Computers in Human Behavior*, *77*, 356–364. doi: 10.1016/j.chb.2017.09.010.

Rock, M. L., Gregg, M., Ellis, E.& Gable, R. A. (2008). REACH: a framework for differentiating classroom instruction. *Prev. Sch. Fail.*, *52*, 31–47. 10.3200/PSFL.52.2.31-47

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.

Rule, A.C., & Lord, L.H. (2003). *Activities for Differentiated Instruction Addressing All Levels of Bloom's Taxonomy and Eight Multiple Intelligences*. State University of New York at Oswego.

Sarzhanova, G.B., & Alimbekova, A.A. (2016). Information competence as a means of developing leadership qualities in student-teachers. *International Journal of Environmental and Science Education*, *11*(9), 2887–2899 10.12973/ijese.2016.729a

Schleicher, A. (2016). Teaching Excellence through Professional Learning and Policy Reform: Lessons from Around the World. Paris: *International Summit on the Teaching Profession*; OECD Publishing; 10.1787/9789264252059-en

Schofield, J. W. (2010). International evidence on ability grouping with curriculum differentiation and the achievement gap in secondary schools. *Teach. College Rec*., *112*, 1492–1528.

Schunk, D. H., Zimmerman, B.J. (2006). Competence and control beliefs: distinguishing the means and ends. (Eds). Alexander P. A., Winne P. H., *Handbook of Educational Psychology*, pp. 349-367, Lawrence Erlbaum Associates, Mahwah, New Jersey.

Skowron, J. (2001). How to differentiate instruction. Adapted from Chapter 3 of Powerful lesson planning models: The art of 1,000 decisions. *A Skylight Guide. Grades K-12.* ERIC Document Reproduction No. ED457142.

Smagulova, G.Z., Sarzhanova, G.B., Tleuzhanova, G.K., & Stanciu, N. (2021). The development of future foreign language teachers' digital competences in creating multimedia tutorials. *Obrazovanie i Nauka, 23*(6), 216–245. https://doi.org/10.17853/1994-5639-2021-6-216-245

Smale-Jacobse, A. E., Meijer, A., Helms-Lorenz, M., & Maulana, R. (2019). Differentiated Instruction in Secondary Education: A Systematic Review of Research Evidence. *Frontiers in psychology, 10*, 2366. https://doi.org/10.3389/fpsyg.2019.02366

Subban, P. (2006). Differentiated instruction: a research basis. *Int. Educ. J., 7,* 935–947. Available online at: http://ehlt.flinders.edu.au/education/iej/articles/v7n7/Subban/BEGIN.HTM [Google Scholar]

Sünbül, A.M., Yılmaz, E. & Küçüktığlı, M.S: (2009). The investigation into the prospective teachers' communication skills. *Conferinta Internationala Ştiinte Ale Educatie*, 5-6 June, Suceava, Romanya.

Sünbül, A.M., Gündüz, Ş., & Yılmaz, Y. (2002). Effect of 'Computer Assisted Instruction'Prepared According to 'Gagne's Instruction Theory'on Students' Achievement. *Selçuk University Faculty of Education Journal, 14*, 379-404.

Şan, İ. & Türegün, B. (2021). Effect of Differentiated Instruction on Academic Success in English Lesson. *Yükseköğretim ve Bilim Dergisi*, *11*(1), 184-191.

Şengül, K., & Sünbül, A.M. (2015). An Investigation into Comprehension Competence And Grammar Achievements Of Learners Of Turkish As A Foreign Language In Turkey. *Educational Alternatives*, *13*, 573-580

Tao, J., & Gao, X. (2022). Teaching and learning languages online: Challenges and responses. *System*, *107*, 102819. https://doi.org/10.1016/j.system.2022.102819

Tarrayo, V.N., & Anudin, A.G. (2022). Materials development in flexible learning amid the pandemic: Perspectives from English Language teachers in a philippine state university. *Innovation in Language Learning and Teaching*, 2022 doi: 10.1080/17501229.2021.1939703. (in Press).

Tawil, S. (2014). *Differentiated instruction at the elementary level: Teaching to a diverse student population*. Unpublished Doctoral Dissertation. Northcentral University.

Thekes, I. (2021). The Impact of Xeropan: An Online Application Assisting Language Learning on the Processes of Foreign Language Learning. *International Journal of Technology in Education (IJTE)*, *4*(4), 624-643. https://doi.org/10.46328/ijte.127

Tleuzhanova, G.K., Sarzhanova, G.B., Joldanova, D.K., Eskzinova, Z.A., Assanova, D.N. (2019). The role of it technologies in the formation of students leadership. *J Adv Pharm Edu Res*, *9*(2), 89–94.

Tleuzhanova, G.K., Syrymbetova, L.S., Mekezhanova, A.B., Sarzhanova, G.B., & Kulsharipova, Z.K. (2021). Subject-based speaking as a method for the development of foreign-language professional competence among students. *Journal of Siberian Federal University - Humanities and Social Sciences*, *14*(3), 408–425. 10.17516/1997–1370–0731

Toleubekova, R.K., & Sarzhanova, G.B. (2016). The use of Information Technologies (IT) in the formation, development and improvement of the competence of higher education teachers. *Indian Journal of Science and Technology*, *9*(19), 90073 10.17485/ijst/2016/v9i19/90073

Toleubekova, R.K., & Sarzhanova, G.B. (2018). Application of information technology in improvement of teachers' competence. *Springer Proceedings in Complexity*, 477–482. 10.1007/978-3-319-64554-4_33

Tomlinson, C.A. (2015). Teaching for excellence in academically diverse classrooms. *Society, 52*, 203–209. 10.1007/s12115-015-9888-0

Tomlinson, C.A. (2014). *The differentiated classroom: Responding to the needs of all learners*. Alexandria, Va: Association for Supervision and Curriculum Development

Tomlinson, C.A., Brighton, C., Hertberg, H., Callahan, C. M., Moon, T. R., & Brimijoin, K. (2003). Differentiating instruction in response to student readiness, interest, and learning profile in academically diverse classrooms: a review of literature. *J. Educ. Gifted, 27*, 119–145. 10.1177/016235320302700203

Tomlinson, C.A. (1995). Differentiating Instruction for Advanced Learners in the Mixed-Ability Middle School Classroom. *ERIC Digest*, E536.

Tomlinson, C. A. (2001). *How to Differentiate Instruction in Mixed Ability Classrooms*. ABD: Association for Supervision and Curriculum Development.

UNESCO. (2017). *A Guide for Ensuring Inclusion and Equity in Education*. Paris: United Nations Educational, Scientific and Cultural Organization. Available online at: https://unesdoc.unesco.org/ark:/48223/pf0000248254

Wang, L., Ertmer, P.A., & Newby, T. J. (2004). Increasing preservice teachers' self-efficacy beliefs for technology integration. *Journal of Research on Technology in Education*, *36*(3), 231-250.

Welsh, D.K. (2010). *Effect of differentiated instruction and word attack strategies on struggling* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses (UMI No.3407325).

Wulandari, D., Sutrisno, S., & Nirwana, M. B., (2021). Mardia's Skewness and Kurtosis for Assessing Normality Assumption in Multivariate Regression. *International Journal of Applied Statistics and Data Science, 1*(1), 1–6. https://doi.org/10.20885/enthusiastic.vol1.iss1.art1

Xu, Y., Jin, L., Deifell, E., & Angus, K. (2022). Facilitating technology-based character learning in emergency remote teaching. *Foreign Language Annals*, *55*(1), 72–97. doi: 10.1111/flan.12541.

Yaman, B. (2010). Classroom management perceptions of the teachers who hadn't taken pedagog,cal formation (An Example To Cıty Of Aksaray). *Electronic Journal of Social Sciences*, *9*(31) 53-72

Yapıcı, M., & Yapıcı, Ş. (2013). Pre-Servıce Teachers' Conceptual Metaphors about Pedagogical Formation Program, Turkish Studies. *International Periodical for the Languages, Literature And History of Turkish or Turkic*, *8*(8) 1421-1429.

Yıldırım, A., & Şimşek, H. (2008). *Qualitative research methods in the social sciences*. Ankara: Seçkin Yayıncılık.

Yılmaz, E., & Sünbül, A.M. (2009). Developing Scale of University Students Entrepreneurship. *Selçuk University, Journal of Social Sciences*, *21*, 193-202.

Yurdakul. I. K. (2011). Examining the Technopedagogical Education Competencies of Teacher Candidates in Terms of Their Use of Information and Communication Technologies. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *40*, 397-408.

Zoraloğlu, S. (2016). *A case study of differentiated instruction approach.* PhD Thesis, Hacettepe Üniversity, Ankara.

Author Information

Galiya Sarzhanova *

https://orcid.org/0000-0002-3461-8963

** Corresponding Author*

Academician E.A. Buketov Karaganda University

University street 28, Karaganda

Republic of Kazakhstan

Contact e-mail: *galiya008@mail.ru*

Malika Otynshiyeva

https://orcid.org/0000-0002-3473-5596

Academician E.A. Buketov Karaganda University

University street 28, Karaganda

Republic of Kazakhstan

Gulnaz Tleuzhanova

https://orcid.org/0000-0003-2302-1595

Academician E.A. Buketov Karaganda University

University street 28, Karaganda

Republic of Kazakhstan

Dariya Assanova

https://orcid.org/0000-0002-4624-7012

Academician E.A. Buketov Karaganda University

University street 28, Karaganda

Republic of Kazakhstan

Aigul Sadvakassova

https://orcid.org/0000-0001-8219-5515

L.N. Gumilyov Eurasian National University

Satpayev street 2, Nur-Sultan

Republic of Kazakhstan