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Differentiated Instructions effect on Academic Achievements of Level 2 English Students. A Case on Iraq Public Sectors Universities

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Abstract
We value the English language because it makes communication easier. All around the world, it is the major language used to learn any subject. Students need to learn English because it helps them think critically, grow emotionally, and improve their quality of life by providing access to job opportunities. Since the First World War, Iraq's educational system has mandated that English be taught and learned. Males and females learn and manage behavior differently. The current study's goal is to ascertain the impact of differentiated education on students' performance in English at public universities in Iraq. For this reason, a simple random sampling strategy was used to perform the study on 200 level 2 English students (100 males and 100 females). The English accomplishment test served as the research instrument for the quasi-experimental study. Pre-test and post-test data analyses were conducted using descriptive and inferential statistics. The findings show that when students received differentiated instructions, their academic success in the English subject was unaffected by their gender. This study could be regarded as a pioneering study that could aid other researchers in conducting their research in various nations with different conclusions. The research findings may contribute to a body of knowledge for differentiating instruction and serve as a platform for future research.

Keywords: Achievement, differentiated instructions, Iraq.

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Introduction

The educational system has been evolving due to today's rapid globalization, leading to an increase in the use and use of new teaching methods, particularly in industrialized nations. By raising educational results to higher levels and addressing flaws, differentiated teaching could help teachers increase student achievement (Tulbure, 2011). As a result, since the fourth century, it has been understood how important it is to adapt training to individual features (Klinger, Rogers, Anderson, Poth, & Calman, 2006). Academic research and policy are increasingly focusing on these variations due to rising student variability (Tomlinson, 2005). Many teachers still employ a one-size-fits-all approach in their classes, disregarding the uniqueness of each student, even though they are aware of the need to respond to student variety (Tomlinson, 1999). This will enable interaction between instructors and students within scientific principles and foundations that ensure students fully understand the most relevant information and facts (Tulbure, 2011). Differentiated instruction is therefore regarded as a crucial teaching strategy that many nations have started to use and implement to take into account students' various needs, inclinations, and interests, as well as differences in their levels of understanding, which could aid in boosting their academic achievements (Njagi, 2015).

As differential education has gained popularity as a means of raising students' academic achievement, there are several gaps in the empirical research on this subject. The relationship between differential instruction and academic achievement has been the subject of numerous studies. Some of these studies Alsalhi et al. (2021); Yavuz (2020) found a significant and positive relationship, while others El Masry (2017); Güvenç (2021); Yavuz (2020) found no relationship between differential instruction and academic achievement. These investigations have demonstrated that the results of earlier studies were inconsistent. Furthermore, prior research Alsalhi et al. (2021); El Masry (2017); Yavuz (2020) paid little attention to Iraqi English instead of focusing mostly on other nations and other themes. For both individuals and global society, English plays a crucial practical role. It improves people's analytical and problem-solving abilities to enhance pupils' functioning capabilities. The students' ability to overcome complex issues or hurdles in daily life is another benefit of learning English. Teaching English to youngsters at the school level is a general requirement to strengthen their adult life abilities (Wilson & Berne, 1999). All residents must improve their English proficiency to make their country more competitive on the world stage. These abilities are the fundamental basis for growth, increased productivity, innovative use of new technologies, and development. The whole place to start, in the opinion of Roschelle, Pea, Hoadley, Gordin, and Means (2000), is with instructional methodologies and curricula, as well as their improvement.

According to previous studies, various factors contribute to gender disparities in the learning process, so it is important to perform classroom activities that enable males and females to learn in different ways (Pae & Shin, 2011). A certain proportion of university students chose to major in English for their careers (Dearden, 2014; Kotob & Abadi, 2019). The primary qualification for jobs in engineering, architecture, medicine, and allied fields is proficiency in English. Even though this subject is more important to society, both sexes in Iraq reported performing poorly on this subject in their exams (Celik, 2019). Therefore, it is essential to progress and improve teaching strategies following students' demands to improve student performance (Celik, 2019). It is imperative that all students, regardless of their gender, language ability, social background, or cultural background, become literate in English (Burton, 2004). Researchers have recently paid excessive attention to educational equity and efforts to improve it (Margolis & Moreno-Riaño, 2016). According to Boaler (2002) findings, different teaching strategies for males and females have other effects on academic performance when students are instructed to follow their interests, learning preferences, and readiness levels to promote personal development and learning (McLaughlin & Talbert, 1993). Equity in social justice and education can be attained by adopting differentiated instruction to meet the various students' learning needs.

Numerous gaps have been discovered while keeping in mind prior discussions. For instance, prior research has focused mostly on the relationship between different instructional methods and academic successes in other nations. Additionally, earlier research has produced contradictory results and has focused mostly on other topics while paying little attention to the English discipline and, in particular, university students. These disparities motivate researchers to investigate how differentiating education affects academic attainment. The current study aims to ascertain how different instructional approaches affect Iraqi students' academic performance at various levels. There were five chapters in the research. The introduction comprised the first chapter, while the literature section of the second chapter covered both theoretical and empirical literature. The third chapter covered the study technique and went through the demographic, sample size, and data collection method. Data analysis and a discussion of the results are in the fourth section. Finally, the debate, conclusion, and suggested actions were covered.

Theoretical and Empirical Literature Review

Theoretical Framework

Differential instruction (DI) is defined by Tomlinson and McTighe (2006) as anticipatory planning based on various perspectives on what students must learn, how they will acquire it, and how they will assess their learning. It enables teachers to modify their instructional strategies to meet the unique needs of their students. The process through which students study an important subject or attain a goal competency is known as content (Theisen, 2002; Tomlinson, 2014). Teachers may alter the final result because that is how students demonstrate their understanding (Tomlinson, 1999). DI refers to using instructional practices informed by student differences and giving teachers useful data (Chung, 2005). Teachers must have a thorough understanding of each student's availability (entry towards a particular notion or ability), interest (through which teachers may match learning material towards students' preferences and encourage participation), and learning style (determined by students' dominant intellect) to reconstruct the curriculum mentioned above elements (Dunn & Dunn, 1979). While surveys, observations, and other techniques have confirmed students' interests and preferred methods of education, placement and achievement exams have long been employed to determine students' readiness. One-size-fits-all thinking is directly at odds with the instructional design that considers students' readiness, interests, and learning styles because it is improved by instructional strategies like tiered exercises, options, and variable grouping to effectively meet the unique needs of each student (Lewis, Rivera, & Roby, 2021). However, DI is more than just a set of techniques; it is based on the idea that every learner is different and that a uniform style of instruction is worthless unless it is tailored to meet the needs of each student. To adapt to additional learner requirements and get the best outcomes in the classroom, teachers should adopt DI rather than merely experimenting with a set of instructional tactics (Suprayogi & Valcke, 2016). This could improve academic performance (Alsalhi et al., 2021).

Empirical studies

The last two decades have seen a substantial interest in DI research. As judged by various tools, students exposed to DI approaches demonstrated increased levels of self-confidence, motivation, and optimism (Affholder, 2003; Danzi, Reul, & Smith, 2008; Ramos & Lasaten, 2020). The impact of DI on student achievement has been studied in the past. Baumgartner, Lipowski, and Rush (2003) discovered that reading proficiency among primary and secondary school students increased after being exposed to DI through a variety of methods, including instructional strategies, options, prolonged periods of self-selected reading time, as well as access to a wide range of learning books. Through the DI, Beecher and Sweeny (2008) seek to bridge the achievement gap by recruiting students from diverse cultural and socioeconomic backgrounds. There aren't many studies that focus on ELT, though. Chien (2012) discovered that L2 learners in a Taiwanese elementary school could study more effectively after making changes to pre-assigned resources, giving students a choice, assigning them various activities, and utilizing different evaluation measures. In addition, Alavinia and Farhady (2012) raised the vocabulary accomplishment ratings of 80 Iranian students learning English by considering their various intellect levels. According to Aliakbari and Haghighi (2014), there is a considerable variation between students' reading comprehension at different levels of training in terms of content, process, and outcome. During L2 remedial hours of a university preparatory program in Saudi Arabia, Siddiqui and Alghamdi (2017) "found that combining tiered activities and flexible grouping made a substantial effect." 17 pupils and 4 teachers participated in the study. Paredes (2017) conducted a study with 43 college students who varied in their interests and needs to assess the efficacy of DI techniques on EFL students' vocabulary, reading, and grammatical skills, including double-entry journals, reading charts, and project menus. The findings demonstrated that the tested solutions enhanced the performance of L2 students in the domains mentioned above.

The first study examined instructors' perspectives on DI as well. Theisen (2002), the requirement for specialized training (Melesse & Belay, 2022; Siam & Al-Natour, 2016) and the requirement for having in-depth knowledge of students' histories and strengths lead the majority of instructors to conclude that DI is ineffective (Oliver, 2016). However, it was also discovered that gender-specific education made no appreciable difference in how well students performed (Njagi, 2015). Contrarily, it has discovered a significant link between academic achievement and disparate instruction (Alsalhi et al., 2021). Numerous gaps have been identified while keeping in mind prior discussions. For instance, preliminary research has focused heavily on the relationship between differentiated instruction and academic results in other nations (Alsalhi et al., 2021; Njagi, 2015). Inconsistent results from earlier research have also been found, and other areas have received more attention than the English field, particularly pupils at the university level (Alsalhi et al., 2021; Njagi, 2015). These disparities motivate researchers to investigate how differentiating education affects academic attainment. Consequently, the following study premise is presented below:

H1: There is no statistical difference in the academic achievement between those who use the differential instructions and those who are given conventional instruction methods.

Research Methodology

The study aims to determine how different instructional approaches affect L2 academic performance among university students in Iraq. The quasi-experimental study design and quantitative research methodology were utilized for this objective. Because the researchers worked alongside the remaining streams, as suggested by Nachmias and Nachmias (2004), and the students were already constructed with the administration of the universities, the quasi-experimental research design was applied to the study. The Solomon four-group designs, used in experimental and quasi-experimental research designs, have been used in studies. The design provides four pertinent comparisons of one particular endogenous variable (Muthomi & Mbugua, 2014). Researchers from four colleges divide subjects into control and experimental groups using basic random sampling. This action was done to lessen the possibility of prejudice in choosing universities that would participate. There were four groups total—two experimental and two control. Within the pre-tested experimental 1 condition, there were two unique groups: one getting therapy and the other receiving no treatment. To examine the potential impact of confounding variables and other factors, treatment and control groups might be paired with additional experimental and observational groups (Spector, 1981). "The groups were combined in the ways listed below. In the first group, control group 1 received treatment alongside control group 2, experimental group 2, and experimental group 2, followed by control group 2 receiving treatment alongside control group 1, experimental group 1, and experimental group 2, and finally, experimental group 2 receiving treatment alongside control group 1, control group 2, and experimental group 1. The study's chosen metric was the English Language Proficiency Test (English). Candidates' general English competence and capacity to comprehend and utilize the language in a range of circumstances are tested through questions on the English portion. Based on 11 components, English received a 100 overall score. English was used for both the diagnostic and diagnostician tests. The students received the pre-test and post-test the same way they would have received any other test. The study concentrated on how the English language was employed in paragraphs. Students in Groups 2 (who received differentiated instruction) and Groups 4 (who did not) completed a post-test after exposure to the content. Initially, students in Groups 1 (the experimental group) and Group 1 (the control group) took a pre-test. In total, 200 pupils were included in the sample, 200 in the experimental group and 100 in the control group. There were 100 men and 100 women among them. The participants were chosen. The responses were selected from English Level 2. This course has a higher academic level and is more sophisticated than English: Level 1. You increase your spoken and written English and your comprehension of English literature and linguistics. Both your vocabulary and your command of the language increase.

Data Analysis and Interpretation

The results are predicted below in the next sections, which were run using SPSS software.

Mean Scores of post-test

The following Table 1, which includes data from both female and male students who were divided into control and experimental groups, shows the post-test mean results as predicted. According to the anticipated outcomes in Table.1, the experiment group's mean score is (79.70), while the mean score in the male control group is (40.56). The average score for females in this experiment group is 80.62, while the average score for females in the control group is (39.23). The mean score of differentiated teaching in experimental groups was almost twice as high as the mean of the related group, and these results were obtained using traditional approaches for both genders. These findings showed that when both males and girls received differentiated teaching, there was a difference in achievement. Thus, differentiated instruction supports student equity and quality. Research also strengthened our findings by Tomlinson (2001), which looked at how differentiated education raises all students' potential. The average score for men in the experiment group was (79.70), while the average score for women was (80.62). There was a small gap between the two. Thus both men and women gained academically. This indicates that the gender gap was effectively closed by adopting differentiated education. Both male and female students' achievements improve due to these customized lessons. Therefore, it was demonstrated that the gender gap was not there when differentiated instruction was used. The performance of both genders in the classroom remains parallel because differentiated instruction is the best strategy for meeting their needs.

Table.1: *Post-Test Mean score*

Group	Gender	N	Mean	Standard Deviation
Experiment Group	Males	100	79.70	20.18
	Females	100	80.62	17.42
Control Group	Males	100	40.56	21.40
	Females	100	39.23	18.21

Source: Author's Illustration

Experiment Groups T-Test Scores after Providing Differential Instruction

The T statistics values of the experimental results, which included 100 males and 100 females, are displayed in Table 2's anticipated values. The results are not significant at level 0.5, as indicated by the expected results, which reveal that the T-statistics value is 1.67. According to the independent sample, there was no statistical difference at the significance level of 0.05. This shows no difference in achievement between males and females in the experimental group, indicating that the importance of differentiated instruction had not been established. These findings suggest that there was practically equal participation by men and women. The average score values are also nearly identical. Males have a mean value of 68.80, while females have a mean value of 69.73, indicating no significant difference between these mean values. Therefore, it can be said that there are significant differences in the findings of the experimental groups' male and female participants. The findings align with those of Koutselini (2006), who argued similarly about how effective differentiation lessons are for all students. As a result of these findings, it can be said that university teachers in Iraq significantly contributed to raising students' academic achievement levels by offering appropriate, differential instruction that was crucial for both males and females. The accompanying Table.2 below predicts the experiment T-Test findings.

Table.2: *T-Test of Post-Test English scores*

Gender	N	Average	Standard deviation	T-statistics	T-critical Value
Males	100	68.80	18.18	1.672	0.101
Females	100	69.73	15.45		

Source: Author's Illustration

Pre-Test and Post-Test Mean Gain Scores in ENGLISH

By giving the students differentiated training, the mean values before and after the post-test changed, as seen by the projected values in Table.3. The anticipated outcomes show that the control group's mean values before receiving differential instruction are lower than those of the control group. The results showed that the average score for men in the experiment group was 59.22, while it was 28.08 in the control group. Using the "standard teaching strategy" for males, the main gain of the experimental group was higher than the mean gain of the control group following differentiated instruction. The control group's mean gain for females is 33.80, while the experiment group's mean increase is 46.66. The mean gain in the experimental group was higher for females than the mean gain in the control group. The achievement scores of the pupils in experimental groups showed improvement in mean gain compared to the control group, regardless of gender. These findings supported Stanford and Reeves' (2009) findings that differentiated instruction creates the conditions for all students' success. Using this strategy, a supportive atmosphere can be created for the success and advantage of all students. These findings are further corroborated by numerous additional institutions, which argued that the instructor's differentiated instruction increased the students' attention in the classroom and facilitated active learning, which improved their academic achievement (Njagi, 2015). The results of the mean gain predictions are shown in Table 3 below.

Table 3: *Pre-test and Post-test Mean Scores Change*

	Experimental group		Control Group	
Gender	Males	Females	Males	Females
Posttest	79.43	67.89	46.43	47.14
Pretest	20.21	21.23	18.35	13.34
Change in mean	59.22	46.66	28.08	33.80

Source: Author's Illustration

ANOVA Test Results

The next stage is to test the research hypothesis after obtaining the mean differences between the investigations. One-way ANOVA was employed to analyze the statistical difference between males and females in both the experiment and the control group to test the study hypothesis. The results of this Table showed that, due to treatment variance and individual differences in score variance, squares' total sum is divided into two categories: within the square's sum and in-between square's sum. Interactions between samples cause variation in the mean square between groups. However, variations in each sample represented the variance in the mean square between groups. It was stated that there were more than 180 times as many estimates between groups as there were estimates inside the group. The null hypothesis was rejected because the results showed that F-computed was greater than F-critical and that the significance of the results was at the level of 5%. By introducing differentiated instruction and the "traditional instructional strategy," the achievement by gender showed a significant difference by three pupils, as evidenced by the measures being significantly statistically different at the 0.05 level. Using tailored instruction contributed to better

achievement regardless of gender. The results of our study agreed with those of Kamarulzaman, Azman, and Zahidi's (2017) study, which found that differentiated instruction was advantageous for all learners since it included teachers and students in the learning process. These results are even more in line with the research (Njagi, 2015). The Following Table.4 below has a prediction of the ANOVA test findings.

Table.4: *ANOVA Test Results*

	SS	DF	MS	F
Between groups	163040.802	5	60685.783	181.315
Within groups	104530.828	380	286.846	
Total	267571.630	385		

Note: SS-Sum of Square; DF-degree of freedom, MS-mean Square:
Source: Authors Own Illustration

Multiple Comparison Tests

Table 5's results show the attained mean in the column and rows and the differences between each pair of means that were subtracted from the inside cells. This creates a table of absolute mean differences that can be used to assess the post hoc tests. The findings in Table 5 show that the average differences between EXP1 and EXP2 and EXPE and EXPI are not statistically different, as indicated by the value of 0.342. These findings demonstrated no variation in the experimental group's mean values after exposure to tailored instruction. These findings demonstrate that unequal instruction has no discernible impact on pupils' academic performance. The findings align with earlier research by Tobin and Tippett (2014) that showed the effectiveness and efficiency of tailored instruction for all learning. These results are consistent with data from earlier studies that support the same conclusions (Njagi, 2015). The effects of repeated compression are projected in Table.5 below.

Table.5: *Multiple Comparison Test*

Group O	Group P	MD (O-P) and Significance level	SE
CONT2	CONT2	20.00 (0.000)	2.260
	EXP1	36.60 (0.000)	2.360
	EXP2	33.87 (0.000)	2.202
CONT2	CONT1	20.00 (0.000)	2.260
	EXP1	36.49 (0.000)	2.327
	EXP2	23.36 (0.000)	2.278
EXP1	CONT1	36.20 (0.000)	2.360
	CONT2	2.127 (0.000)	46.49
	EXP2	.5323 (0.342)	2.282
EXP2	CONT1	36.87 (0.000)	2.202
	CONT2	45.36 (0.000)	2.278
	EXP1	.5323 (0.342)	2.282

Note: SE-standard Error-MD-mean difference, CONT-control, EXP-experimental
Source: Author's Illustration

Discussion and Conclusion

Regarding learning and education, Iraq has one of the best systems in the world. Iraqi society's way of life and culture are fundamentally based on education. As a result, this study aimed to examine how the Differentiated Instruction technique affected students' L2 English proficiency levels. This strategy is intended to help students better understand English-language concepts and develop problem-solving skills. The findings indicated a significant difference between the controlled and experimental groups of pupils, favoring the experimental group. The average score of the pupils in the experimental group who received differential teaching was greater than that of the control group.

Additionally, the information showed that there were no gender-based differences or similarities among the students in the experimental group. Other studies have found similar findings (Precke & Brüll, 2008; Siam & Al-Natour, 2016). These investigations' results indicate that when compared to the traditional method, trained learners utilizing the differential methodology did not perform or achieve any better. However, the study's results did not match those of other investigations. These research findings indicate that individualized instruction positively impacts students' academic development, yet students may experience anxiety when learning about scientific concepts (Aliakbari & Khales Haghighi, 2014; Hassan, 2016).

Based on the findings mentioned above, it can be said that using differentiated instruction by both males and females improves both groups' performance in terms of score attainment. This shows that the use of differentiated instruction in the teaching process of students does not affect the performance and accomplishments of the students in English. Differentiation is advantageous for all learners, regardless of gender, and it equally promotes students' learning environments. The differentiation strategy keeps the higher standards for all students and gives them equitable access to the curriculum. Therefore, the strategy of tailored education increases the performance of various individuals, making it appropriate for all students.

Contributions and Future Recommendations

The new study expanded the body of work from both theoretical angles. The earlier studies paid little attention to the subject of English and were mostly focused on other nations and other subjects, such as mathematics, physics, etc. As a result, this research contributed to a body of material that may be regarded as a pioneer study of the existing literature. Additionally, the results of earlier studies were inconsistent; some research indicated that differentiated instruction has a significant impact on academic achievement, while other research discovered that differentiated instruction has no discernible effect on the academic achievement of Level 2 students in Iraq. This gap also inspired the researchers to conduct their research to add their findings to the body of literature already in existence. The regulatory organizations could also benefit practically from this research by promoting the most up-to-date differential instruction in their educational institutions to boost students' academic performance. This study may have also aided policymakers in understanding how giving students various instructions from their professors may have improved their academic performance.

According to the research's findings and the following arguments, Iraq's regulatory organizations should take proper interest in using differential instruction methodologies in the curriculum or other textbooks to improve student academic performance. Developing an appropriate course curriculum following contemporary methods to improve students' academic results is also advised to take some time. While to strengthen the credibility of research, it should be used to conduct comparative studies on other topics. Additionally, it is advised that teachers who plan to use differential instruction, especially in large classrooms, conduct preliminary observations on their students' learning styles, interests, aptitudes, and weaknesses. Gaining additional knowledge about learners is essential because it produces valuable information that guides the use of differential training. After receiving results from the pre-assessment tools, teachers may split the class into groups based on the students' readiness, preferred learning styles, and interests. Lesson planning should be focused on general learner characteristics rather than trying to accommodate every specific variance in the class, which is not the goal of differential instruction. Finally, it should be understood that individualized training does not include discriminatory instruction. The third suggestion is that teachers invest money in their professional development in this area by learning about various differential instruction strategies, seeing films about differential instruction, or observing colleagues. Otherwise, differential instruction can be mistaken for individual teaching, giving good students more work or emphasizing pupils with learning problems.

The chance of generalizing the study's findings is increased by the need for more research on this topic with a larger sample of students. Second, to improve the reliability of the study, comparable studies should be carried out with the same academics in both the experimental and control groups. Third, future research may be conducted over a longer period, providing more enduring and generalizable findings, as this study had a limited period that decreases the generalizability of the research. Finally, to strengthen the study's external validity, future research may employ differential training using a variety of learner stages and types, including upper-intermediate children, advanced adults, and learners. Additionally, because Iraq is a developing country and the research was conducted there, there is little generalizability for other developed nations. As a result, research on developed nations might be undertaken to boost generalizability.

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