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Exploring the Effects of Differentiated Instruction on the Comprehension Skills of Students in the English at the Secondary Level

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Abstract

This paper aims at finding out the impacts of differentiation on the comprehension skills of students and their learning achievement. The study focused on students with multiple abilities, and different intelligence; who need extra attention, time and curriculum foundation during the course of study time. Differentiated instruction is modifying teaching methodology according to the needs, interests or mental level of the learners so that the ultimate academic goal is achieved. This technique, though slow, yet it been proven to be effective in boosting the classroom learning environment. The mode of the study was quasi-experimental with a pre-test and post-test conducted on 24 students of class IX in English subjects assigned to the experimental & control group. A pre-test on the reading comprehension and solving exercises was taken as a diagnostic assessment. The result produced that 24% (6) students could succeed in reading only the ninth-class English subject. Hence, the differentiated instruction approach was adopted by changing the teaching method i.e. minimizing the reading material according to the needs, intelligence and mental approach of the students, and allowing the learners to read a part of the passage, and solve easy questions related to the passage in groups. Later on, as per planning, a post-test was conducted where the results showed that 68% given students achieved remarkable progress in English reading & writing. This study provided encouraging insights into using differentiated instructions in improving language comprehension skills as compared to traditional teaching methods.

Keywords:

Differentiated instruction; mixed-ability; classroom; comprehension skills

Introduction

Pakistan is a country with a heterogeneous population belonging to various socio-cultural and economic backgrounds. The people in each province are a mix of different psychological and cultural foundations who react, perceive and reproduce one situation in different ways. Therefore, they exhibit different personality traits and think differently in the same arrangement of events. Family, culture, religion and social norms affect the thinking and processing styles of the individuals in this society. Similarly, the teachers and learners share similar disparity in cognitive levels and follow the same teaching and learning process.

As we know students of the same age group are not all alike when it comes to learning in terms of size, hobbies, personality, or likings and disliking. Some students are auditory learners, some are visual learners, and yet others kinesthetic learners who prefer to learn through touch and movement. Struggling learners sometimes become more successful learners just because their way of learning is readily accessible through both teacher's design and the student's choice (Tomlinson C. A., 2001).

At the secondary level of schooling, the teaching reading skill is lecture-based; the entire text is translated into Sindhi/Urdu or any other local language for the students. As a result, students remain passive learners as the focus remains on translation, thus lacking the required reading comprehension skills (Ahmed, Thomas, & Hamid, 2020).

Therefore, students differ as learners in terms of background experience, culture, language, gender, interests, readiness to learn, modes of learning, speed of learning, support systems for learning, self-awareness as a learner, independence as a learner, and a host of other factors (Tomlinson & Imbeau, 2010).

According to a survey of the Annual Status of Education Report (ASER) in the post-pandemic situation, the reading ability of elementary students was 39.73 & that of matriculation students remained at 43.66 (Idara-e-Taleem-o-Aagahi, 2021). The comprehension skills are not as strong as they should be due to the lecture method, unavailability of English teaching method as a second language and variety in students' learning abilities, interests and poor teaching resource materials. English reading classes in Pakistan are generally overwhelmed by conventional methods for teaching reading skills....There is hardly any provision for activity-based teaching of reading skills that may provide a hands-on experience for learners to acquire reading comprehension skills (Ahmed, Thomas, & Hamid, 2020).

Keeping in view the mixed-ability classrooms and the student's lack of interest and ability in reading comprehension, differentiated instructions are adopted to study its effects on boosting students' comprehension skills as compared to the traditional method of instruction.

A quasi-experimental study was designed and conducted on the students of grade IX in a public school in District Shikarpur. The study focused on the effects of differentiated instruction on the comprehension skills of students in the English subject of class IX. To conduct the study, 24 students were selected. A pretest on the reading comprehension and solving exercises was taken as a diagnostic assessment. The result produced that 6 (24% of) students could succeed in reading only the English subject of class nine.

Objectives

- To explore the effects of differentiated instruction on the reading comprehension skills of students in English at the secondary level
- To investigate the relationship between the learning experience and learning

achievement during hover differentiated instruction is applied

Hypotheses

- H. There is a significant effect of differentiated instruction in the improvement of comprehension skills of students in English in a classroom of mixed ability at the secondary level
- H0. There is no effect in the improvement of comprehension skills of students in English in a classroom of mixed-ability at the secondary level

Delimitations

The study was conducted on the students of class IX at Agha Badruddin Khan Durrani Government Boys Higher Secondary School Garhi Yasin, District Shikarpur Sindh. The subject chosen for this study was English and the Textbook for class IX published by Sindh Textbook Board is used as the content of the study. The comprehension skills in reading and attempting the questions related to the passage were hypothesized & tested for the results

Significance of the study

Instruction methods have a grave impact on the teaching-learning experience. Apart from the physical settings of a classroom, and along with the availability of the content, the teaching methods are indispensable in imparting knowledge, helping in understanding, and improving the skills & attitudes among the learners in a classroom. Students in a classroom are the same in age but have multiple intelligence, learning style, aptitude level and cultural background differentiated instruction can better meet the diverse needs of students (Tomlinson C. A., 2001). The study aims at finding out the effects of differentiated instruction methods in improving reading comprehension skills and discovering the impact of its absence in a class of mix-ability.

Literature review

Differentiated Instruction (DI) is defined in the literature as an adaptable,

justified, equitable and intelligent way of teaching and learning (Suprayogi et al., 2017). The precursor notion of the DI is encompassing the diversity of the learners into account; thus, it provides the flexibility to meet the varying needs of the pupils in a mixed-ability classroom. Hence, through the instruction differentiation teacher can provide a variety of activities that can contextually tailor to the student's needs as suited. This is not limited only to the instruction, but it can help in creating the student ability-oriented individualistic assessment that can provide a realistic understanding of the student's academic achievement (Santangelo & Tomlinson, 2012; Suprayogi et al., 2017). In literature, the DI is also referred to as student-centred instruction, individualized instruction, differentiated assessment etc., but all these terms refer to the central theme of differentiated instruction. That is, to meet the instructional needs of students of mixed ability by providing a variety of context-dependent instructional activities, assessing the student's individualized instructional requirements and focusing on maximum attainment of learning outcomes (Fox & Hoffman, 2011; Ismajli & Imami-Morina, 2018).

Dimensions of Differentiated Instruction

Nanang Suprayogi and Valcke (2016) discuss the dimensions of differentiated instruction as a student-centred approach. The authors drive five dimensions of DI from the literature i.e., a) DI should be addressing student diversity, b) utilizing diverse teaching strategies, c) using a variety of learning activities d) catering to individual students instructional needs and e) attaining optimal learning outcomes. These dimensions provide a holistic view of the scope of DI in a classroom setting where the focus remains on the philosophy that no approach can fit all thus, the attainment of optimal learning outcomes is possible through appreciating the fact that all learners are different, their instructional

needs can be satisfied by adopting a variety of instructional strategies. Moreover, the instruction should provide activities that can address the needs of fast as well as slow learners in the mixed-ability classroom and the focus should always remain on individual students, the constant assessment of their learning needs can help in achieving optimal objectives.

Differentiated Instruction in the context

Differentiated instruction is being researched and analyzed for various subjects such as science education Al-rsa'i & Shugairat (2019) studied DI with the help of technology and found its helpfulness for science curriculum and instruction. In this study, the authors argue that teachers can differentiate content, product, process and environment for making instructions effective and addressing the issues of learning profile, interest and readiness on the students' part. Nurasiah et al. (2020), study the effects of DI on the communication ability of students in mathematics for this study the authors adopt experimental, pre-test, and port test designs. The mathematical communication ability was found to improve that of the experimental group from the control group. Moreover, differentiated instructions are studies for improving the student's understanding of mathematics instructions at the primary (Walpole & McKenna, 2007) and secondary levels (Cardimona, 2018). The studies also show that DI can improve inclusion in naturally diverse classrooms, and it also helps in creating a positive learning environment in such classrooms (Celik, 2019). The effects of DI on language learning is a key focus of the researchers as it is identified in the literature that language learning is a complex task thus the diversity of learners is a crucial factor in language teaching learning classrooms (Heydon, 2003; Roy et al., 2013). Moreover, for improving the students' comprehension and fluency in a diverse classroom, the DI is found helpful to meet the student's needs

especially when instruction and content diversification were used together (Firmender et al., 2013). The DI is found helpful in English as Foreign Language (EFL) classes especially when the focus is on language teaching and the students are of mixed ability (Chien, 2012; Komang Arie Suwastini, 2021).

Teachers may offer students adapted content, offer various options in the learning process, use different assessment products, or adapt the learning environment to students' learning needs (Tomlinson, 2014). Vygotsky (1978, 1986) proposed that an individual learns in his or her "zone of proximal development" (ZPD). This term refers to a point of required mastery where a child cannot successfully function alone, but can succeed with scaffolding or support. In that range, new learning will take place. The teacher's job is to push the child into his or her zone of proximal development, coach for success with a task slightly more complex than the child can manage alone, and, thus, push forward the area of independence (Tomlinson, et al., 2003).

Differentiated instruction is a pedagogical-didactical approach that provides teachers with a starting point for meeting students' diverse learning needs. Although differentiated instruction has gained a lot of attention in practice and research, not much is known about the status of the empirical evidence and its benefits for enhancing student achievement in secondary education (Smale-Jacobse, Meijer, Helms-Lorenz, & Maulana, 2019).

"All students will read and analyze literary text to seek information, ideas, enjoyment, and to relate their own experiences to those of common humanity as depicted in literature." (National Curriculum for English Language, 2006). The reading ability of elementary students was 39.73 & that of matriculation students remained at 43.66. (Idara-e-Taleem-o-Aagahi, 2021)

English reading classes in Pakistan are generally overwhelmed by conventional methods for teaching reading skills. There is hardly any provision for activity-based teaching of reading skills that may provide a hands-on experience for learners to acquire reading comprehension skills (Ahmed, Thomas, & Hamid, 2020).

Research Methodology

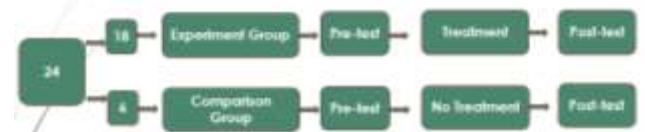
Research Design

The mode of research was Quantitative Research with a Quasi-Experimental design. The Quasi-Experimental designs are used when a programme or policy is viewed as an 'intervention' in which a treatment – comprising the elements of the programme/policy being evaluated – is tested for how well it achieves its objectives (White & Sabarwal, 2014). In a quasi-experimental design, the Non-equivalent Control Group Design is a common approach. This design is very much like the pretest-posttest control group. In the non-equivalent control group design, two (or more) treatment groups are pretested, administered treatment, and post-tested. The difference is that it involves the random assignment of intact groups to treatments, not a random assignment of individuals. (Mills & Gray, 2019).

The selected sample from the target population was not the same in comprehension skills because all students were not equal in several aspects of language comprehension. Some were good readers; some were medium-level readers and others were mediocre readers. Good readers were placed in Group 1 and medium and mediocre readers were in Group 2. Group 1 was treated with this differentiated instruction and was labelled as the Experimental Group whereas Group 2 was treated with the traditional way of teaching, and termed as the Control Group but was more accurately referred to as the Comparison Group (Mills & Gray, 2019).

The procedure of Differentiated Instruction

The teacher/researcher chose two groups of the same class on a random basis, carried out the pre-test and the results were recorded. One group received the new treatment (Differentiated instruction), and the other Group was treated with the same traditional method of instruction. Within the Experimental Group, the teacher/researcher divided the students into two groups as per the results of class observation and pre-test and divided the lessons into smaller pieces as per the needs and interests of students. The students, who were good at reading, were made in-charges of other groups. The teacher shared the responsibility among the students to create an environment of collaborative learning. The teacher applied new instruction methods according to the needs and abilities of the students of the experimental groups. These different instruction methods were as, Read-aloud, Scaffolding, Tutoring, Collaborative Learning, Read & Lead, Pair reading (of a fast with a slow reader), Motivating Moments, Increasing the reading material dose and A.V aids. The students were allowed to read a sentence, two or a full given passage as per their need, interest, and readiness. After completing the reading comprehension task, the teacher broke the writing exercises about the broken passages. The students, after finishing up the given passage and with "Differentiated instructions", were asked to solve the writing exercises starting from one question to too many questions as per their understanding.



Population Table (Annex A)

(Directorate General Monitoring and Evaluation, 2021), (Idara-e-Taleem-o-Aagahi, 2021)

Sample

24 Students of grade IX from Agha Badaruddin Khan Durrani Government (B) Higher Secondary School Garhi Yasin were selected for English based on a convenient sampling technique. Students were divided into groups based on non-equivalent groups which is the best design for this format of study (James, Garbutt, & Simister, 2017) because each group already existed with different intelligence and physical levels in the same classroom. Six good readers were put into the Comparison Group and 18 students were placed in the Experimental Group.

Data Collection Tools

The passages & exercises of Unit 2 and Unit 3 were used as an instrument for the data collection which was noted down in a separate sheet after every part assigned during the DI. A sheet of paper with the names of the students was used to record the development changes between the groups after the intervention of the treatment.

Data Collection

The data was collected through Informal Assessment (classroom observation), pretest and posttest by using the text & exercises from the English Textbook of class IX published by Sindh Textbook Board Jamshoro (Updated version 2020-21). The data were collected on two different aspects of students which are Reading Skills and Writing Skills.

Data Analysis

The data was analyzed by using 2-group tests & regression tools in SPSS to find out the effects of the development intervention on the dependent variable. The tools measure the comparison of development in intervention on an experiment and a comparison group (James, Garbutt, & Simister, 2017).

Results (Pre-Test)

The informal assessment (classroom observations) and pretest showed that the class contained distinctively three groups of students according to their reading abilities.

Group 1 = Good readers = they could read the entire passage with some hesitation and mistakes. They could attempt all questions from the given exercise with some mistakes.

Group 2 = Medium Readers = which could read a few sentences with mistakes in pronunciation. They could attempt a few questions from the given exercise some mistakes

Group 3 = Mediocre Readers = which could not read a single word or hardly 1 or two words. They could attempt either no or one question from the given exercise for some mistakes.

Results (Post-Test).

Table 1 (Annex B)

Table 1 shows that the standard deviation in the pretest reading is 87.094 and in a post-reading is 63.171, whereas the deviation in pretest writing is 2.512 and in post-test writing is 2.119. There is a difference of 24 points in reading and 0.393 in writing skills after the treatment was applied. This shows that there is a significant effect of differentiated instruction on reading skills and writing skills.

Table 2 (Annex C)

Table 2 shows the correlation between two the variables in the pre-test and post-test results. The positive results in correlation mean that there is a positive relationship between the variables. Figure .828 in post-test results shows that the new teaching technique has laid down positive effects on the reading and writing skills of the students as compared to the traditional teaching method of teaching.

Table 3 (Annex D)

Table 3 gives off new data of proving the alternative hypothesis. The standard deviation in the pre-test is 85.035 whereas in the post-test it is 61.428 which signals an effect in the results intervention. The increase in the t-value of 4.252 in the pre-test to 11.145 in the post-test proves the size of the difference in the results after and before the treatment was applied. The significance value of the post-test is positive when it is lower than 0.05, and as in this group test, the value is .0000000005

which is positive and hence proves that the new intervention of differentiated instruction in the mix-ability classroom has positive effects on the comprehension skills of the students.

Conclusion

In a classroom, the students are not equal learners. The singular teaching method cannot meet their needs, interest and readiness levels. Therefore it is an internationally recognized practice to use different methods of teaching any skill to a class. This experimental study provided encouraging insights into using differentiated instructions in improving comprehension skills as compared to traditional methods of teaching. Within a short period, participants observed the display of positive effects of the novel instructions. They improved in their reading and writing aspects in English subject. Though the study was conducted at a small scale population, it can be suggested that the differentiated instruction can be tried in other subjects such as biology and social studies and even in other classes such as four or twelve for more data and proof of the utility and effects of the differentiated instruction at large scale

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**(Annex
Population**

A):

Division	District	Total Number of Public High/Higher/Elementary Schools	Population (IX-students)	*Literacy Rate	Total Number of Teachers
Larkana	Shikarpur	1374	6,508	50%	4,205

(Annex B) Table No. 1**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test in reading	75.00	24	87.094	17.419
	Pre Test in writing	2.68	24	2.512	.502
Pair 2	Post Test in reading	140.28	24	63.171	12.634
	Post-test in writing	3.36	24	2.119	.424

(Annex C) Table No. 2**Paired Samples Correlations**

		N	Correlation	Sig.
Pair 1	Pre Test in reading & Pre Test in writing	25	.825	.000
Pair 2	Post Test in reading & Post-test in writing	25	.828	.000

(Annex D) Table No. 3**Paired Samples Test**

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	Df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pre Test in reading - Pre Test in writing	72.320	85.035	17.007	37.219	107.421	4.252	24	.000
Pair 2	Post Test in reading –Post-test in writing	136.920	61.428	12.286	111.564	162.276	11.145	24	.000000005