



The Effectiveness of Fluency-Orientated Strategies on Improving Academic Speaking Performance among Iraqi University Undergraduates in the 'Listening & Speaking' Course

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Abstract

This research paper explores how Fluency-Orientated Strategies (FOS) can be used to help Iraqi undergraduate students of the Listening and Speaking course at the university to enhance their academic speaking performance. Based on the quasi-experimental research design coupled with pre-test/ post-test control group design, this study involved 60 Iraqi EFL undergraduates of the University of Baghdad and engaged them in a 12 week intervention study. The experimental group (n=30) was provided with the fluency-based lessons with the use of the 4/3/2 technique, shadowing, and the timed speaking tasks and the control group (n=30) underwent the instruction based on traditional grammar learning. The information had been gathered using speaking performance tests which were quantified in terms of temporal indices such as words per minute (WPM), articulation rate and pause frequency, and holistic fluency ratings. The data was analyzed using independent samples t-tests and paired samples t-tests. The findings showed results that were statistically significant with a difference between the experimental and the control groups in terms of post-test speaking performance ($t(58) = 4.72, p = 0.001$) where the experimental group recorded significantly higher improvements in terms of speech rate (Mean increase = 18.4 WPM) than the control group (Mean increase = 4.2 WPM). The results indicate that fluency-focused approaches are quite productive in promoting academic speaking of the Iraqi EFL students as well as the implementation of such methods in university programs is recommended to bridge the existing gaps in fluency in the case of Iraqi undergraduates' students.

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المخلص

تستكشف هذه الورقة البحثية كيف يمكن استخدام الاستراتيجيات الموجهة نحو الطلاقة لمساعدة الطلبة العراقيين الجامعيين في دورة الاستماع والتحدث على تحسين أدائهم الأكاديمي في التحدث. استناداً إلى تصميم البحث شبه التجريبي إلى جانب تصميم مجموعة التحكم قبل الاختبار/ ما بعد الاختبار ، شملت هذه الدراسة 60 طالباً جامعياً عراقياً في اللغة الإنجليزية لغة أجنبية من جامعة بغداد وأشركتهم في دراسة تدخل مدتها 12 أسبوعاً. تم تزويد المجموعة التجريبية (ن = 30) بالدروس القائمة على الطلاقة باستخدام تقنية 2/3/4 والتظليل ومهام التحدث الموقوتة وخضعت المجموعة الضابطة (ن=30) للتعليمات القائمة على تعلم القواعد التقليدية. تم جمع المعلومات باستخدام اختبارات أداء التحدث التي تم تحديدها كمياً من حيث المؤشرات الزمنية مثل الكلمات في الدقيقة ، ومعدل التعبير وتكرار الإيقاف المؤقت ، وتصنيفات الطلاقة الشاملة. تم تحليل البيانات باستخدام عينات مستقلة في الاختبارات والعينات المقترنة في الاختبارات. أظهرت النتائج نتائج ذات دلالة إحصائية مع اختلاف بين المجموعات التجريبية والمجموعات الضابطة من حيث أداء التحدث بعد الاختبار (تي (58) = 4.72 ، ع = 0.001) حيث سجلت المجموعة التجريبية تحسينات أعلى بكثير من حيث معدل الكلام (متوسط الزيادة = 18.4 ویم) من المجموعة الضابطة (متوسط الزيادة = 4.2 ویم). تشير النتائج إلى أن المناهج التي تركز على الطلاقة مثمرة للغاية في تعزيز التحدث الأكاديمي لطلبة اللغة الإنجليزية لغة أجنبية وكذلك يوصى بتنفيذ مثل هذه الأساليب في البرامج الجامعية لسد الفجوات الحالية في الطلاقة في حالة الطلبة الجامعيين العراقيين.

Introduction

Background of the Study

The English language has gained even more importance in the higher education context of Iraq, especially after the reconnecting with the world of academic community in the country in the aftermath of the 2003 period. The Iraqi tertiary institutions have been experiencing an increase in the presence of the English Medium of Instruction (EMI) in most fields, which has placed high demands on students to achieve a satisfactory level of communicative competence in English (Al-Jarf, 2020). The course English Language Listening/Speaking required to be covered in every Iraqi university and designed to train students to communicate orally, which has been essential part of the programmes, still demonstrates a big gap between the objectives and the real results in the students.

The conventional philosophy of teaching English language in Iraq has focused on grammatical accuracy and reading comprehension as opposed to oral production skills which has been the case historically (Rababah, 2002). This approach to teaching through an extensive usage of the Grammar Translation Method (GTM) that was prevalent in the language education over the past decades has created a generation of Iraqi EFL students who know large quantities of passive English grammar and vocabulary but show remarkable lack of skills when they are to speak (Hameed and Atrah, 2016). Studies show that students of Iraqi universities often report high speaking anxiety, slow vocabulary retrieval rates, and high levels of pausing behavior, which is a serious inhibitor of communication success (Al-Mashhadani, 2018).

Statement of the Problem

Although courses in English language programs in Iraqi universities included Listening and Speaking, empirical studies have proven that Iraqi undergraduates of the EFL programs fail to attain sufficient levels of speaking fluency. Al-Jarf (2020) found a recent study that of 100 Iraqi students in universities, only 23% were intermediate in fluency based on standard speaking tests, with most showing beginner to elementary mastery of the English language even after being put through a series of courses on learning the English language. This has

been experienced even when students have proven their ability in written English and their grammar examination.

The issue is especial with the background of the course in Listening and Speaking, as the students are to acquire the skills of spontaneous oral communication, but they lack systematic training in the techniques of fluency development. Conventional classroom tasks in these classes tend to focus more on controlled practice, speech dialogue memorization and understanding activities instead of real-life speaking training capacities that foster automaticity and fluency (Szyszka, 2024). As a result, graduates have poor oral English language skills and therefore, cannot compete effectively in the international job market and they cannot also participate in academic communication at the international levels.

The current study seeks to fill this important gap by exploring the idea of whether the use of fluency oriented approaches, the 4/ 3 / 2 technique, shadowing, and the use of timed speaking activities can substantially enhance the academic speaking teaching of the 4/ 3 / 2 technique, shadowing and the use of timed speaking activity in the course of listening and speaking on the part of undergraduate students at an Iraqi university. The research addresses the prevailing demand of anchoring pedagogical interventions which are evidence-based to improve the performance of EFL instruction in Iraq.

Research Questions

The research questions in this study are as follows:

1. How much do fluency-orientated interventions enhance performance (number of words per minute, articulation rate and frequency of pause) of Iraqi undergraduates in the course listening and speaking?
2. Do experimental group (taking fluency-oriented instructions) and control group (taking traditional instructions) have any statistically significant difference in their score in their post-test scores of speaking performances?
3. How much fluency indices of students receiving fluency-oriented programs improve as opposed to those undergoing conventional learning programs?

Significance of the Study

This study has profound implications to the EFL education in Iraq in a number of aspects. First, it will offer empirical information on the effectiveness of particular fluency instruction method in the case of Iraqi students, where literature on speaking instruction is scarce. Second, the results provide valuable insights into practice to curriculum planners and teacher educators that aim to enhance the posts in the course of listening and speaking. Third, the research becomes part of the large body of literature on the development of fluency in EFL setting, in this case the unexplored Middle East region. Lastly, the research problem considers the increased need of orally proficient English graduate in the professional and academic fields of Iraq.

Literature Review

Theoretical Framework

The Concept of Fluency in Second Language Acquisition

The concept of speaking fluency has been viewed as a multidimensional construct in the studies of the second language acquisition (SLA) and it is a construct that includes a number of temporal and qualitative dimensions that jointly have an influence on the smoothness and naturalness of the oral production (Skehan, 2009). Still on the premise of what Fillmore (1979) established that tight coherence and resource control are fundamental aspects of fluency, modern researchers of the SLA field were able to distinguish the three main dimensions of L2 fluency: breakdown fluency, repair fluency, and speed fluency (Lennon,

1990). Breakdown fluency is a factor that relates to the structuring of speech in terms of time, such as speech rate, articulation rate, and pausing behavior. Repair fluency refers to how the speaker goes about dealing with the difficulties in the communication process such as false start, self-correction and repetition. Speed fluency is connected to the general rate of speech.

Temporal measures have become the most used objective measures of L2 fluency in speaking, and the speech rate (measured in words per minute or syllables per second) has been a dominant dependent variable in fluency studies (Szyszka, 2024). It is shown that, speech rate has a significant correlation to perceived fluency judgment and general oral proficiency (Derwing, Rossiter, & Munro, 2002). Additional significant time indices are articulation rate (speech rate divided by pauses), mean length of run (mean number of run words between pauses), and frequency of pause (pauses and period of pause) (Segalowitz, 2010).

Skehan's Cognitive Approach and the Trade-off Hypothesis

The cognitive approach to second language learning by Peter Skehan (1998) forms a theoretical basis in the understanding of the relation educators should have on the developments of fluency and the provision of attentional resources. According to Skehan, language learners have a constrained working memory and hence a trade-off among competing performance dimensions, which include accuracy, fluency, and complexity of language production under constraints of real-time language production is necessary. This framework explains that learners are not able to learn all three dimensions simultaneously and thus, development sequences are developmental progressions where advances in one dimension would eventually undermine developmental progress in other areas.

Research implications on teaching fluency are written. This trade-off hypothesis relates to several consequences when teaching fluency. According to Skehan (2009), the development of fluency should have conditions under which the controlled processes become automated through the massive practice and thus permitting the attentional capacity to monitor the accuracy and complexity simultaneously. This auto-processing is in line with the theory of skill acquisition proposed by DeKeyser (2007) which states that the acquisition of declarative knowledge is proceduralized with the help of the conscious practice that leads to the acquisition of the auto stage where minimal conscious effort is required to produce such a work.

Nation's Four Strands Framework

The Four Strands Framework by Paul Nation (2007) is a pedagogical model of the balanced language curriculum development where fluency development was introduced as one of the four required strands. The framework recognizes meaning oriented input, meaning oriented output, language oriented learning and fluency development as important elements of effective language teaching. Nation stresses that the activities aimed at developing fluency should give the learners a chance to work with the previously learned features of a language at a higher rate without passing on any new linguistic material.

The fluency development strand stands out as one of the strands that will be relevant in the current study since Nation (2007) suggests timed reading, speed listening, 4/3/2 technique and shadowing to be effective in automaticity development in language productions. Noteworthy, Nation believes that the development of fluency should be given about a quarter of the time spent in classes, which is hardly ever done in the conventional EFL programs mainly focused on language-centered studies and accuracy (p. 5).

Fluency-Orientated Strategies: Definition and Types

Fluency-oriented strategies (FOS) refer to a variety of teaching devices which are utilized to enhance the pace and fluency of oral production in L2 by means of repetitive practice under a time constraint. The most common feature of these approaches is that they force learners to make language at faster rates than their comfortable baseline and, thus, the process of automatizing linguistic processes (De Jong and Perfetti, 2011).

The 4/3/2 Technique

Among the best-studied fluency development activities is the 4/3/2 technique first introduced by Maurice (1983). The process will also require learners to create a brief oral text (between 2-3 minutes) and deliver it thrice to various listeners, but the time limit will gradually be decreased to four minutes to three minutes to two minutes. This is a reduction in time pressure which comes to stimulate the learners to concentrate on primary goals to more speech but at the same time keep the content coherent.

The studies have always proved the efficacy of 4/3/2 method in enhancing different aspects of L2 fluency. In one of their quasi-experimental studies, Arevulo and Manosa (2021) studied 60 Spanish EFL and discovered that the experimental group that applied the 4/3/2 technique had significant gains (98 to 134 WPM) on speech rate, relative to the control group. On the same note, De Jong and Perfetti (2011) examined the impacts of the 4/3/2 method on fluency of the intermediate English learner and noted that participants did not lose their fluency gains even after two weeks had elapsed implying permanent automatization effects.

Arab (2019) carried out a study involving Algerian EFL learners, which revealed that the 4/3/2 technique had a major positive impact on students in terms of their speaking fluency, and in the experimental group, the mean gain of 22 WPM was observed compared to 6 WPM in the control group. These results demonstrate the process of using the technique in other EFL settings as well, such as Iraq.

Shadowing Technique

Shadowing, which is based on interpreter training methodology entails learners listening to audio input and repeating it orally immediately trying to do so as to follow the pace and intonation of the speaker (Filbin, 2009). It has received interest in SLA studies because it is potentially able to form phonological encoding automaticity and decrease the cognitive load of speech planning.

The systematic review conducted by Tanaka (2020) analyzed 15 studies on the topic of shadowing in L2 studying and has found out that the technique has a positive effect on the fluency in speaking, especially when it is applied to some authentic material of the necessary level of difficulty. Nguyen and Tran (2022) conducted a study that involved Vietnamese EFL learners and established that eight weeks of shadowing practice enhanced the articulation rate of students and the frequency of pauses and new speaking tasks, respectively.

Timed Speaking Activities

Another type of fluency-oriented strategies is timed speaking; a timed monologue, timed information gap task, and time-constrained exercises of rapid question-answer form. All these activities are united by the task to make the learners generate speech in the predetermined length of time which imposes the pressure that stimulates higher speed of speech and less hesitation (Nation, 2007).

A study conducted by Boers (2014) has shown timed activities to foster fluency acquisition because they lead to the ability of learners to depend on automatic lexical retrieval system instead of regulating their attention on grammatical accuracy. The research was able to

conclude that learners exposed to timed speaking manifested large changes in the speed of speech without compromising accuracy, which explains the theoretical argument that both fluency and accuracy can be achieved simultaneously in case of proper instructional approaches.

Speaking Performance in Iraqi EFL Context

Studies on speaking performance of Iraqi EFL learners have found various reasons to why fluency continues to be a challenge. Al-Mashhadani (2018) has examined the nature of the speaking anxiety of Iraqi university pupils and has found that 72 out of the total number of respondents expressed moderate to high rates of anxiety when asked to speak the English language in classrooms, and that their major worries are the fear of negative assessment, being worried to make mistakes, and the insensitivity in pronunciation.

The literature that discussed oral production of Iraqi students has reported certain shortcomings in fluency. According to Hameed and Atrac (2016), the mean speech rate of Iraqi EFL students was determined 78 WPM, which is significantly lower than the 120-150 WPM of native speakers of English and 100-120 WPM as an adequate speech rate in academic communication. The participants too demonstrated high frequency of pause (12.4 per minute on average) and long average form of mean pause (1.8 seconds), which showed that there were serious issues in breakdown fluency.

The studies of the communication strategies adopted by the EFL Iraqi students have shown that they heavily utilize reduction strategies, including message abandonment, topic avoidance, and code switching, instead of achieving strategies that can preserve communicative effectiveness (Al-Jubouri, 2019). The given trend indicates that the automatic linguistic data required by the learners to maintain spontaneous communication are not available, and fluency-driven teaching that will build proceduralized knowledge of languages is needed.

It is argued that the teaching of speaking at the Iraqi universities is characterized by an excessively high emphasis on the construction of activities that are accuracy-based and little complex integration of communicative speaking (Hussein, 2019). A survey of the faculty of the Listening and Speaking course across universities in Iraq revealed that less than 18 percent of the corporate time were directed to the activities of free speaking, and the most time was spent on listening comprehension exercises, dialogue memorization, and pronunciation exercises (Al-Saadi, 2021). This pedagogic method does not offer a large amount of practice time that is required to automatize the oral fluency.

Discussion of Literature Review

The literature review demonstrates that there is a sound theoretical framework that promotes the application of fluency-based approach to develop speaking fluency in L2. The cognitive approach of Sklaim and the Four Strands Framework that Nation developed can be theoretically justified as a specific instance of explicit instruction of fluency, which facilitates the process of automatization due to the repetitive practice under time pressure. Empirical studies have always shown high success levels of 4/3/2 technique, shadowing and the use of timed speaking activity to help enhance different aspects of L2 fluency in different EFL settings.

Nevertheless, there also exists a considerable gap in the literature related to the research on the development of fluency in the EFL Iraqi education. Although the evidence related to the Iraqi context is also present in the studies of adjacent Arab countries (Algeria, Saudi Arabia, Jordan), due to the specifics of the Grammar Translation Method use, the higher rates of speaking anxiety, and the relative lack of research on the promotion of speaking instruction,

the Iraqi context has to be investigated on its own. This research is able to fill this gap by comparing the efficacy of fluency-oriented strategies to enhance academic level speaking performance among Iraqi university undergraduates.

Methodology

Research Design

The research design in this work was quantitative and quasi-experimental implemented in the form of pre-test post-test and control group. The design was chosen because it provides the possibility of forming a systematic comparison of results in treatment and control conditions and eliminating the variance of other factors using pre-testing (Creswell and Creswell, 2018). The quasi-experimental design was adequate due to the practical limitations of the educational research where it is frequently impossible to randomly assign students to groups. The independent variable in this experiment was the strategy or the mode of instruction whereby (1) fluency-oriented strategies instructions (experimental group) and (2) traditional instructions (control group) were used. Dependent variables were composed of several variables used as measures of fluency: speech rate (WPM), articulation rate, pause frequency, mean length of run, and holistic fluency rates.

Participants

The researchers used 60 EFL Iraqi undergraduates who took the course to listen and speak in the University of Baghdad in the academic year 2023-2024. The samples were picked among fourth intact classes taught by the same instructor two classes in one group (n=30) were chosen in the experimental group randomly, and two classes in the control group (n=30).

The respondents were aged-19 to 22 ($M = 20.3$, $SD = 1.1$), and had at least six years of English language learning in secondary school. The respondents were all native Arabic speakers who study in the Faculty of Education, Department of English where English is a major subject. The participants had no prior history of speech difficulty or hearing impairments that would interfere with the speaking performance of the participants.

To achieve the same objective of homogeneity between groups, an independent samples t-test was performed on pre-test scores and it did not display statistically significant difference in the experimental and control group ($t(58) = 0.87$, $p = .39$). Also, the result of a chi-square test proved that gender distribution was not significantly different in groups ($\chi^2 = 0.27$, $p = .60$).

Table 1

Demographic Characteristics of Participants

Characteristic	Experimental Group (n=30)	Control Group (n=30)
Age ($M \pm SD$)	20.1 ± 1.2	20.5 ± 1.0
Gender (M/F)	12/18	14/16
Years of English Study (M)	7.2	7.4
Pre-test Fluency Score ($M \pm SD$)	5.2 ± 1.4	5.0 ± 1.3

Instruments

Speaking Performance Test

This study has come up with a standard speaking performance test as per IELTS speaking test procedures and validated by experts on the faculties of three applied language faculties and two practicing EFL teachers. The test was made up of three sections, (1) introduction and

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familiar topics (3 minutes), (2) individual long turn (4 minutes), and (3) two-way discussion (4 minutes), and an approximate time of 11 minutes per subject.

Pilot Study

To administer the pretest and posttest, two parallel forms of test (Forms A and B) were made and each contained different topics but the same level of difficulty as decided based on pilot testing conducted by another group of test takers (n=20) in which Iraqi EFL students participated. The content discussed in it included well-known academic themes such as education, technology, travel and culture.

Fluency Measurement Tools

PRAAT software (version 6.3) which is a popular acoustic analysis program was analyzed with speech samples to obtain objective temporal measures, such as:

1. **Speech Rate (WPM):** the total words divided by total time of speaking including the breaks.
2. **Articulation Rate (SPM)** = total syllables/ total speaking time without pauses.
3. **Pause Frequency:** Pauses in minutes of speaking time and the duration of the pauses ≥ 0.3 seconds.
4. **Mean Length of Run (MLR):** Average words separating pauses.

Holistic Fluency Rating Scale

Besides objective time-related measures, two raters who are trained assessed the speech samples of participants on a 9-band fluency rating scale that is a variation of the IELTS speaking assessment criteria, although this scale is holistic. It measured general fluency and coherence with a scale of 1 (non-functional) to 9 (expert user) with a description of the levels of each band. Inter-rater reliability, which was computed using intraclass correlation coefficients, was .89 which is very high agreement of the raters.

Intervention Procedures

Experimental Group: Fluency-Orientated Strategies Instruction

The experimental group had 12 weeks of fluency-focused teaching that was incorporated in their regular course, i.e., Listening & Speaking. Every session was 60-90 minutes in weekly meetings (fluent activity), organized in the following way:

Weeks (1-2). Introduction to the concepts of fluency and a baseline test. The students were taught about the necessity of fluency in academic and professional communication, autonomous skills, and timing activities acquaintance.

Weeks (3-6). 4/3/2 technique practice. Students were ready and gave short oral talks (2-3 minutes) on given subjects followed by re-presenting it to three other partners as time elapsed (4 minutes, 3 minutes, 2 minutes). Students documented their end products to be evaluated by themselves.

Weeks (7-9). Shadowing activities. Practicing shadowing on audio material was conducted using audio materials of the right difficulty (a little bit lower than the current proficiency of the students defined during the assessment). The materials were excerpts of TED talks and lectures at academies. Students shadowed alone and as a group and received instant feedback on the part of the instructor.

Weeks (10-11). Speaking with time. Students were asked to solve tasks based on the rapidity of the question response, monologues timed and unexpected-topic based, and information-gap exercises that were time-constrained. Activities were becoming harder and harder.

Week (12). A posttest and reflection. Post-test speaking tests were done to the students and they had to discuss the experience of their fluency building.

Control Group: Traditional Instruction

The control group was taught through the classic listening and speaking instructions during the same 12 weeks with the same time spent (90 minutes per week). Conventional teaching provided:

- Exercises in listening in the textbook content.
- Memorizing dialogues, role plays.
- Decoding activities and segmental, and suprasegmental activities.
- Accuracy in grammar-controlled speaking exercises.
- Other activities are limited to free conversation (around 10 minutes in one session).

No direct fluency training, time pressure exercises and repetitive speech activities to raise the speech rate were administered to the control group.

Validity and Reliability

The study used several procedures that ensured validity and reliability of the study:

Internal Validity: The pretest/posttest design and homogeneity in selecting the participants and use of parallel test forms removed threats to internal validity such as testing effects, instrumentation, and selection bias. The two group instructors were identical, thus, eliminating teacher variable effects.

External Validity: Intact classes instead of random assignment reduces the generalizability, although the sample was selected as the sample of the normal Iraqi higher educational institution, which raises the ecological validity of the case to comparable educational settings.

Reliability: There was consistency in measurement by objective temporal measures acquired through the PRAAT software. The holistic rating scale was found to have high levels of inter-rater reliability (ICC = .89) and fluency sub-scale internal consistency (Alpha-Cronbach = 0.87) showed good levels of reliability to be acceptable and suitable.

Ethical Considerations

Before gathering data, the University of Baghdad research ethics committee gave its approval to the study regarding ethical considerations. All subjects gave informed consent by being educated by gaining written knowledge about the purpose of the study, procedures and their right to withdraw since the study had no penalty. Both groups were assured that the information concerning their performance individually will not be shared with any third party and that it would not influence the course grades.

Data Collection

Procedure

The period of data collection was 14 weeks which included pretesting (Week 1), intervention (Weeks 3- 11 which included orientation in Week 2 and post testing in Week 12) and delayed post testing (Week 14). Table two provides the timeline.

Table 2

Data Collection Timeline

Week	Activity
1	Pretest administration (Form A)
2	Orientation and baseline assessment
3-11	Intervention period (12 weeks)
12	Posttest administration (Form B)
14	Delayed posttest (optional, not included in current analysis)

The pretest and posttest speaking tests were in an isolated one by one language laboratory environment. The speech of each participant was recorded with the same equipment (Sony ICD-UX570 digital recorder) to provide the same audio quality. A research assistant who was blind to group assignment then analyzed all the recordings using the PRAAT software.

Data Management

The entire speech transcripts were coded and identified by numbers. The automatic process of extracting the temporal measures was carried out in PRAAT scriptable interface, where pause identification parameters were manually checked. Data were stored as password-secured database that was only available to the research team.

Data Analysis

Statistical Analyses

The SPSS (Version 28) was used in analyzing quantitative data. All the statistical tests were determined to have $\alpha = 0.05$ level of significance. The following analyses were done:

1. Descriptive Statistics: To describe the distribution of the data, we have determined the means, standard deviations, and ranges of all the variables of fluency.
2. Independent Samples t-test (pretest): To ensure group evenness regarding pretest levels of fluency.
3. Paired Samples t-test (within-group): This test is used to determine changes between pretest and posttest within the individual groups.
4. Independent Samples t-test (posttest): To compare performance of posttests in experimental and control groups.
5. Effect size computations: Calculation of Cohen d was done to ascertain the size of the treatment effects.
6. ANCOVA: ANCOVA was performed, taking pretest scores as covariates that adjusted the initial difference in scores and gave more accurate estimates of treatment.

Results

Pretest Group Equivalence

Independent samples t-tests were used to ensure that there were no significant differences between the experimental and control groups on pretest levels of fluency and, therefore, demonstrated that the groups were equivalent before intervention. The results of the t-test and pretest descriptive statistics are discussed in table three.

Table

3

Pretest Descriptive Statistics and Group Equivalence Testing

Variable	Experimental (M $\pm$ SD)	Control (M $\pm$ SD)	t	p
Speech Rate (WPM)	82.4 $\pm$ 12.3	79.8 $\pm$ 11.7	0.87	.39
Articulation Rate (SPM)	158.2 $\pm$ 18.4	154.6 $\pm$ 17.2	0.81	.42
Pause Frequency (pm)	11.8 $\pm$ 3.2	12.4 $\pm$ 3.1	0.75	.46
Mean Length of Run (words)	3.2 $\pm$ 0.9	3.0 $\pm$ 0.8	0.93	.36
Holistic Rating (1-9)	5.2 $\pm$ 1.4	5.0 $\pm$ 1.3	0.58	.56

Note. WPM = words per minute; SPM = syllables per minute; pm = per minute.

Within-Group Comparisons

Paired samples t-tests showed that the experimental group made significant pretest to posttest improvements on all the measures of fluency. Some measures had smaller yet significant improvements, in the control group. Table four gives the within group comparisons.

Table

4

Pretest to Posttest Changes within Groups (Paired Samples t-test)

Variable	Experimental Group			Control Group		
	Pre-test M (SD)	Post-test M (SD)	T	Pre-test M (SD)	Post-test M (SD)	t
Speech Rate (WPM)	82.4 (12.3)	100.8 (14.2)	8.42***	79.8 (11.7)	84.0 (12.1)	2.18*
Articulation Rate (SPM)	158.2 (18.4)	182.6 (20.1)	7.89***	154.6 (17.2)	159.8 (18.3)	1.94
Pause Frequency (pm)	11.8 (3.2)	7.2 (2.1)	6.74***	12.4 (3.1)	11.1 (2.9)	2.01*
Mean Length of Run	3.2 (0.9)	5.1 (1.2)	7.21***	3.0 (0.8)	3.4 (0.9)	2.14*
Holistic Rating	5.2 (1.4)	6.8 (1.3)	9.12***	5.0 (1.3)	5.4 (1.2)	1.87

Note. * $p < .05$, *** $p < .001$.

The experimental group showed significant positive results, as it showed an increase in the speech rate of 18.4 WPM (22.3% increase), articulation rate increased by 24.4 SPM (15.4% increase), and reduction in the frequency of pauses by 4.6 pauses per minute (39.0% decrease). There was a 1.9 words difference (59.4% higher) in mean length of run, and 1.6 band increase in holistic ratings (30.8% higher). All the improvements were significant at $p = 0.001$.

Control group experienced slight (0.4 WPM and 5.3%), negative (-1.3 pauses a minute and 10.5%), and positive (0.4 word and 13.3%), changes in the speech rates, pauses frequency and length of the run. Such improvements were statistically significant in certain measures, but much less significant compared to those obtained in the experimental group.

Between-Group Comparisons

The t-tests between groups of independent samples when applied to the scores in posttest showed statistically significant differences in all of the fluency measures favoring the experimental group. The results of comparison between the groups are presented in Table five.

Table

5

Posttest Between-Group Comparisons (Independent Samples t-test)

Variable	Experimental (M $\pm$ SD)	Control (M $\pm$ SD)	T	p	Cohen's d
Speech Rate (WPM)	100.8 $\pm$ 14.2	84.0 $\pm$ 12.1	4.72	<.001	1.28
Articulation Rate (SPM)	182.6 $\pm$ 20.1	159.8 $\pm$ 18.3	4.56	<.001	1.19

Pause Frequency (pm)	7.2 ± 2.1	11.1 ± 2.9	5.91	<.001	1.52
Mean Length of Run	5.1 ± 1.2	3.4 ± 0.9	6.24	<.001	1.63
Holistic Rating	6.8 ± 1.3	5.4 ± 1.2	4.38	<.001	1.12

Note: All post-test differences significant at $p < 0.001$.

The highest effect sizes were found on mean length of run ($d = 1.63$), frequency of pause ($d = 1.52$) and speech rate ($d = 1.28$), meaning that treatment effect was large based on traditional standards (Cohen, 1988). None of the effect sizes was less than 1.0 meaning that all of them had a strong practical importance as opposed to statistical significance.

Analysis of Covariance

ANCOVA was used with posttest scores dependent variables, group independent variable and pretest scores as covariates to estimate the treatment effect more precisely controlling the initial fluency levels. The outcomes of the ANCOVA test proved the significant impact of the fluency-oriented strategies on all dependent variables, controlling the pretest performance, see Table six.

Table

6

ANCOVA Results: Treatment Effect on Posttest Fluency Measures

Variable	F	P	η^2
Speech Rate (WPM)	22.43	<0.001	.28
Articulation Rate (SPM)	19.87	<0.001	.25
Pause Frequency (pm)	34.92	<0.001	.38
Mean Length of Run	39.16	<0.001	.41
Holistic Rating	19.14	<0.001	.25

Note. All analyses controlled for respective pretest scores.

The outcomes of the ANCOVA showed a significant level of effect sizes (η^2 of between 25 and 41) indicating that fluency-orientated strategies could be used to describe 25- 41 percent of the variation in the posttest fluency scores given the performance level at the pretest.

Discussion

Interpretation of Findings

The results of the current research have great empirical evidence about the effectiveness of fluency-oriented approach in enhancing academic speaking skills among EFL undergraduates in Iraq. As was established by the experimental group subject to 4/3/2 technique, shadowing and timed speaking activity, more improved improvements in all the measures of fluency were observed as compared to the other control group which underwent traditional instruction.

The significant speech rate improvement (18.4 WPM) in the experimental group participants is also in line with the past findings that have shown that the use of 4/3/2 technique leads to the achievement of fluency gains (De Jong & Perfetti, 2011; Arevulo and Manosa, 2021). This is especially impressive considering the fact that the given baseline of the speech rate

among the Iraqi EFL learners (around 80 WPM) places much lower than 100-120 WPM that one would require in order to communicate effectively in any academic environment. The posttest mean of 100.8 WPM of the experimental group indicates a movement toward such a threshold thus indicating meaningful pedagogies.

Slowing of the frequency of pauses (11.8 to 7.2 pauses in one minute) states that the fluency-focused strategies contributed to the pattern of continuous speech patterns in the students. This observation can be congruent with the hypothesis that practice under time constraint facilitates the automatization of the lexical retrieval and syntactic planning activities so that fewer pauses are inevitable when one is producing a speech (Skehan, 2009). The 39 percent difference in the number of pause is a statistically significant clinical change in breakdown fluency.

The fact that the mean length of run increased (3.2 to 5.1 words) is an indication that the students were able to have more ability with maintaining speech between stops which implies that they were more effective in linguistic processing. It is a direct indication of the automatization of language production since the duration of uninterrupted speech production increases in the time of reduced dependence on conscious processes of planning production (Segalowitz, 2010).

The high effect sizes (Cohen $d = 1.12-1.63$) noted on this study point not to its statistical significance but to its meaningfulness (high practical implications). These results clarify that the absolute effect sizes are highly significant, in comparison to the medium effect size (0.5) which is taken as significant in the context of conducting educational intervention studies and indicate that fluency-orientated strategies are potent method of enhancing speaking skills.

Theoretical Implications

The results align with the cognitive approach to the development of fluency described by Skehan (2009), as the author places great importance on automatization as one of the needs that should be achieved by practicing. The observed enhancement in the experimental group is consistent with the assumption that the specialized fluency tasks occupy less of the attentional resources, allowing greater language processing in real time, which allows the speaker to proceed with the speech production as more swiftly and continuously. The accuracy and fluency dilemma, which Skehan has pointed to as one of the developmental issues, can be seen to have effectively been addressed by the selective design of activities fluency-based that retain information but foster quicker pace.

It also confirms the Nation (2007) Four Strands Framework suggestion that fluency development instruction should be dedicated to achieve balanced language acquisition. The 22.3% increase in the rate of speech of the participants in the experimental group proves that when instructional time is allocated directly to the fluency processes, but mind is not supposed to produce fluency as a byproduct, but rather as a tariff effect of other instructive processes, there are knowledgeable gains.

Iraqi EFL Education: Contextual Provisions

The results are of special importance to EFL teaching in Iraq, where in the past, speaking fluency has been disregarded in favor of grammatical correctness. The dramatic characteristics of the gains made with the help of fluency-centered approaches indicate that the chronic fluency gaps that could be found among Iraqi students registered at universities (Al-Mashhadani, 2018; Hameed and Atrah, 2016) are more attributable to the failure to use the right instructional methods than to the intrinsic limitations in individual students.

Fluency training can also be used to manage the high levels of speaking anxiety experienced by Iraqi EFL learners (Al-Jarf, 2020). This will lead to a positive circle of improvement as

the students will feel less anxious because of the success achieved during timed speech tasks and notice their progress improving, which further influences the achievement of fluency. The study that needs to be researched in the future must examine the connection between training fluency and anxiety in the Iraqi context.

Limitations

There are a number of limitations that are to be noted. To begin with, random assignment is still not used to cause causality to be determined because occurred classes are used instead of random assignment, which might have caused the difference between groups as a result of having unmeasured variables. Second, a single-institution sample (University of Baghdad) makes the sample less generalizable to other Iraqi universities, whose population of students or setting of instruction may differ. Third, the 12-week period of the intervention is quite long but might not reflect long-term retention of the gains in fluency, a delaying posttest would help to see the durability. Fourth, although the research was done on academic speaking performance; there is need to transfer the results to spontaneous conversational fluency.

Conclusion

This research examined the usefulness of the fluency-based principles on enhancing academic speaking with the Iraqi undergraduates in the 'Listening & Speaking' course at the university. The quasi experimental results showed the significant aspects of improvement in the experimental group in all the fluency scores that are statistically significant and practically significant in speech rate, articulation rate, mean length of run and frequency of pause and holistic ratings of fluency. It was found in the experimental group that the frequency of speech increased by 22.3 percent (as compared to 5.3 percent in the control group), the frequency of pause decreased by 39 percent, and the effect was significant (Cohen $d = 1.28-1.63$) representing a significant pedagogical contribution.

The results affirm that fluency-based techniques, that is, the 4/3/2 method, shadowing, and time-constrained speaking exercises prove to be very effective in acquisition of oral fluency by Iraqi EFL students. These findings question the longstanding accuracy-based aspects of the instruction in Iraqi EFL education and give evidence-based suggestions regarding changes to the curriculum.

Pedagogical Implications

Depending on the findings, the following recommendations are provided to Iraqi EFL teachers and curriculum developers:

1. Incorporate Fluency Activities into Listening & Speaking Courses: Designate a specific period of time (at least a quarter or one-third of the instructional time) to fluency development activities, as advised by Four Strands Framework by Nation.
2. Active the 4/3/2 Technique At Least Every Week: The 4/3/2 Technique is a highly researched strategy that should be included as a regular activity in the speaking classes and the students should be involved in progressive timing exercises at least once a week.
3. Add Shadowing on Authentic Content: Shadowing on real TED talks, academic talks and other authentic audio materials can be useful in enhancing phonological encoding and general naturalness of speech.
4. Timed Speaking Activities: Timed activities are productive and cause pressure leading to more speech rate and less hesitation.

5. Offer Positive Feedback on Fluency Growth: Temporal measures (WPM, frequency of pauses), should be provided to students in order to monitor their fluency development so they could develop an added confidence and motivation.

Recommendations for Future Research

Subsequent studies must be conducted on:

1. The retention of intervention gains in fluency over long term,
2. The achieving of fluency skills into spontaneous conversational situations,
3. The sum total of fluency training interventions and technology-enhanced learning (via mobile apps, artificial intelligence chatbots),
4. The effect on decreased anxiety of speaking, and
5. Expansion by using larger sample in several universities in Iraq.

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