

Let's Do It Differently: Exploring the Effectiveness of 5E-Supported EFL Grammar Instruction

DOI: <https://doi.org/10.33806/ijaes.v25i1.747>

Ruba Fahmi Bataineh
Yarmouk University, Jordan
Hussein Mohammad Al-Dolat
Ministry of Education, Jordan

Received: 11.5.2024

Accepted: 27.7.2024

Early Online Publication: 29.7.2024

Abstract: The teaching of and research on grammar have long been central to language education, with an ongoing quest for more effective models for fostering student understanding and application. The 5E (viz., Engagement, Exploration, Explanation, Elaboration, and Evaluation) instructional model, recognized for its effectiveness in promoting engagement and active learning, may not only constitute an innovative approach to grammar instruction but also leverage an interactive inquiry-based environment which improves student comprehension and retention of grammatical concepts. This study examines the potential effectiveness of the 5E Model in EFL grammar instruction. The participants, 70 students in two intact tenth-grade sections from a public school in Irbid, Jordan, were randomly assigned into an experimental group (n=35), taught using the 5E Model, and a control group (n=35), taught per the guidelines of the prescribed teacher's book. A pre-/post- test targeting five grammatical structures (viz., state and dynamic verbs, second conditional, making suggestions, defining relative clauses, and non-defining relative clauses) was used. The findings showed statistically significant differences (at $\alpha= 0.05$) between the experimental and control group students' performance in both overall grammar and each of the five structures in favor of the former. The study concludes with several pedagogical implications and recommendations for further research.

Keywords: EFL, 5E Model, grammar instruction, Jordan

1. Introduction and background

Even though the foreign language teacher had traditionally been described as “unattractive grammar monger whose only pleasure in life is to point out the faults of others” (Baron 1982:226), educational practitioners have always been on the lookout for effective means to teaching language, more so grammar than any other aspect. The mastery of grammar, the system of rules (and exceptions to them) that conveys and structures meaning in language, has been an essential goal in foreign language education, as grammatical knowledge is recognized as a requisite for constructing well-formed discourse (Emery, Kierzek and Lindblom 1978) and, hence, a key component of communicative competence (Vasilopoulos 2008).

The teaching of grammar has alternated between being the crux of language instruction, an undesirable enterprise, and something in between. Explicit grammar instruction was often shunned as useless (Krashen 1993; Truscott 1996). Krashen

(1993:725), for example, claims that the effect of grammar instruction is “peripheral and fragile”, as explicit grammatical knowledge may never turn into implicit knowledge to inform comprehension and production.

However, a long tradition, starting with the Grammar-Translation Method, has established explicit grammar as the core of language education (Larsen-Freeman and Anderson 2000). Language had been reduced to its grammatical system, and memorizing its constituents, a set of prescriptive rules, had comprised learning (e.g., Broughton et al. 1994; Celce-Murcia 2001; Larsen-Freeman 2009). Several practitioners reacted against this tradition on the grounds that it did not prove efficient in communication (Howatt 1984; Brown 1994).

The advent of the Direct Method established the exclusive use of the target language in the foreign language classroom, but it was the Audiolingual Method that managed to promote structuralism in which form and distribution were given priority over meaning and function. Even though the learner was not given the rules, he/she was chain-drilled in the use of sentence patterns. However, despite its contribution, the Audiolingual Method could not stand the criticism that, among other things, its description of the grammatical system was neither complete nor adequate for providing the rules to construct infinite grammatical sentences in the foreign language.

Traditional language instruction had focused on the knowledge of grammar rules and their correct usage through repetitive mechanical practice and memorization. Grammar had traditionally been taught through the so-called three Ps- present, practice, produce (Larsen-Freeman 2009) in which formal accuracy took precedent over fluency. As such, structures were presented first for the learners to understand and internalize rules before they were given opportunities to practice activities and to independently produce their own language (Skehan 2003). However, learners were found unable to apply their explicit knowledge of the rules of grammar in communication (Long and Doughty 2009), probably because they have not been taught how rules work in discourse, a problem which may be alleviated if grammar is taught in context.

The advent of communicative language teaching has constituted a paradigm shift in which communicative competence, the learner's ability to negotiate meaning successfully, is sought (Savignon 1971; Canale 1983). However, despite a major divide between the two paradigms in terms of prioritizing form over meaning and vice versa, many scholars have noted that communication would be impossible without due attention to grammar (e.g., Savignon 2002), as grammatical competence is one of the four components of communicative competence (viz., *grammatical, sociocultural, discourse, and strategic*) crucial for communication (Canale and Swain 1980).

Explicit grammar instruction seems to be here to stay despite some empirical findings to the contrary (Doughty 1991; Fotos and Ellis 1991), as learners are believed more likely to understand and use grammar better if they study it (Mulroy 2003; Azar 2007). Richards and Renandya (2002), for example, claim that knowing how to form and use certain structures is crucial for language development in terms of comprehensibility and acceptability, as it enables learners not only to

communicate meaning but also to avoid sounding odd, prejudiced, or utterly stupid. According to Wallace (1995:3),

[t]here is little pragmatic justification for systematically teaching a grammar of a language, whether that grammar be traditional, structural, transformational, or whatever. On the other hand, it may be desirable or even necessary to use some grammatical concepts and terminology in helping students to become more effective language users.

Thus, the debate as to the merit of explicit grammar instruction has been raging ever since the introduction of the Direct Method in the late nineteenth century (Richards and Rogers 1986). As such, foreign language practitioners (viz., teachers, teacher trainers, and applied linguists) have been in constant search for methods/approaches that would catalyze teaching and learning language (Biggs and Tang 2011). However, with the advent of the post-method era (Kumaravadivelu 2002), calls have been made to abandon the search for better methods/approaches to looking for practices/strategies (Savignon 2007) which would not only catalyze language instruction but also respond to different learner's needs and styles.

More specific to the current research, calls have been made for more effective grammar instruction which caters for both *theoretical* (aka *global associative*) learners, who work best with the conceptual aspects of grammar, and *traditional* (aka *specific linear*) learners, who work best with the uses and justification of the rules of grammar (Brosnahan and Neuleib 1995). However, to incorporate both learning styles, it is imperative to seek methods which would cater for teaching not only the rules of grammar but also their use in effective communication.

Contextualized grammar instruction has been reported to catalyze learners' use of grammatical structures in communication, as they are allowed opportunities for engagement to experience how structures function in real discourse (Ellis 2003). Classroom engagement, the students' willingness to participate in classroom activities, has been reported as a requisite because learning is at its best when learners are actively involved in learning (Brosnahan and Neuleib 1995). Negative or no classroom engagement has been reported to have an adverse effect on learning (Wang, Bergin and Bergin 2014; Bond et al. 2020) whereas positive engagement has been found to promote students' eagerness to work (Fredricks et al. 2011; Ghanizadeh, Amiri and Jahedizadeh 2020).

The 5E Model of instruction, which originated in science instruction (Bybee and Landes 1990), is a five-tier inquiry-oriented tool which promotes the learner's active participation through connecting new learning to previous experiences. The 5E Model has been reported to help teachers to constructively engage students, motivate them to learn, and foster their skill development through a sequence of learning experiences which entails *engagement*, *exploration*, *explanation*, *elaboration*, and *evaluation* (Bybee 1997; Carin, Bass, and Contant 2004), as follows:

Engagement is the first stage of the model where the activities draw the learner's attention and help him/her access prior knowledge by posing questions and defining the problem.

Exploration is the process where learners are allowed time to independently explore ideas.

Explanation is the stage where learners are involved in the reflective process of discussing their exploration.

Elaboration is the stage where learners are allowed opportunities to apply new knowledge to real situations.

Evaluation is the stage in which learners receive formative and/or summative feedback on the quality of their explanation and assess their own work towards achieving learning outcomes.

Even though it originated in the sciences, the utility of the 5E Model has been empirically tested in various aspects of foreign language education. However, to the best of these researchers' knowledge, this may be the first attempt to test the utility of the 5E Model in foreign language education in Jordan.

Ulaş, Sevim, and Tan (2012) reported that using the 5E Model learning cycle had a positive effect on 56 sixth-grade Turkish pupils' achievement in grammar, as did Naguib (2019) who reported significant gains in 121 Egyptian secondary-stage students' grammar learning. Similarly, Yiğit (2011) reported a positive effect for using the 5E Model on 70 Turkish tertiary level students' performance in and motivation towards writing, as did Seçer and Yücel-Toy (2020) who reported significant gains brought about by using the 5E Model on 12 Turkish secondary-stage students' writing skill and development. AlShareef (2015) reported on the effectiveness of the 5E Model on 99 ninth-grade students' translation, critical thinking, and grammar in Saudi Arabia. Along the same lines, Saker (2015) reported on the effectiveness of a 5E-based Jigsaw strategy on 72 Palestinian tenth-grade students' grammar performance and their attitudes towards grammar, as did Jendeya (2015) who reported a positive effect of the 5E Model on 68 Palestinian EFL tenth-grade students' grammar performance and their attitudes towards English. Nauri (2018) and Hasnidar, Nurhamdah and Ismail (2019) reported that using 5E Model catalyzed 53 Indonesian students' speaking performance.

In the Jordanian EFL context, grammar is taught traditionally. However, there are endeavors, of which the present research is one, to test and enforce more innovative grammar instruction (e.g., Emjawer and Al-Jamal 2016; Al-Daoud and Bataineh 2023; Bataineh and Al-Majali 2023) to ensure more satisfactory grammar performance.

2. Problem, purpose, question and significance of the study

Through the researchers' collective experience as EFL practitioners, they have noticed that many students not only loathe grammar but also exhibit less than satisfactory grammar performance. As part of their quest for improved grammar learning, they attempt to examine the potential utility of 5E Model-based instruction in Jordanian tenth-grade students' EFL grammar performance. The current research continues in the line of previous research which examines the utility of innovative instructional practices in EFL learning in the Arab region in general (e.g., Tamimi 2017; Alahmadi 2024) and EFL learners' grammar performance (e.g., Emjawer and

Al-Jamal 2016; Bataineh and Mayyas 2017; Bataineh and Al-Majali 2023) in Jordan in particular.

The purpose of the current research is to examine the effect of using the 5E Model of instruction on Jordanian EFL tenth-grade students' grammar performance. More specifically, it seeks to answer the question, *are there any statistically significant differences (at $\alpha= 0.05$) in Jordanian EFL tenth-grade students' grammar performance which may be attributed to instructional modality (5E Model vs. conventional instruction)?*

To the best of these researchers' knowledge, this study may be one of the first studies in Jordan to examine the effect of using the 5E Model on EFL students' grammar performance. The current findings may bear significance for teachers, supervisors, curriculum designers, and teacher trainers who are always on the lookout for innovations to catalyze foreign language education.

3. Design, participants and instrument of the study

This study uses a quasi-experimental design, as 70 tenth-grade students in two intact sections of 35 students each are randomly selected out of the four tenth-grade sections in Shurahbeel bin Hasna Secondary School for Boys in Kufryouba (Jordan) in the second semester of the academic year 2021/2022. Flipping a coin, the two sections were distributed into an experimental group, taught using the 5E Model, and a control group taught per the guidelines of the prescribed teacher's book, *Action Pack 10*. Both groups were taught by the second researcher.

The grammatical structures taught were identified through content analyzing the activities of the target units in both the student's and activity books of *Action Pack 10*. The frequencies and percentages of these grammatical structures (*viz., state and dynamic verbs, second conditional, making suggestions, defining relative clauses, and non-defining relative clauses*) were calculated, found similar in the selected units, and, thus, deemed appropriate for the purposes of the research, as shown in Table 1.

Table 1. Frequencies and percentages of activities in the target units

Unit	Structure	n	%
4	State and dynamic Verbs	5	20
5	The second conditional	5	20
6	Making suggestions	6	24
7	Defining relative clauses	5	20
8	Non-defining relative clauses	4	16
Total		25	100

The participants, all 16-year-old male tenth-grade students, were subjected to a pre-/post-test¹ to assess their grammar performance before and after the treatment. The test, designed by the researchers per the outcomes and content of the course, consists of 27 items in four types of questions (*viz., choosing the correct structure, correcting errors, identifying the function of a structure, and sentence formation*) to assess the participants' performance in the five structures under study (*state and*

dynamic verbs, second conditional, making suggestions, defining relative clauses, and non-defining relative clauses).

The validity of the test was established by an expert jury of EFL practitioners whose recommendations were considered in producing the final version of the test. Similarly, the reliability of the test was established by piloting it on a group of 30 students who were excluded from the main sample used for the study. The reliability coefficient amounted to 0.82, which is deemed appropriate for the purpose of the research.

The treatment lasted eight weeks during which the two groups received instruction, one conventionally and the other through the 5E Model. The experimental group was instructed per the following procedures:

1. The teacher/first researcher reviews the structure under study by asking general questions about the participants' life to spark interest and elicit responses which use the structure.
2. The participants work in groups/pairs to use the structure under study in sentences of their own.
3. The participants exchange answers, and the teacher helps in reaching a consensus as to which answer is best.
4. The teacher presents activities (e.g., reading a short story, watching a short video) which allow the participants to explore the structure further.
5. The teacher asks the participants to write down the difference between two sentences to draw more attention to the structure under study.
6. The class share questions and reflections about the activity under the facilitation of the teacher.
7. The participants are asked to practice the form and function of the structure under study in pairs or small group dialogs, as shown in the excerpt below:

Student 1: What would you do if you visited Petra?

Student 2: If I visited Petra, I would walk down the Siq to the Treasury.

8. The class engages in various tasks to identify errors, rewrite sentences, and come up with sentences of their own.
9. The participants are asked to self-correct their answers in light of the feedback from the group activity.
10. A worksheet is distributed as homework for further practice and self-assessment.

On the other hand, the control group was taught conventionally per the guidelines of the teacher book which accompanies the prescribed textbook, *Action Pack 10*. The grammar activities in *Action Pack 10* fall into four types: *complete the sentence with the correct form of the verb, choose the correct answer, correct the grammatical error, and make sentences*. The procedures are put forth for their execution:

1. The teacher highlights the form and use of the structures under study.
2. The teacher writes sentences on the board and underlines the key structure.
3. The teacher explains and demonstrates the rule.

4. Students do the exercises in the textbook individually and then work in pairs to check their answers.
5. The teacher divides the class into small groups for a game in which each group withdraws five slips of paper from two bags to form sentences using the structures under study.
6. The students practice the structure under the watchful eye of the teacher who circulates amongst them to give assistance and feedback about their progress.
7. The students are assigned homework to further practice the structure under study.
8. The teacher marks the homework and returns the worksheets to students.

4. Findings of the study

To answer the question of the research, *are there any statistically significant differences (at $\alpha= 0.05$) in Jordanian EFL tenth-grade students' grammar performance which may be attributed to instructional modality (5E Model vs. conventional instruction)?*, the Statistical Package for the Social Sciences (SPSS) was used. The means and standard deviations of the experimental and control group participants' grammar performance in the five structures and overall grammar were calculated, as shown in Table 2.

Table 2. Means and standard deviations of the five grammatical structures on the pre/post-test across groups

Structure	Group	Pre-test		Post-test	
		Mean*	SD	Mean*	SD
State and dynamic verbs	Control	1.80	1.08	2.51	1.42
	Experimental	1.54	1.15	3.69	1.28
	Total	1.67	1.11	3.10	1.47
The second conditional	Control	2.86	2.60	8.31	2.71
	Experimental	2.43	2.44	12.06	1.57
	Total	2.64	2.51	10.19	2.89
Making suggestions	Control	4.31	2.61	6.23	2.93
	Experimental	5.06	2.68	9.06	2.93
	Total	4.69	2.65	7.64	3.24
Defining relative clauses	Control	1.77	1.26	1.97	1.01
	Experimental	2.40	1.33	3.51	.89
	Total	2.09	1.33	2.74	1.22
Non- defining relative clauses	Control	1.37	1.29	2.26	1.63
	Experimental	1.17	1.12	3.94	1.26
	Total	1.27	1.20	3.10	1.68
Overall	Control	12.11	6.93	21.29	6.34
	Experimental	12.60	7.12	32.26	6.32
	Total	12.36	6.98	26.77	8.37

*Maximum scores are 40 for overall performance and 5, 14, 12, 4, and 5 for state and dynamic verbs, second conditional, making suggestions, defining clauses, and non-defining clauses, respectively.

Table 2 shows that the mean scores of the experimental groups' grammar performance are higher than those of the control group in the five grammatical structures and overall. There are observed differences between the two groups' post-test performance in the five grammatical structures and overall, in favor of the experimental group. To determine if these differences are statistically significant scores after controlling the effect of overall pre-test scores, one-way Analysis of Covariance (ANCOVA) was used, as shown in Table 3.

Table 3. One-way ANCOVA of the effect of instructional modality on post-test scores (after controlling the effect of the pre-test)

Source	Type III Sum of Squares	Df	Mean Square	f	Sig.	η_p^2
Pre-test	236.27	1	236.27	6.37	0.01	0.09
Instructional Modality	2054.79	1	2054.79	55.39	0.00	0.45
Error	2485.56	67	37.10			
Total	54998.00	70				
Corrected Total	4828.34	69				

Table 3 reveals that the mean score of the experimental group in overall grammar performance is significantly higher than that of the control group. The partial eta squared value of 0.45 suggests that instructional modality explains 45% of the variance in overall grammar performance. Additionally, adjusted and unadjusted means of the experimental and control group participants' overall grammar performance were calculated. Table 4 below shows the means, standard errors, and standard deviations of the experimental and control groups overall grammar performance before and after controlling the pre-test scores.

Table 4. Unadjusted and adjusted group means of overall grammar performance across groups (pre-test scores as a covariate)

Group	Unadjusted Means		Adjusted Means	
	Mean	SE	Mean	SD
Control	21.29	6.34	21.35	1.03
Experimental	32.26	6.32	32.19	1.03

Table 4 shows differences between the experimental and control groups in overall grammar performance after the differences in the overall pre-test scores were controlled, which means that using the 5E Model improved students' overall grammar performance.

To further examine the effect of the instructional modality on the linear combination of the five grammatical structures (*viz.*, *state and dynamic verbs*, *second conditional*, *making suggestions*, *defining relative clauses*, and *non-defining relative clauses*) after controlling the effect of pre-test scores, One-Way

Multivariate Analysis of Covariance (MANCOVA) using Hotelling's Trace test was conducted. The results revealed a significantly large main effect for instructional modality (Hotelling's Trace test = 1.003, $F(5, 59) = 11.841$, $p < .01$, Multivariate eta square = 0.501).

These results suggest that the linear composite of the five grammatical structures differs across the experimental and control groups. The partial eta square value of 0.50 reveals that 50% of the variance in the composite of the five grammatical structures may be attributed to the type of instruction. To determine the detailed differences in the five grammatical structures in the two groups (after controlling the effect of pre-test), a follow up Univariate Analysis (Tests of Between-Subjects Effects) was conducted, as shown in Table 5.

Table 5. Follow-up univariate analysis of the five grammatical structures (after controlling the effect of the pre-test)

Source	Structure	Sum of Squares	df	Mean Square	f	Sig	η_p^2
Instructional Modality	State and dynamic verbs	13.39	1	13.39	7.13	0.01	0.102
	Second conditional	213.57	1	213.57	42.82	0.00	0.41
	Making suggestions	67.44	1	67.44	8.64	0.01	0.12
	Defining relative clauses	24.45	1	24.45	27.46	0.00	0.30
	Non-defining relative clauses	36.80	1	36.80	21.96	0.00	0.26
Error	State and dynamic verbs	118.31	63	1.88			
	Second conditional	314.26	63	4.99			
	Making suggestions	492.02	63	7.81			
	Defining relative clauses	56.10	63	0.89			
	Non-defining relative clauses	105.54	63	1.68			
Corrected Total	State and dynamic verbs	148.30	69				
	Second conditional	577.59	69				
	Making suggestions	724.07	69				
	Defining relative clauses	103.37	69				
	Non-defining relative clauses	194.30	69				

Table 5 shows statistically significant differences in the performance of the experimental and control groups on the five grammatical structures (*viz.*, *state and dynamic verbs*, *second conditional*, *making suggestions*, *defining relative clauses*, and *non-defining relative clauses*), which suggests that 5E-based instruction potentially improves grammar performance. The partial eta squared values were 0.10, 0.41, 0.12, 0.30, and 0.26, respectively, which means that instructional

modality explains 10%, 40.5%, 12%, 30%, and 26% of the variance in *state and dynamic verbs*, *second conditional*, *making suggestions*, *defining relative clauses*, and *non-defining relative clauses*, respectively, with the highest effect size in the second conditional. The adjusted and unadjusted means of the five grammatical structures were also calculated for both the experimental and control groups, as shown in Table 6 below.

Table 6. Unadjusted and adjusted means of the five grammatical structures across groups (pre-test scores as a covariate)

Structure	Group	Unadjusted Means		Adjusted Means	
		Mean	SD	Mean	SE
State and dynamic verbs	Control	2.51	1.42	2.62	0.24
	Experimental	3.69	1.28	3.58	0.24
Second conditional	Control	8.31	2.71	8.26	0.40
	Experimental	12.06	1.57	12.12	0.40
Making suggestions	Control	6.23	2.93	6.56	0.50
	Experimental	9.06	2.93	8.73	0.50
Defining relative clauses	Control	1.97	1.01	2.09	0.17
	Experimental	3.51	0.89	3.40	0.17
Non-defining relative clauses	Control	2.26	1.63	2.30	0.23
	Experimental	3.94	1.26	3.90	0.23

Table 6 shows differences between the experimental and control groups in the five structures after the differences in the pre-test scores were controlled, which suggests that the 5E-based instruction has potentially improved students' performance in the five grammatical structures.

5. Discussion of the findings

The results elicited from the tabulated data showed that there were statistically significant differences at ($\alpha = 0.05$) between the scores of the experimental and control groups on the grammar post-test which may be attributed to the instructional modality. The experimental group participants outperformed those in the control group in overall grammar and in the five grammatical structures under study.

Many factors may have contributed to the superior performance of the experimental group. The meticulous design and implementation of the 16-lesson treatment, which comprised different activities, may have encouraged the participants to engage in and take responsibility for their learning of the target structures. The interactivity of the 5E strategy may have also contributed to the participants' engagement, as they interacted with both the teacher and other participants and collaborated for more effective learning.

The novelty of the 5Es may have also catalyzed the participants' learning as they worked with drive and enthusiasm towards learning the otherwise monotonous grammatical structures. The researchers have observed the participants overcome their reluctance to participate in activities, which was a catalyst not only for their

learning but also for their confidence and willingness to actively engage in learning grammar.

The current findings seem to corroborate those of previous empirical research on the effectiveness of the 5E Model in instruction in general and grammar instruction in particular to EFL learners from different languages. Learners, across disciplines, were found to benefit from 5E-based instruction in achievement, skill development, and positive engagement in learning.

6. Conclusions, pedagogical implications and recommendations

The current findings are consistent with those of previous research. The effectiveness of the 5E Model, with its five-phase learning cycle of *Engage, Explore, Explain, Elaborate, and Evaluate*, has been corroborated by various researchers over the past decade. AlShareef (2015), Jendeya (2015), Naguib (2019), Saker (2015), among others, have reported that the 5E Model potentially catalyzes grammar instruction. The validation of the 5E Model across these studies underscores its effectiveness in grammar instruction, as it supports a more dynamic, student-centered approach to learning unlike the passive reception associated with traditional grammar teaching instruction.

In their never-ending quest for instructional alternatives, which would help learners better grasp and apply knowledge, teachers seek to involve students, motivate them to learn, and prepare them for independent learning and skill development. Inquiry-based approaches, of which the 5E Model is one, not only feed on active, participatory learning but also empower learners to gain knowledge and skills through active participation. The regimented steps of the 5E Model (*viz.*, engage, explore, explain, elaborate, and evaluate) have catalyzed active collaborative learning, as learners worked together to construct knowledge through questioning, observing, analyzing, and drawing conclusions.

The literature abounds on the utility of the 5E Model in the learning and retention of scientific concepts. However, relatively little research has been conducted to examine its utility in language education and even less in grammar instruction, which may strengthen the contribution of the current research.

The findings have given rise to several pedagogical implications, as the tentative superiority of the 5E Model over conventional EFL grammar instruction was established in the current research. This superiority may have been brought about by the provision of a conducive learning environment which enabled the participants to engage and take charge of their learning and of opportunities for interaction, collaboration, and reflection which, in turn, reflected in improved grammar performance.

The findings have also brought about several recommendations for EFL practitioners, as teachers are recommended to use inquiry-based instruction in general and the 5E Model in particular not only to improve grammar instruction but also to empower students to take charge of their learning and overcome the challenges involved in conventional teacher-centered pedagogies. EFL supervisors are strongly recommended to raise teachers' awareness of the utility of learner-centered pedagogies, of which the 5E Model is one, in language education. The

Ministry of Education is also recommended to hold inquiry-based in-service teacher training to engage learners and encourage active language learning. Further research is also recommended on various language aspects to corroborate the current findings and grow the body of research on the utility of the 5E Model in language education.

Potential limitations

The generalizability of the findings may be limited due to several factors: The treatment lasted for only eight weeks whereas a longer duration may have affected the findings. The second researcher taught both the experimental and control groups, which may suggest potential bias. Nonetheless, this limitation was offset by the teacher/second researcher's religious adherence to the guidelines of both the instructional treatment and the Teacher's Book. The current study addresses the effectiveness of the 5E-model in grammar instruction targeting only five grammatical structures. More structures need be targeted before claims of generalizability are made.

Ruba Fahmi Bataineh, PhD (Corresponding Author)

Professor of TESOL

Yarmouk University

Irbid, Jordan

ORCID ID: <https://orcid.org/0000-0002-5454-2206>

e-mail: rubab@yu.edu.jo

Hussein Mohammad Al-Dolat, PhD

Teacher of English

Ministry of Education

Irbid, Jordan

ORCID ID: <https://orcid.org/0009-0003-0404-0958>

e-mail: husseindollat@yahoo.com

References

- Alahmadi, Nesreen Saud.** (2024). 'Examining the impact of a digital reading progress tool on Saudi L2 learners' reading aloud performance and proficiency'. *International Journal of Arabic-English Studies (IJAES)*, 24(2): 205-230. <https://doi.org/10.33806/ijaes.v24i2.661>.
- Al-Daoud, Dima M. and Ruba Fahmi Bataineh.** (2023). 'Language as a medium of grammar instruction: Jordanian EFL secondary-stage teachers' beliefs and practices'. *Lublin Studies in Modern Languages and Literature*, 47(3): 81-91. <https://doi.10.17951/lsmll.2023.47.3.81-91>.
- AlShareef, Fahad M.** (2015). 'The effectiveness of using constructive learning strategies in teaching English language on developing the achievement of grammar, translation, and critical thinking skills for the third-grade intermediate students'. *Sino-US English Teaching*, 12(9): 701-720.

- Azar, Betty.** (2007). 'Grammar-based teaching: A practitioner's perspective'. *TESL-EJ*, 11(2): 1-12.
- Baron, Dennis E.** (1982). *Grammar and Good Taste: Reforming the American Language*. New Haven (New Jersey): Yale University Press.
- Bataineh, Ruba F. and Hiba A. Al-Majali.** (2023). 'Do mind maps really catalyze EFL grammar learning? Conjunction as a case'. *International Journal of Language Education*, 7(4): 633-645.
<https://doi.org/10.26858/ijole.v7i4.36393>.
- Bataineh, Ruba F. and Mais B. Mayyas.** (2017). 'The utility of blended learning in EFL reading and grammar: A case for Moodle'. *Teaching English with Technology*, 17(3): 35-49.
- Biggs, John Burville and Catherine So-kum Tang.** (2011). *Teaching for Quality Learning at University*. Maidenhead (UK): Open University Press.
- Bond, Melissa, Katja Buntins, Svenja Bedenlier, Olaf Zawacki-Richter and Michael Kerres.** (2020). 'Mapping research in student engagement and educational technology in higher education: A systematic evidence map'. *International Journal of Educational Technology in Higher Education*, 17(1): 2-14. <https://doi.org/10.1186/s41239-019-0176-8>.
- Brosnahan, Irene and Janice Neuleib.** (1995). 'Teaching grammar affectively: Learning to like grammar'. In Susan M. Hunter and Ray Wallace (eds.), *The Place of Grammar in Writing Instruction: Past, Present, Future*, (pp. 204-212). New Hampshire: Cook Publishers.
- Broughton, Geoffrey, Christopher Brumfit, Roger Flavell, Peter Hill and Anita Pincas.** (1994). *Teaching English as a Foreign Language*. London: Routledge.
- Brown, H. Douglas.** (1994). *Teaching by Principles: An Interactive Approach to Language Pedagogy*. Englewood Cliffs (New Jersey): Prentice Hall Regents.
- Bybee, Rodger W. and Nancy M. Landes.** (1990). 'Science for life and living: An elementary school science program from Biological Sciences Improvement Study (BSCS)'. *The American Biology Teacher*, 52(2): 92-98.
- Bybee, Rodger.** (1997). *Achieving Scientific Literacy: From Purposes to Practices*. Westport (Connecticut): Heinemann.
- Canale, Michael and Merrill Swain.** (1980). 'Theoretical bases of communicative approaches to second language teaching and testing'. *Applied Linguistics*, 1(1): 8-24. <http://dx.doi.org/10.1093/applin /1.1.1>.
- Canale, Michael.** (1983). 'From communicative competence to communicative language pedagogy'. In Jack C. Richards and Richard W. Schmidt (eds.), *Language and Communication*, 2-14. London: Longman.
- Carin, Arthur A., Joel E. Bass and Terry L. Contant.** (2004). *Methods for Teaching Science as Inquiry*. Upper Saddle River (New Jersey): Pearson Prentice Hall.
- Celce-Murcia, Mariane.** (2001). 'Language teaching approaches: An overview'. In Mariane Celce-Murcia (ed.), *Teaching English as a Second or Foreign Language*, 3-11. Boston: Heinle and Heinle.

- Doughty, Catherine.** (1991). 'Second language instruction does make a difference'. *Studies in Second Language Acquisition*, 13(4), 431-469. <https://doi.org/10.1017/S0272263100010287>.
- Ellis, Rod.** (2003). *Second Language Acquisition*. Oxford: Oxford University Press.
- Emery, Donald W., John M. Kierzek and Peter Lindblom.** (1978). *English Fundamentals*. New York: Macmillan.
- Emjower, Sumaya and Dina Al-Jamal.** (2016). 'An imaginative approach to teaching grammar'. *Journal of Educational Sciences*, 28(1): 183-202.
- Fotos, Sandra and Rod Ellis.** (1991). 'Communicating about grammar: A task-based approach'. *TESOL Quarterly*, 25(4): 605-628.
- Fredricks, Jennifer, Wendy H. McColskey, Jane E. Meli, Joy Mordica, Bianca Montrosse and Kathleen A. Mooney.** (2011). 'Measuring student engagement in upper elementary through high school: A description of 21 instruments'. *Regional Education Laboratory (REL 2011)*, 98. <https://files.eric.ed.gov/fulltext/ED514996.pdf>. (Retrieved on 2 July 2024).
- Ghanizadeh, Afsaneh, Azin Amiri and Safoura Jahedizadeh.** (2020). 'Towards humanizing language teaching: Error treatment and EFL learners' cognitive, behavioral, emotional engagement, motivation, and language achievement'. *Iranian Journal of Language Teaching Research*, 8(1): 129–149. <https://doi.org/10.30466/IJLTR.2020.120811>.
- Hasnidar, Hasnidar, Nurhamdah Nurhamdah and Ismail Ismail.** (2019). 'Improving the students' speaking skills through 5e learning cycle model at the tenth-grade students of SMA NEGERI 3 PINRANG'. *Inspiring: English Education Journal*, 2(2): 135-139. <https://doi.org/10.35905/inspiring.v2i2.1271>.
- Howatt, Anthony P.** (1984). *A History of English Language Teaching*. Oxford: Oxford University Press.
- Jendeya, Mohammed H.** (2015). The impact of 5E Model on developing tenth graders' English grammar learning and their attitudes towards English. Unpublished MA Thesis. Islamic University, Gaza, Palestine. <https://mobt3ath.com/uplode/books/book-31381.pdf> (Retrieved on 5 August 2022).
- Krashen, Stephen D.** (1993). 'The effect of formal grammar study: Still peripheral'. *TESOL Quarterly*, 27(4): 722-725. <https://doi.org/10.2307/3587405>.
- Kumaravivelu, B.** (2002). *Beyond Methods: Macrostrategies for Language Teaching*. New Haven (New Jersey): Yale University Press.
- Larsen-Freeman, Diane and Marti Anderson.** (2000). *Techniques and Principles in Language Teaching*. Oxford: Oxford University Press.
- Larsen-Freeman, Diane.** (2009). 'Teaching and testing grammar'. In Michael H. Long and Catherine J. Doughty (eds.), *The Handbook of Language Teaching*, 518-542. Malde (Massachusetts): Wiley Blackwell.
- Long, Michael H. and Catherine J. Doughty.** (2009). *The Handbook of Language Teaching*. Malde (Massachusetts): Wiley Blackwell.

- Mulroy, David D.** (2003). *The War against Grammar*. Portsmouth (New Hampshire): Boynton/Cook Publishers.
- Naguib, Sara M.** (2019). 'Using the 5 E's instructional model to enhance English grammar learning of secondary stage students'. *Journal of Studies in Curriculum and Teaching Methods*, 244: 115-152.
<https://doi.org/10.21608/mjat.2019.102110>.
- Nauri, Nanda.** (2018). The effect of applying 5E Model by using talking ladder as the media towards students' speaking achievement at the eleventh grade of MAS YASPI Labuhan Deli at Academic 2017/2018. Unpublished SPd Thesis. University of Muhammadiyah Sumatera Utara Medan, Indonesia.
<http://repository.umsu.ac.id/handle/123456789/3829>. (Retrieved on 2 July 2024).
- Richards, Jack C. and Theodore S. Rodgers.** (1986). *Approaches and Methods in Language Teaching*. Cambridge: Cambridge University Press.
- Richards, Jack C. and Willy A. Renandya.** (2002). *Methodology in Language Teaching: An Anthology of Current Practice*. Cambridge: Cambridge University Press.
- Saker, Samir M.** (2015). The effectiveness of using jigsaw strategy on Palestinian tenth graders' English grammar learning. Unpublished MA Thesis. Islamic University, Gaza, Palestine.
- Savignon, Sandra J.** (1971). A study of the effect of training in communicative skills as part of a beginning college French course on student attitude and achievement in linguistic and communicative competence. Unpublished PhD Dissertation. University of Illinois, Urbana-Champaign, U.S.A.
- Savignon, Sandra J.** (2002). 'Communicative language teaching: Linguistic theory and classroom practice'. In Sandra J. Savignon (ed.), *Interpreting Communicative Language Teaching: Contexts and Concerns in Teacher Education*, 1-27. New Haven (Connecticut): Yale University Press.
- Savignon, Sandra J.** (2007). 'Beyond communicative language teaching: What's ahead?'. *Journal of Pragmatics*, 39(1): 207-220.
<https://doi.org/10.1016/j.pragma.2006.09.004>.
- Seçer, Şule Y.E. and Banu Yücel-Toy.** (2020). 'Impact of writing course design based on 5E learning model on writing skill instruction and development'. *International Online Journal of Education and Teaching*, 7(3): 760-783.
- Skehan, Peter.** (2003). *A Cognitive Approach to Language Learning*. Oxford: Oxford University Press.
- Tamimi, Mohammed H.** (2017). 'Integrating Web 2.0 technologies in learning: Using Facebook group and BYKI in English language courses'. *International Journal of Arabic-English Studies (IJAES)*, 17(1): 85-108. <https://doi.org/10.33806/ijaes2000.17.1.5>.
- Truscott, John.** (1996). 'The case against grammar correction in L2 writing classes'. *Language Learning*, 46(2): 327-369.
- Ulaş, A. Halim, Oğuzhan Sevim and Esengül Tan.** (2012). 'The effect of worksheets based upon 5E learning cycle model on student success in

teaching of adjectives as grammatical components'. *Procedia-Social and Behavioral Sciences*, 31, 391-398.

- Vasilopoulos, Gene.** (2008). 'Adapting communicative language instruction in Korean universities'. *The Internet TESL Journal*, xiv(8): 16-29. <http://iteslj.org/Techniques/Vasilopoulos-CLT.html> (Retrieved on 9 August 2022).
- Wallace, Ray.** (1995). 'Reexamining the place of writing in writing instruction'. In Susan M. Hunter and Ray Wallace (eds.), *The Place of Grammar in Writing Instruction: Past, Present, Future*, 1-7. New Hampshire: Cook Publishers.
- Wang, Ze, Christi A. Bergin and David A. Bergin.** (2014). 'Measuring engagement in fourth to twelfth-grade classrooms: The classroom engagement inventory'. *School Psychology Quarterly*, 29(4): 517-535.
- Yiğit, Cazibe.** (2011). The effect of the 5E Model in writing on achievement and motivation. Unpublished MA Thesis. Trakya University, Edirne, Turkey. <https://core.ac.uk/download/pdf/50609912.pdf> (Retrieved on 5 August 2022).

ⁱ A copy of the test is available upon request from the corresponding author at rubab@yu.edu.jo