

The deductive and inductive instructional approach controversy in Eswatini context

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Abstract

This study compared deductive and inductive approaches of teaching tenses to secondary school learners. The aim of this study was to test the efficiency of the two instructional approaches of teaching tenses by observing learners' performance. Sixty participants (37 female and 23 male), learning English in the Kingdom of Eswatini, participated in this quasi-experimental study. Convenience sampling was used to select participants who were randomly assigned to two control groups. The independent variable was 'teaching method,' with two levels: deductive versus inductive. The dependent variables were participants' achievement scores derived from the pre-test and post-test. The independent *t*-test and the dependent *t*-test were used to analyse data. The results revealed that there was no significant difference between the deductive and inductive approaches in teaching tenses, although each method was effective in isolation. Based on the findings, this study recommends an integration of the two approaches in the teaching of tenses.

Keywords: ESL context, deductive approach, grammar, inductive approach, tenses.

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1. Introduction

Teaching of tenses is very crucial in second language acquisition. Without sufficient knowledge of tenses, no one can become a good English language learner or speaker (Babu & Kumar, 2017). Therefore, learners need to master tenses if they have to achieve linguistic and communicative competence. Research in this area has revealed that although tenses occupy a major part in language teaching, many learners in English as Second Language (ESL) contexts continue making mistakes even when they are at higher levels of education (Rahman & Ali, 2015). Widodo (2006) posits that two basic teaching approaches can be applied to solve this problem: the deductive and the inductive approaches. Therefore, this study compared the deductive and inductive instructional approaches to the teaching of tenses to secondary school learners in Eswatini. The aim was to investigate the impact of each approach.

1.1. Deductive–inductive dichotomy

Deductive–inductive dichotomy is one of the most controversial topics in language teaching and learning (Benitez-Correa, Gonzalez-Torres, Ochoa-Cueva & Vargas-Saritama, 2019). According to Glaser (2013), the point of departure in deductive and inductive approaches is the sequencing of instructions. That is, the question of what comes first between the rules (grammar) and the language (usage). In a deductive approach, the grammatical rules are given right at the beginning of a lesson, before the examples for practice and production. Conversely, exercises to test whether learners can infer the target rules are the starting point in the inductive approach. Therefore, the controversy centres on the efficacy of the two instructional approaches.

1.2. English in Eswatini

English is a second language in Eswatini (Mthethwa, 2014). It is one of two official languages, alongside siSwati. English is also the official language for teaching and learning, starting from the 4th grade (Ministry of Education and Training, 2011). In addition, a 'C' or higher grade in English is a prerequisite for entry into the local university and other institutions of higher learning. However, the Swaziland General Certificate of Secondary Education (SGCSE) English examination proves challenging to most candidates as they fail to obtain credit passes (Examinations Council of Swaziland, 2017).

1.3. Statement of the problem

In Eswatini, learners have a challenge using tenses correctly. The Examinations Council of Swaziland (2014) report cites glaring grammatical errors, including mixing tenses, as the main cause for poor performance among candidates. The SGCSE English Language results observed over a period of 5 years (2012–2017) indicate that the credit percentage pass ranges between 23.36% and 25.19%. These were achieved in 2013 and 2016, respectively. Conversely, the non-credit percentage ranges between 64.53% in 2017 and 68.14% in 2016. This performance ratio has remained constant despite an increase in the total number of candidates who sat for the examination each year.

1.4. Noticing hypothesis

The noticing hypothesis proposed by Schmidt (1990) informs this study. The noticing hypothesis posits that not all input is absorbed by the learner, but only that which is noticed. Therefore, noticing, which Schmidt (1990) also defines as consciousness, attention and awareness, is a prerequisite for the second language (L2) acquisition. This is because learners cannot learn the grammatical features of a language unless they notice those features (Schmidt, 1990). Noticing alone does not mean acquisition, but it is the first essential step to acquisition. The relevance of the noticing hypothesis to this study lies in the fact that while learners may have been taught tenses on numerous occasions during their

school years (exposed to input), noticing is apparently lacking, resulting in the learners making mistakes even at advanced levels of their education. In the context of this study, an effective approach to the teaching of tenses was one that would help learners notice and process linguistic forms, thus restructuring and developing their inter-language (Schmidt, 2001). If a learner, for example, is exposed to the past tense marker [ed] they may not notice the rule that the suffix ‘-ed’ has to be added to the verb to denote the simple past tense in the case of regular verbs (Olagboyega, 2013).

1.5. Significance of the study

The significance of this study lies in its ability to bridge the gap in existing literature, and in the way it informs practice. Quite a number of studies often show disparities in the use of each of these approaches. Therefore, the findings of this study will underscore the effect of each approach against the existing literature disparities. This will further enrich the existing literature related to the use of these approaches and adds a new geographical dimension by reporting findings in the context of southern Africa. Furthermore, the curriculum developers may find it helpful to develop teaching/learning materials while cognizant of the dispositions regarding these approaches. Also, teachers are likely to gain insight into the strengths of these two approaches and maximise their effectiveness. In addition, this study may conscientise learners of the need to participate in their own learning by paying attention to the input so that it becomes intake, and eventually forms part of their linguistic systems. That way, such mistakes in the use of tenses and grammar, in general, can be minimised.

1.6. Limitations of the study

This study is limited by the sample size. Usually experimental studies are more decisive with a large sample. Also, this study was conducted in one school and that could not preclude participants’ interaction during the experimental stages. Furthermore, other aspects of grammar were not explored as they were beyond the scope of this study.

2. Review of literature

Tenses and grammar are intertwined topics (Tomakin, 2014). English grammar is an umbrella term of which tenses are a subset. Therefore, facts that apply to grammar, in general, also apply to tenses directly or indirectly. There are three main tenses in English, namely the past tense, present tense and the future tense (Babu & Kumar, 2017). These authors posit that in the study of tenses it is important to learn verbs as well. Verbs give a sense of time in speech and writing. They are used to express the relationship between time and other factors so that we can tell if an action is still in progress (present), completed (past), or predicting future action or events (future). Each tense has four aspects, namely the simple, progressive, perfect and perfect progressive. The three tenses, each with four aspects, make up the twelve English verb tense–aspect combinations. According to Khairunnisah (2018), the English verb tense–aspect system is one of the difficult grammatical areas for ESL students to master. This is a problem because tenses, being part of grammar, affect all the four language skills, which are reading, listening, speaking and writing (Murcia & Freeman, 1983). It can be noted that tenses are a technical and complex topic that cannot be mastered without being attentive to the rules that govern usage.

2.1. Mistakes and errors in the use of tenses

Harmer (2007) distinguishes between two types of grammatical mistakes that students make when using tenses, namely slips and errors. When slips occur, students usually realise instantly that they have made a mistake and correct it themselves. However, errors are not immediately realised by the learners; hence, they end up in the examination scripts. Khairunnisah (2018) opines that learners

might already know the rules, but they 'slip' when applying them, or they make 'errors' because of the misconception of the grammatical knowledge. This is where the relevance of the noticing hypothesis becomes apparent. While learners may have been taking grammar lessons for years, they may still have difficulty using tenses correctly if they had not been paying attention to the rules governing verb forms and aspects of tense.

2.2. Comparison of deductive and inductive instructional approaches

Deductive and inductive approaches are in contrast to each other. A deductive approach to teaching is based on deductive reasoning and moves from general to specific (Widodo, 2006). It is a traditional, top-down approach with a PPP pattern. The acronym 'PPP' means *present, practice* and *produce* (Aslan, 2016). This implies that a deductive lesson begins with a presentation of rules by the teacher, followed by examples in which students practice the application of the rule after which the students produce their own examples at the end of a lesson (Thornbury, 1999). The inductive approach, on the other hand, is based on inductive reasoning and proceeds from specific to general. Aslan (2016) explains that the inductive approach follows a 'TTT' model, which means *test, teach* and *test*. In contrast to the deductive approach, an inductive lesson starts with examples from which a rule is deduced (Thornbury, 1999). The teacher begins by giving exercises to test if learners can figure out the target rule. Then the rule is taught and tested again. Inductive instruction is a bottom-up, cyclical approach where lessons begin and end with tests. It is worth pointing out that the deductive–inductive controversy lies in the order of learning activities, rather than debating whether or not grammatical rules should be taught. According to Ellis (2006), teaching grammar involves drawing learners' attention to specific grammatical forms in a way that helps them comprehend, produce and internalise those forms. Tenses, being part of grammar, can also be taught this way using the deductive and inductive approaches.

2.3. Research on deductive and inductive instructional approaches

Several studies have been carried out in diverse linguistic contexts to examine the effectiveness of deductive and inductive approaches to grammar teaching, but have led to different conclusions. Some studies are in favour of the deductive approach, while others favour an inductive approach. Still, there are those which show no difference between the effectiveness of the two approaches. Indeed, Benitez-Correa et al. (2019) puts forward that one of the most controversial and unanswered questions regarding effective language learning is the issue of whether grammar is taught deductively or inductively.

2.3.1. Studies supporting deductive instructional approaches

A number of experimental studies support the view that deductive grammar teaching strategies are more beneficial to learners. For instance, Negahdaripour and Amirghassemi (2016) examined the impact of inductive and deductive approaches to grammar instruction on learners' ability to speak English fluently and accurately. The results indicated that the deductive approach to the teaching of grammar was more effective in enabling language learners to make accurate use of grammatical structures in comparison to an inductive approach. In another study, Sik (2014) investigated the effectiveness of both the deductive and inductive approaches to the teaching of grammar to adult learners using the present continuous tense, the past simple tense, the future tense as well as comparative and superlative forms of adjectives. The results revealed that the deductive approach was more effective than the inductive. Arifin (2016) also conducted a study to establish the effectiveness of the two instructional approaches in the teaching of tenses to university students in Jakarta. The objective of her research was to test the hypothesis about the impact of the deductive and inductive approaches in the teaching of tenses to improve students' writing. The results of this experimental study revealed that deductive approach was more effective in promoting students' writing skill than the inductive approach. Furthermore, Wang (2012) compared the effect of deductive and inductive

approaches in teaching English verb tenses to Taiwanese university students. Her study used all the twelve verb–aspect combinations. Another variable was the students' cognitive styles, that is, independent/dependent (FI/FD). The findings revealed that the deductive approach was more effective than the inductive approach in the teaching of English verb tenses to Chinese learners. In another study, Mohammed and Jaber (2008) investigated the effectiveness of the two approaches in the teaching of the active and the passive voice among university students in Jordan. The findings showed that the deductive approach was more effective than the inductive approach. Moreover, Berendse (2012) carried out a study to investigate the effectiveness of the deductive and inductive approach in the teaching of the English simple past and present perfect tenses to Dutch secondary school learners. The results were in favour of the deductive approach, which also facilitated better long-term retention.

2.3.2. Studies supporting inductive instructional approaches

On the other hand, some experimental studies have shown that the inductive grammar teaching strategies are more beneficial to learners than the deductive. Anani (2017), for instance, found that students who were taught using the inductive approach showed better grammatical and communicative skills than those who were taught using the deductive approach. Her study used subject-verb-agreement and essay writing. She concluded that the inductive teaching approach helps students to grasp grammar rules easily. Benitez-Correa et al. (2019) conducted a study with the purpose of testing the deductive and inductive approaches in terms of effectiveness and rapport among high school learners in Ecuador. The study used various grammar items, including verbs, tenses and modals. The results showed a significant difference in favour of the inductive approach. Similarly, Kaur and Niwas (2016) compared the deductive and the inductive instructional approaches to the teaching of English grammar to elementary school students. The study used various grammar items; that is, tenses, verbs, nouns, pronouns and adjectives. The findings showed that teaching the aforementioned grammar items using the inductive approach had a significant impact on students' achievement. In his experimental study, Alzu'bi (2015) compared the effectiveness of the deductive and the inductive approach to the teaching of English grammar at primary school stage and at college. The study used tenses, subject-verb agreement, formation of yes/no and WH questions, as well as negative forms. The findings revealed that the inductive approach plays a positive role in improving the academic achievement of the students studying English grammar at both elementary and tertiary levels. Gorat and Prijambodo (2013) examined the effect of the deductive and the inductive approach to the teaching of conditional sentences. The findings indicated that the inductive approach was more effective than the deductive approach. In their experimental study, Putthasupa and Karavi (2010) investigated whether the use of the inductive approach could minimise students' grammatical errors in essay writing. The objectives of the study were to compare the effectiveness of the inductive approach against 'regular lectures' and to identify students' errors. The findings indicated that the inductive approach had a positive effect on the teaching of grammar by minimising grammatical errors. In a recent study, Obeidat and Alomari (2020) explored the effect of the deductive and inductive approaches on English as a Foreign Language (EFL) undergraduates' achievement in grammar at the Hashemite University in Jordan. To achieve its objectives, the study used a wide range of grammatical items in sentence correction. The findings showed significant differences in favour of the inductive approach.

2.3.3. Studies showing no difference between deductive and inductive approaches

While the findings of many studies favour one teaching approach over the other, some studies are not conclusive. Hejvani and Farahani (2018), for instance, compared the effect of using the deductive and inductive approaches on 7th grade students' grammar achievement and their attitudes towards EFL. The findings indicated that both approaches were equal in terms of efficiency. The scholars conclude that the distinction between the inductive and the deductive approaches is not always clear in practice. Pourmoradi and Vahdat (2016) also conducted a study to compare the deductive approach and the inductive approach to the teaching of grammar to Iranian learners. Other

variables in this study were gender and the learners' cognitive styles, namely Field Dependent / Field Independent (FD-FI). While the results were mixed regarding cognitive styles, there was no significant difference in the achievement scores between males and females taught grammar using the deductive or the inductive approach. Furthermore, Emre (2015) conducted a study on the effectiveness of the deductive and inductive approaches. In this experimental study, the main variables were grammatical accuracy and written output. To that end, the study used conditionals and relative clauses. The findings showed that there was no significant difference between the two approaches.

From these studies it can be noted that there are different conclusions regarding the efficacy of the deductive and inductive approaches to the teaching of tenses and grammar in general. Admittedly, the discrepancies in the findings can be attributed to the differences in the language aspects used as treatment. Some were using tenses (Berendse, 2012; Hejvani & Farahani, 2018; Wang, 2012) while others used general grammar knowledge (Anani, 2017; Benitez-Correa et al., 2019; Obeidat & Alomari, 2020; Pourmoradi & Vahdat, 2016; Putthasupa & Karavi, 2010). Another gap lies in the participants used. Most of the studies used adult learners at university level while only a few (Anani, 2017; Benitez-Correa et al., 2019; Berendse, 2012) used younger learners either at elementary or secondary school. In addition, the majority of the studies were conducted in the Middle East (Jordan and Iran), while a few were carried out in Turkey and Germany and only one in Ghana (Africa). The diverse linguistic contexts mean that findings of such studies are not truly generalisable to parts of the ESL contexts as there are so many variables involved.

2.4. Present study

This study sought to find out which teaching approach (deductive or inductive) would work best in the ESL context of Eswatini, where no similar studies have been found. In particular, this study examined if there was a significant difference between deductive and inductive instructional approaches to the teaching of tenses to secondary school learners.

3. Methodology

This quasi-experimental design was conducted at a southeastern secondary school in Eswatini. Following all research ethics, 60 participants were selected for the study using convenient sampling. But the assignment of treatment to each group was conducted randomly. There were 33 females and 27 males, all studying English as a Second Language. Most of the participants were between the ages of 17 and 22 years and were all citizens of Eswatini. Two Form 4 classes (Form 4A & C) participated in the study. There were two groups, both experimental groups, meaning that there was no control group. Both groups, therefore, received treatment. The inductive group was taught tenses using the inductive approach. Likewise, the deductive group was taught tenses through the deductive approach. The students' demographic information is summarised in Table 1. Table 1 shows the participant's demographic information. There were 60 participants overall; 30 for the deductive group and the other 30 for the inductive group. In the deductive group, 12 participants were male and 18 were female. Their ages ranged from 16 to 21 years, and there were 9 repeaters. In the inductive group, 11 participants were male and 19 were female. Their ages ranged from 15 to 22 years, and there were 10 repeaters.

Table 1. Students' demographic information (n = 60)

Groups	Total	Gender	Participants	Repeaters	Agerange
Deductive	30	M	12	5	16–20
		F	18	4	17–21
		M	11	6	17–22
Inductive	30	F	19	4	15–19

The participants were at the intermediate level of language proficiency and were left with 1 year at school before they could enrol in colleges and universities. As pointed out earlier, they would need a 'C' grade or better in English Language to gain entry in most tertiary institutions at Eswatini. The treatment lasted for 2 weeks.

3.1. Pre-test

For the pre-test, there were twenty-four gap-filling types of questions with four alternative answers per question. The participants completed sentences by circling correct responses from a given set of four alternatives, i.e., a, b, c and d. Each of the three main tenses (past, present and future) has four aspects: the simple aspect, the progressive aspect, the perfect aspect and the perfect progressive (see Appendix A). This sequence was used for the first twelve questions, and the cycle was repeated, resulting in a total of twenty-four questions for the test. After giving the pre-test, the participants' scripts were collected, marked and graded out of twenty-four (one mark for each correct response and a zero for a wrong one). The main objective of this exercise was to find out the participants' proficiency in tenses before treatment. Also, it helped to identify suitable participants for the study. Participants who got all answers correct in the pre-test were not included in the study as they were not considered as 'real learners'. They already had good proficiency in the use of English tenses and the effect of either treatment could not be well reflected in their achievement scores. Overall, the pre-test took about forty minutes to complete.

3.2. Treatment 1 (deductive approach)

The deductive lessons were organised in five stages, namely introduction, presentation, practice, summary and evaluation, respectively. The introduction was aimed at focusing the learners' attention on the lesson and its objectives. At the *presentation* stage, an explanation about the present tense (for example) was given, such as when to use the simple present tense and when to use the suffix [s], [es] or [ies] at the end of the main verbs (in the simple present tense, for example) and many examples of the usage of the tense being studied were given. At the third stage of skills practice, learners were given exercises to *practice* and apply what they had learnt. The summary stage was a review of the lesson. Learners were given varied activities, such as completing sentences by selecting the correct verb tense from a given list. Finally, at the assessment stage, the learners had to complete sentences by filling in the blanks with an appropriate tense, this time without the aid of the options list. In other words, they had to *produce* the correct verb forms to complete sentences.

3.3. Treatment 2 (inductive approach)

On the other hand, inductive lessons were arranged in four cyclical stages, namely introduction, test, teach and test. The introduction served the same purpose of getting the learners focused on the lesson. In each lesson, a sentence on the slide was projected and the learners had to figure out when the action took place. That is, whether the action has/had ended at a given point or is /was still in progress. In the test stage, learners were given a series of tenses charts with gap-fill exercises. They had to complete short sentences using correct verb forms and state when the action was happening; for instance, in the past, present or future. The learners also had to work in groups of three to formulate a rule governing the construction of the sentence. During the *teaching* stage, there was a class discussion about the correct answers and learners were asked to give reasons for their answers based on clues in the given exercises. The inductive approach encourages discovery learning. In this instance, they had to discover rules and how they are applied by studying examples. Therefore, at the last *test* stage, learners were given exercises for further practice based on the examples discussed at the *teach* stage.

3.4. Post-tests

The post-tests, which were similar in design to the pre-tests, were administered to both groups after 2 weeks of treatment. The purpose of the post-test was to evaluate participants' proficiency in tenses. Again, there were twenty four gap-filling types of questions with four alternative answers per question. Again, the participants chose from four alternative answers (a, b, c and d) to complete a sentence by circling the correct answer (see Appendix B). Care was taken to ensure that participants did not collaborate between the post-tests. To that end, special arrangements were made to shift lesson times so that tests were written in close succession. Again, each correct response earned one mark and a wrong response was awarded a zero.

4. Results and discussion

Since this was a purely quantitative study, data were analysed using inferential statistics, mainly independent and dependent *t*-tests. There were two variables in the study: the independent variable was the 'teaching method', which had two levels (deductive vs. inductive) and the dependent variables which were learners' achievement scores derived from the tests. The dependent variables were assigned nominal values and the scores for each participant per test were summed up. Thus, these tests yielded two sets of scores (one from the pre-test and the other from the post-test) for each participant. These scores were computed and analysed using the Statistical Package for the Social Sciences version 23. The assumptions of an independent *t*-test were observed in this study. Assumptions are data characteristics required to run the *t*-test and generate reliable results. According to Yockey (2008), these assumptions are independent observation, normal distribution and homogeneity of variance. Independence of observations requires that the data (scores) be independent of each other. In this study, the scores of each participant were not systematically related to scores of the other participants. That is to say, the two groups were independent. As stated previously, this was verified by using a pre-test in the early stages of data collection. The assumption of normality, on the other hand, requires that the data for each group be normally distributed. In other words, the data, when plotted, should result in a normal distribution. A Q-Q plot was used to test normality and the data points were close to the diagonal line, confirming a normal distribution. Finally, the Levene's test for homogeneity of variances was conducted. The test indicated that the variances were not significant ($p = 0.282$). Since this value was greater than the alpha level which was 0.05, equal variances were assumed.

4.1. Results

The purpose of the first research question was to determine if there was a significant difference between the pre-test and post-test for learners taught tenses using the deductive approach. The dependent *t*-test was carried out to find out if there was a significant difference between the pre-test and post-test for the deductive group and the results are shown in Table 2.

Table 2. A comparison of the pre-test and post-test within the deductive group ($n = 30$)

Group	Test	Mean	SD	df	<i>t</i> -value	<i>p</i> -value (2-tailed)
	Pre-test	12.03	2.918	29	-5.518	0.001
Deductive	Post-test	15.80	2.976			

Significance level: 0.05.

Table 2 shows that the mean for the deductive group in the pre-test ($M = 12.03$, $SD = 2.918$) was lower than the mean score of the post-test ($M = 15.80$, $SD = 2.976$) $t(29) = -5.518$, $p = 0.01$ (two-tailed). This test was found to be statistically significant. The findings for research question one indicated that the deductive method was effective in teaching tenses to high school learners as a majority performed better in the post-test than in the pre-test. It can be said that, although the

deductive approach has lost popularity because it is teacher-centred, it still has its place in the classroom. The effect size for this analysis ($d = -1.42$) was found to be smaller than Cohen's (1988) convention for a large effect ($d = 0.80$).

While there was a general improvement in the achievement scores after the deductive treatment, it was observed that not all participants actually benefited. This unexpected outcome is shown in Figure 1.

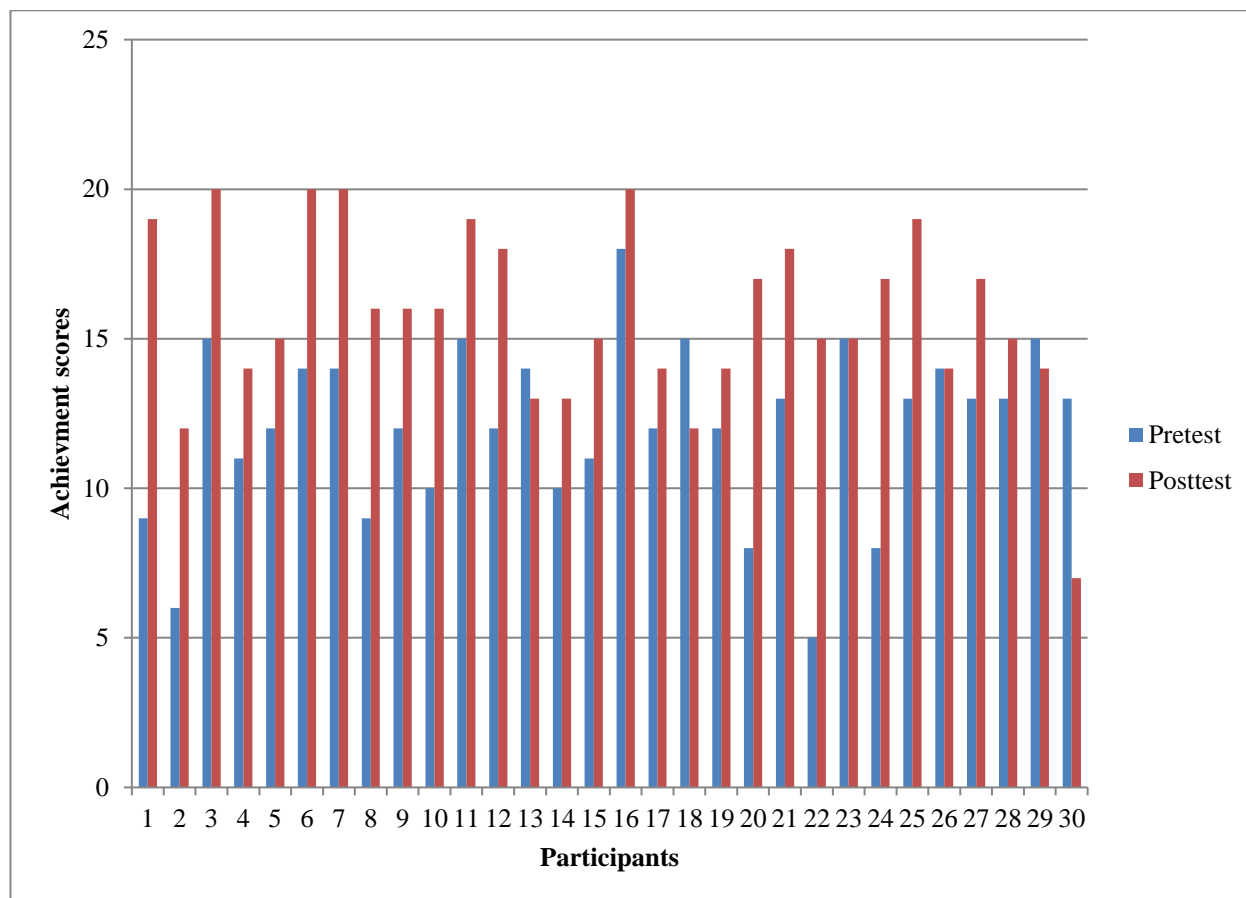


Figure 1. Deductive group performance in the pre-test and post-test From Figure 1, it can be observed that 6 participants did not perform better in the post-test. Infact, 4 regressed (13,18, 29,30), while 2 participants (23,26) scored the same as in the pre-test.

The second research question sought to ascertain if there was a significant difference between the pre-test and post-test for learners taught tenses using the inductive approach. The results are shown in Table 3.

Table 3. A comparison of the pre-test and post-test within the inductive group (n = 30)

Group	Test	Mean	SD	df	t-value	p-value (2- tailed)
Inductive	Pre-test	12.37	2.834	29	-3.834	0.001
	Post-test	16.17	3.435			

Significance level: 0.05.

Again, this test was found to be statistically significant in that the mean score of the inductive group in the pre-test ($M = 12.37$, $SD = 2.834$) was lower than the mean score for the post-test ($M = 16.17$, $SD = 3.435$) $t(29) = 5.429$, $p = 0.001$ (two-tailed). The effect size for this analysis ($d = 0.25$) was smaller

than Cohen’s (1988) convention for a large effect ($d = 0.80$). The findings for research question 2 indicated that the inductive method was also effective in teaching tenses to high school learners as they performed better in the post-test than in the pre-test.

The findings for research question 2 indicated that the inductive method was also effective in teaching tenses to high school learners as most participants performed better in the post-test than in the pre-test. However, similar to the results for research question 1, not all participants benefitted from the inductive approach. This is shown in Figure 2.

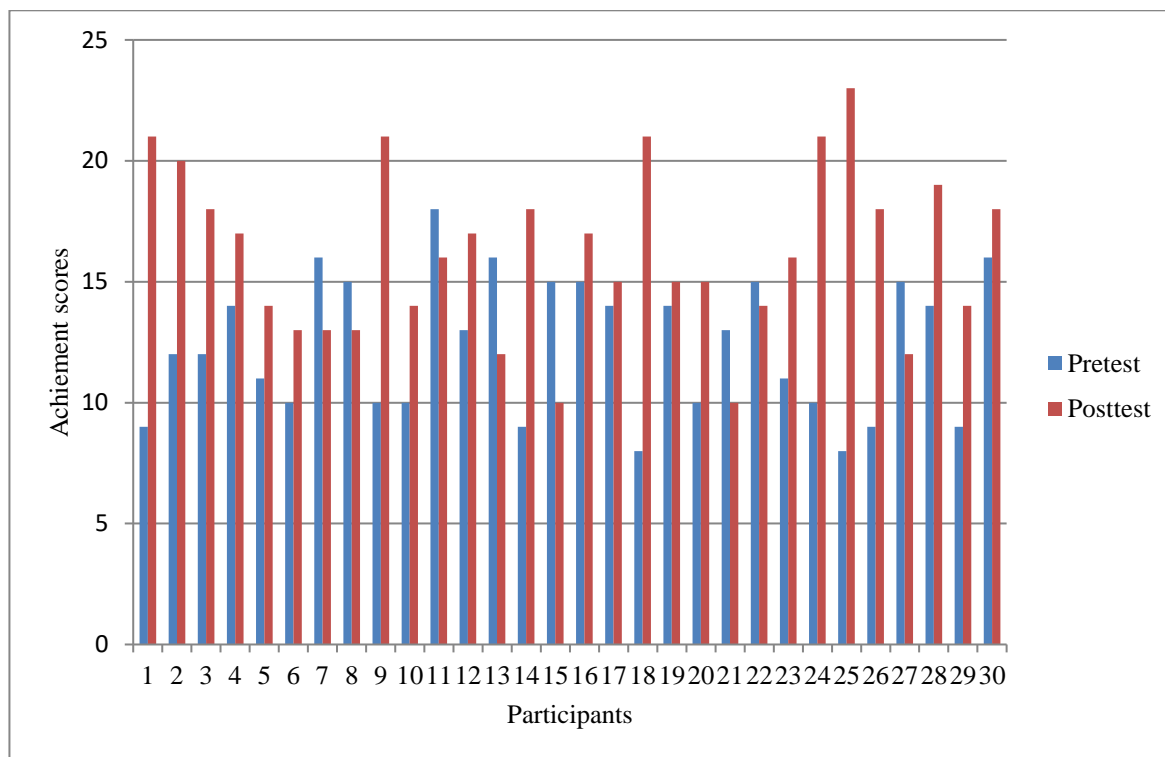


Figure 2. Inductive group performance in the pre-test and post-test

Figure 2 shows that 8 participants (7, 8, 11, 13, 15, 21, 22, 27) scored lower marks in the post-test than in the pre-test after inductive treatment. A similar scenario was also observed with the deductive group. The third research question examined whether or not there was a significant difference between the post-tests of students taught tenses using the deductive approach and those students taught using the inductive approach. For this analysis, the independent *t*-test yielded a non-significant difference between deductive ($M = 15.80, SD = 2.976$) and inductive ($M = 16.17, SD = 3.435$) $t(58) = -0.442, p = .660, p < 0.05$ (two-tailed). The effect size for this analysis ($d = 0.08$) was smaller than Cohen’s (1988) convention for a large effect ($d = 0.80$).

The findings indicated that both the deductive and inductive teaching approaches were effective in the teaching of tenses. That is, both the deductive and inductive groups performed significantly better in the post-tests than the pre-tests.

4.2. Discussion, limitations, recommendations for action and for further research

As revealed by literature on deductive and inductive instructional approaches (Arifin, 2016; Benitez-Correa et al., 2019; Hmedan & Nafi, 2016; Wang, 2012) different conclusions have always been reached regarding the effectiveness of either approach. Also, this study does not report a statistical significant difference between teaching using a deductive approach and an inductive approach, even

though a slight difference in the means was observed. The slight difference in the means indicates that almost the same level of success in teaching tenses can be achieved using either the deductive or the inductive approach. Such results are consistent with the findings of Hejvani and Farahani (2018) as well as Emre (2015), which showed that both methods helped improve learners' performance in grammar almost equally. However, the results differ from those of Negahdaripour and Amirghassemi (2016), Wang (2012), Mohammed and Jaber (2008), which supported a deductive approach. The findings of this study also in contrast with Anani (2017), Benitez-Correa et al., (2019), Obeidat and Alomari (2020), Putthasupa and Karavi (2010), who reported that the inductive approach was more effective in teaching grammar.

In this study, the majority of students in both groups performed remarkably better in the post-test, which indicated that both instructional approaches were effective in the teaching of tenses. Therefore, teachers of English can vary their strategies in the teaching of tenses by using both the deductive and the inductive approaches. The fact that some learners scored lower in the post-tests highlights that no single approach can be comprehensive or suitable for all learners. An integration of the deductive and inductive approaches, which was unfortunately beyond the scope of this study, is recommended as it would accommodate different learning styles and possibly yield much better results.

The observed results of this work might be due to a number of factors. These could be the duration of the experiment, learner characteristics, motivation and sample size. Two weeks could mean that the information was still fresh in the learners' minds and thus easy to recall. It would be interesting to observe the results over an extended period of time, for instance, a term or a year. Conducting the experiment over a long time would help address issues of short- and long-term effects of each approach. This dimension is important to establish the level of retention each approach facilitates. Therefore, the study recommends that future studies be conducted over an extended period. That is, the post-tests be administered after a long period of time rather than the 2 weeks that as employed in this study. Learner characteristics are also a crucial factor. These include (but not limited to) age, sex, educational background, previous knowledge and cognitive styles. This study focused strictly on learner achievement before and after treatment. The other variables were not considered as they were beyond the scope of the study. Therefore, future studies need to take these factors into consideration, as they are likely to have a bearing on the outcome. Also, since the pre-tests and post-tests had no bearing in the learners' end of year reports, the participants may have lacked motivation to put maximum effort. The question of the learners who regressed in the post-tests remains unexplained in this study. The same applies to the participants (1, 9, 18, 24, 25) who scored above 20 marks out of 24 in the post-test, yet none of them had scored above 10 marks in the pre-test as shown in Figure 2. There is a chance that motivation was factor. To work around this issue, the study recommends action research, where practitioners can embed such experiments into regular teaching and assessment. Since the study only involved one school, owing to time constraints, the results cannot be generalised to the whole country and other ESL contexts. Thus, it is recommended that future studies be designed to overcome such limitations.

Despite these shortcomings, the study has practical implications for teaching and learning. Teachers of English, for instance, ought to have flexible lesson plans and should be ready to switch from one instructional approach to the other as a need arises in order to meet learner needs. Since learners have different learning styles, variation of instructional approaches, even within the same lesson is encouraged. For instance, cognitive styles such as top-down and bottom-up processing need to be taken into account when planning teaching and learning activities. As per the framework that informs this study, it is recommended that the goal of teaching tenses should be to raise consciousness among learners. That is, teachers need to select an approach that best stimulates noticing of linguistic forms. That way, teaching could be more effective as input would no longer be 'lost,' but retained as intake and processed. Curriculum designers also need to consider integrating the deductive and inductive approaches in English Language textbooks. In Eswatini, for instance, the prescribed ESL textbooks for senior secondary school are based on a deductive instructional approach. Some of these textbooks even incorporate model lesson plans which follow a deductive approach, while the inductive approach

is overlooked. This shows that there is still room for improvement in the development of teaching and learning materials. As revealed by the findings of this study, deductive and inductive instructional approaches are almost equally effective. Thus, choosing one approach over the other does not reflect the best practice. Rather, an integration of the two approaches is well worth investigating.

5. Conclusion

As seen in this study, research on the effectiveness of deductive and inductive instructional approaches still yields mixed and inconclusive results. While both approaches were generally effective for the teaching of tenses to secondary school learners, they did not suit all the learners. The effectiveness of deductive and inductive approaches should not overshadow other approaches to the teaching of tenses. Students need various stimuli to help them notice different linguistic forms and patterns. Once noticed, these linguistic inputs can be processed and internalised to become part of the students' knowledge system, resulting in communicative competence.

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APPENDIX A

Pre-test

University of Eswatini

Mixed Tenses Comprehension Test (01)

Student Details

Circle the correct answer to complete each sentence.

Class:	Number:

1. "Let's go! What's taking you so long?" "I'll be there as soon as I ___ my keys."
 - a. found
 - b. will find
 - c. find
 - d. am finding
2. On July 20, 1969, Astronaut Neil Armstrong ___ down onto the moon, the first person ever to set foot on another celestial body.
 - a. was stepping
 - b. stepped
 - c. has stepped
 - d. was step
3. "Why did you buy all this sugar and chocolate?" "I ___ a delicious dessert for dinner tonight."
 - a. make
 - b. will make
 - c. am going to make
 - d. will have made
4. "Hurry up! We're waiting for you. What's taking you so long?" "I ___ for an important phone call. Go ahead and leave without me."
 - a. wait
 - b. will wait
 - c. am waiting
 - d. have waited
5. While I ___ TV last night, a mouse ran across the floor.
 - a. watch
 - b. watched
 - c. was watching
 - d. am watching
6. We ___ for a couple of days, so you won't be able to call us.
 - a. travel
 - b. will travel
 - c. will be traveling
 - d. will have traveled
7. "Robert is going to be famous someday. He ___ in three movies already." "I am sure he'll be a star."
 - a. has been appearing
 - b. had appeared
 - c. has appeared
 - d. appeared

8. Homestead High School's football team ___ a championship until last season, when the new coach led them to win first place in their league.
 - a. has never won
 - b. is never winning
 - c. had never been wining
 - d. had never won
9. I know you feel bad now, Tommy, but try to put it out of your mind. By the time you're an adult, you ___ all about it.
 - a. forget
 - b. will have forgotten
 - c. will forget
 - d. forgot
10. "When is Mr. Fields planning to retire?" "Soon, I think. He ___ here for a long time. He'll probably retire either next year or the year after that."
 - a. worked
 - b. had been working
 - c. has been working
 - d. is working
11. The plane's departure was delayed because of mechanical difficulties. When the weary passengers finally boarded the aircraft, many were annoyed and irritable because they ___ in the airport for three and a half hours.
 - a. are waiting
 - b. were waiting
 - c. have been waiting
 - d. had been waiting
12. Non-native speakers need many years of intensive language study before they can qualify as interpreters. By the end of this year, Chen ___ English for 3 years, but he will still need more training and experience before he masters the language.
 - a. will be studying
 - b. has studied
 - c. will have been studying
 - d. has been studying
13. Next week when there ___ a full moon, the ocean tides will be higher.
 - a. is being
 - b. is
 - c. will be
 - d. will have been
14. At one time, huge prehistoric reptiles dominated the earth. This Age of Dinosaurs ___ much longer than the present Age of Mammals has lasted to date.
 - a. lasted
 - b. was lasting
 - c. has lasted
 - d. had lasted
15. If coastal erosion continues to take place at the present rate, in other 50 years this beach ___ anymore.
 - a. doesn't exist
 - b. isn't going to exist
 - c. isn't existing
 - d. won't be existing

16. "Where's Polly?" "She___." [measures more than one point]
 - a. is in her room studying
 - b. studies in her room
 - c. in her room is studying
 - d. has in her room studied
17. "Hello? Alice? This is Jeff. How are you?" "Jeff? What a coincidence! I ___about you when the phone rang."
 - a. was just thinking
 - b. just thought
 - c. have just been thinking
 - d. was just thought
18. "Do you think Harry will want something to eat after he gets here?" "I hope not. It'll probably be after midnight, and we ___."
 - a. are sleeping
 - b. will be sleeping
 - c. have been sleeping
 - d. be sleeping
19. Fish were among the earliest forms of life. Fish ___ on earth for ages and ages.
 - a. existed
 - b. are existing
 - c. exist
 - d. have existed
20. The little girl started to cry. She ___ her doll, and no one was able to find it for her.
 - a. has lost
 - b. had lost
 - c. was losing
 - d. was lost
21. What? He got married again? At this rate, he _____ a dozen wives by the time he dies.
 - a. has had
 - b. had had
 - c. has
 - d. will have had
22. "Is it true that spaghetti didn't originate in Italy?" "Yes. The Chinese___spaghetti dishes for a long time before Marco Polo brought it back to Italy."
 - a. have been making
 - b. have made
 - c. had been making
 - d. make
23. The phone ___ constantly since Jack announced his candidacy for president this morning.
 - a. has been ringing
 - b. rang
 - c. had rung
 - d. had been ringing
24. Mary was born in 1975. By the year 2025, she_____ on this earth for 50 years.
 - a. will have been living
 - b. is living
 - c. lives
 - d. had lived

APPENDIX B

Post-test

University of Eswatini

Mixed Tenses Comprehension Test (02)

Student Details

Circle the correct answer to complete each sentence.

Class:	Number:
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- The earth ___ on the sun for its heat and light.
 - is depend
 - depending
 - had depend
 - depends
- Fatemach looked down to discover a snake at her feet. When she saw it, she ___.
 - was screaming
 - had screamed
 - screamed
 - screams
- “Could someone help me lift the lawnmower into the pickup truck?” “I am not busy. I ___you.”
 - help
 - will help
 - am going to help
 - am helping
- “What___about the new simplified tax law?” “It’s more confusing than the old one.”
 - are you thinking
 - do you think
 - have you thought
 - have you been thinking
- A minor earthquake occurred at 2:07 A.M. on January3. Most of the people in the village ___ at the time and didn’t even know it had occurred until the next morning.
 - slept
 - had slept
 - were sleeping
 - sleep
- “Are you going to be in town next Saturday?” “No, I___ my aunt.”
 - will be visiting
 - visit
 - am visiting
 - will have visited
- Today there are weather satellites that beam down information about the earth’s atmosphere. In the last two decades, space exploration ___great contributions to weather forecasting.
 - is making
 - has made
 - made
 - makes
- By the time Alfonso finally graduated from high school, he ___seven different schools because his parents moved frequently.
 - attended
 - was attending
 - had attended
 - had been attending

9. By the time I go to bed tonight, I ___ my work for the day.
 - a. will finish
 - b. have finished
 - c. will have finished
 - d. finish
10. Paul, could you please turn off the stove? The potatoes ___ for at least thirty minutes.
 - a. are boiling
 - b. boiling
 - c. have been boiling
 - d. were boiling
11. After ten unhappy years, Janice finally quit her job. She ___ along with her boss for a long time before she finally decided to look for a new position.
 - a. hadn't been getting
 - b. isn't getting
 - c. didn't get
 - d. hasn't been getting
12. By April, I ___ my new car for a year.
 - a. have driven
 - b. will have been driving
 - c. will have been driven
 - d. will drive
13. "I once saw a turtle that had wings. The turtle flew into the air to catch insects." "Stop kidding. I ___ you!"
 - a. don't believe
 - b. am not believing
 - c. didn't believe
 - d. wasn't believing
14. I borrowed four books on gardening the last time I ___ to the library.
 - a. go
 - b. went
 - c. had gone
 - d. have gone
15. The city is rebuilding its dilapidated waterfront, transforming it into a pleasant and fashionable outdoor mall. Next summer when the tourists arrive, they ___ 104 beautiful new shops and restaurants in the area where the old run-down waterfront properties used to stand.
 - a. will found
 - b. will be finding
 - c. will have found
 - d. will find
16. I don't feel good. I ___ home from work tomorrow.
 - a. am staying
 - b. stay
 - c. will have stayed
 - d. stayed
17. They ___ about something when I walked into the room.
 - a. were arguing
 - b. argued
 - c. had argued
 - d. have argued

18. Just relax, Antoine. As soon as your sprained ankle heals, you can play soccer again. At this time next week, you _____ soccer again.
 - a. will play
 - b. are playing
 - c. play
 - d. will be playing
19. "When are you going to ask your boss for raise?" " _____ to her twice already! I don't think she wants to give me one."
 - a. I've talked
 - b. I've been talking
 - c. I was talking
 - d. I'd talked
20. Before I started the car, all of the passengers _____ their seat belts.
 - a. will buckle
 - b. had buckled
 - c. buckle
 - d. have buckled
21. She will _____ almost \$ 1000 by then.
 - a. save
 - b. have saved
 - c. have been saving
 - d. be saving
22. Jim, why don't you take some time off? You _____ too hard lately. Take a short vacation.
 - a. worked
 - b. work
 - c. were working
 - d. have been working
23. Jane's eyes burned and her shoulders ached. She _____ at the computer for 5 straight hours. Finally, she took a break.
 - a. is sitting
 - b. has been sitting
 - c. was sitting
 - d. had been sitting
24. By next year, Roger will _____ here for 10 years.
 - a. live
 - b. be living
 - c. have been living
 - d. be going to

**Appendix C
Deductive Lesson Plan (sample)**

PAST	PRESENT	FUTURE
An action that already took place	An action that is happening right now	An action that is going to happen
Subject + verb + ed + ROS	Subject + is/are + verb + ing + ROS	Subject + will + verb + ROS
<u>Examples</u>	<u>Examples</u>	<u>Examples</u>
The cat + jump + ed + onto the bed.	The cat + is + jump + ing + onto the bed.	The cat + will + jump + onto the bed.
<i>The cat _____ onto the bed.</i>	<i>The cat _____ onto the bed.</i>	<i>The cat _____ onto the bed.</i>

**Appendix D
Inductive Lesson Plan (Sample)**

PAST	PRESENT	FUTURE
An action that	An action that	An action that
Subject + verb + _____ + ROS	Subject + _____ + verb + _____ + ROS	Subject + _____ + _____ + ROS
<u>Examples</u>	<u>Examples</u>	<u>Examples</u>
The cat + jump + ___ + onto the bed.	The cat + is + jump + ___ + onto the bed.	The cat + ___ + jump + onto the bed.
<i>The cat jumped onto the bed.</i>	<i>The cat is jumping onto the bed.</i>	<i>The cat will jump onto the bed.</i>