UNIVERSITY OF JYVÄSKYLÄ

DEDUCTIVE AND INDUCTIVE APPROACHES IN TEACHING SINGULAR AND
PLURAL NOUNS IN ENGLISH

A proseminar paper

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ABSTRAKTI

Deduktiivinen ja induktiivinen lähestymistapa ovat jo pitkään kilpailleet keskenään asemastaan kielen opetuksessa. Useista tutkimuksista huolimatta kummankaan lähestymistavan paremmuutta ei ole pystytty osoittamaan. Deduktiivinen lähestymistapa seuraa perinteisempiä opetusmetodeja, joissa säännöt ja esimerkit annetaan ensin, ja tämän jälkeen oppilaat soveltavat oppimaansa useissa tehtävissä. Induktiivinen lähestymistapa puolestaan lähestyy opetettavaa asiaa päinvastaiselta kannalta, jossa oppilaat itse päättelevät säännöt useista esimerkeistä. Säännöt voidaan tämän jälkeen käydä yhdessä läpi. Tämän tutkimuksen tarkoituksena oli vertailla deduktiivisen ja induktiivisen lähestymistavan paremmuutta englannin kielessä yksikköä ja monikkoa opetettaessa sekä tarkastella lähestymistapojen vaikutuksia pitkäkestoiseen oppimiseen. Tutkijat ovat havainneet oppilaan oman taitotason vaikuttavan lähestymistapojen tehokkuuteen oppimisessa. Koska tulokset eivät kuitenkaan ole johtaneet selkeään lopputulokseen, myös tämä työ tarkastelee oppilaiden taitotason yhteyksiä lähestymistapoihin.

Tutkimukseen osallistui 32 lukion ensimmäisen luokan oppilasta kouvolalaisesta lukiosta. Aineisto kerättiin kahdessa osassa vuoden 2007 alussa. Oppilaat jaettiin kahteen tasavertaiseen ryhmään, joille opetettiin englannin kielen yksikkö- ja monikkomuotoja joko deduktiivisen tai induktiivisen lähestymistavan mukaan. Molemmat ryhmät testattiin välittömästi opetustuokion (á 45 minuuttia) jälkeen, sekä uudestaan neljän viikon kuluttua kurssikokeen yhteydessä. Tutkimus oli lähestymistavaltaan laadullinen ja tulokset analysoitiin tilastollisesti käyttäen t-testiä. Lisäksi oppilaiden taitotasoa verrattiin lähestymistapojen toimivuuteen laskemalla ryhmien keskiarvot kolmella eri taitotasolla: tyydyttävä, hyvä ja kiitettävä.

Tutkimuksen tulokset seurasivat pitkälti aikaisemmin suoritettuja tutkimuksia, sillä tämäkään tutkimus ei pystynyt osoittamaan selkeää eroa paremmuudessa tutkimusten välillä. Deduktiivinen lähestymismetodi tuotti hieman korkeammat tulokset molemmissa testeissä, mutta nämä eivät olleet tilastollisesti merkittäviä. Pitkäkestoisessa oppimisessa sen sijaan induktiivisen ryhmän erot ensimmäisen ja myöhemmän testin välillä olivat mielenkiintoiset, sillä suoritukset laskivat merkittävästi toisessa testissä. Lisätutkimusta tarvittaisiin selvittämään, mistä erot johtuvat. Myös deduktiivisen ryhmän suoritus laski, mutta sillä ei ollut tilastollista merkittävyyttä. Pitkäkestoisen oppimisen kannalta tulokset eivät siis olleet kannustavia. Verratessa oppilaiden taitotasoa lähestymistapoihin tuloksista kävi ilmi, että tyydyttävän tason oppilaat saivat parempia tuloksia induktiivisen lähestymistavan kautta, kun taas hyvät ja kiitettävän tason oppilaat hyötyivät enemmän deduktiivisesta tavasta. Tuloksia ei kuitenkaan varmistettu tilastollisen merkittävyyden kautta, joten ne ovat vain suuntaa antavia. Lisätutkimuksia kaivattaisiin selvittämään eroja tarkemmin, sillä tämä tutkimus oli pieni tilastolliseksi tutkimukseksi ja selvitti lähestymismetodeja vain yhdeltä suunnalta.

Asiasanat: deductive approach, inductive approach, learner ability, singular and plural nouns

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1   INTRODUCTION

The controversy between deductive and inductive approaches has been occupying the minds of linguists for a long time. The area has not been studied thoroughly yet but so far the studies have been nothing but inconclusive. Although at times the researchers have found one approach slightly better than the other, the differences in the results are not extensive or no differences have been found at all. Moreover, when a study gets better results in favour of one approach, another gets better results through the other. That is why my study aims at finding out if there are any differences between the approaches in a Finnish context where no such studies have been conducted before. The previous studies have also discussed how the target language proficiency of a learner affects the outcome of the approaches. Again some studies have found better results for one than for the other but a number of studies have got opposing results to the previous studies. Therefore, I am hoping to get results that would clearly support one or the other of the approaches to find out the most suitable ways to teach grammar to learners of different levels of ability.

Deductive and inductive approaches are opposing each other: they have different views of how to teach grammar. Namely, the deductive means that the grammar rule is first verbalized by the teacher and then the learners apply it through practice. The inductive approach, on the other hand, presents first multiple examples of the rule and the learners have to discover the rules by themselves. After that, the rules can be summarised explicitly but not all researchers consider it to be relevant. The topic is very interesting to me as a future language teacher and, therefore, it is useful to know how to get learners to learn best. Firstly, the area of deductive and inductive grammar teaching is still fairly unknown and the previous studies have been conducted a fairly long time ago, so my study brings a fresh insight to the topic. Secondly, almost all of the previous studies have been researching adult learners of a second language. My study, on its part, concentrates on upper secondary school learners who have been studying English for seven years.

The data of this study was gathered in two parts. First, I conducted a teaching experiment where singular and plural nouns were introduced and practised, and the participants were tested immediately after the session. The second part was conducted together with their course exam and I also received the participants' overall grades. The goals of this study were to find out whether one of the approaches would result in higher scores than the other and to see if they differed in long-term learning. A further study point was to examine whether the ability level of the participants showed any preference on either one of the approaches.

This paper will first introduce the theoretical background of the controversies between the two approaches and the results of the previous studies will be brought out. Also the effects of the learners' ability levels on the approaches will be discussed. After this, the present study with its research questions will be presented and the data and the method are introduced as well. Then the results of the study will be revealed and discussed in more depth in the conclusion section.

2   THEORETICAL BACKGROUND

The opposition of inductive and deductive approaches has been a controversial issue among linguists already for decades, and although several researchers have studied the issue, the area is still quite unknown. Thus, no such results have been found that would support entirely one of these approaches. Therefore, in this section I will analyse the results of the previous studies and present the theoretical background for my study. I will also discuss what the effect of the language skills of a learner on the approaches is.

2.1. The two approaches to grammar teaching

These two approaches have for quite a long time taken a rivalry position to each other and researchers have been seeking results to define which is more effective but so far the results have only been inconclusive. The approaches have a very different starting point and their teaching methods differ in many ways but they both still aim at developing the learner's knowledge about grammar. However, it does not

necessarily have to mean that one would exclude the other. Next, I will introduce the approaches more in depth.

2.1.1. The deductive approach

In the deductive approach a grammatical rule is first presented explicitly by the teacher and examples applying the rule will follow. Next the students practise the rule with various kinds of exercises, for example drills and translation into and out of the target language. That is to say, it moves from general to more specific information. This has also been the way how foreign language teachers traditionally have approached a new grammatical structure here in Finland, at least in my experience of grammar teaching during my history as a language learner from the elementary school to the upper secondary school.

The deductive approach is also often compared with other more traditional methods of grammar teaching. It aims at teaching various grammatical rules one at a time through presentation and explanation by the teacher. Moreover, it is seen to facilitate the learners' acquisition by "making learners notice structures that they might not otherwise have noticed" (Ellis 1993, 1995, as quoted by Ruin 1996:104). This is done by giving the learners explicit interpretations and time to internalise the rule instead of making them to use or produce structures they cannot yet fully master. Also, as the approach gives the teacher a simple and quick way for teaching the rules, there will be more time for practising the structure. Actually, according to Smith (1980, as quoted by Rutherford and Smith 1988:109), explicit instruction that focuses on form outside its context can result in deeper learning than natural acquisition.

On the other hand, knowing explicitly about a rule does not necessarily mean that it is truly acquired. As a matter of fact, Shaffer (1989:395) thinks that students might not fully understand the rule from the presentation and do not really know how to actually use it. Decoo (1996:107) agrees with Shaffer but sees also that examples can help the learners to acquire the rule. The deductive approach has also been blamed for making the learners' role rather passive as much of the attention is focused on the teacher explaining the rules and showing the examples. Moreover, usually the

grammar instruction is given by using the learners' mother tongue, thus leaving little opportunity for them to hear or practise the target language. According to Thornbury (2004:30), especially young learners might not yet have sufficient metalanguage to understand the abstract grammar concepts involved as they may not have yet been taught about them in their mother tongue, and therefore, might lose their interest. Moreover, this kind of an approach to grammar can lead to a wrong conception that knowing the rules is all that is needed to learn a language.

As can be seen, researchers have differing opinions about the advantages and disadvantages of the deductive approach. However, it is still highly used in language teaching due to its long traditions and the cost and time effectiveness but recently the interest has been towards more communicative approaches. Next I will present the inductive approach and its view of grammar teaching.

2.1.2. The inductive approach

The inductive approach, in its turn, moves from specific to general. The learners are first shown many examples that contain a certain grammatical structure in different contexts and they have to work out the rules by themselves. Next the learners apply the rules with various exercises and in different contexts to learn how they actually work in real language use. Yet here theorists have differing opinions about whether or not the rule should be verbalized at all. Some consider it to be helpful for the learners but others think it only disturbs the process of acquisition (Decoo 1996:97). In the present study, however, the rules were verbalized as a summary after the learners had had an opportunity to discover the rules by themselves from the examples (see Appendix 2). This was because some learners might need explicit rules to be able to understand the concepts. I will discuss this in more depth below.

This approach is also often compared with the Audio-Lingual method that sees language learning as habit formation where, according to Shaffer (1989:395), learners will learn the structure through examples until it becomes automatic. He also thinks that the students will not know what they are learning unless the teacher gives the explanation to them. Grammar is here presented in context and the learners can

consciously work with the language. In fact, consciousness-raising is seen as an important feature in language learning as it focuses learners' attention actively on a grammatical structure through examples and guides them to work out the rules of the target language themselves, instead of giving them everything ready and waiting (Ruin 1996:106). This approach also involves the learners in a more active participation and as they need to figure out the rules by themselves, the learners will remember and acquire them better than just by hearing them from the teacher.

Despite the advantages of the inductive approach, it might not always be a good way to approach a grammar item. Firstly, it can be very time consuming as the teacher has to create the many examples needed to demonstrate the rules well enough and it might also take much time for the learners to actually discover the rules. The time taken to the discovery might not leave enough room for exercises and in this case the learners could only depend on their own conclusions. Secondly, the learners might hypothesise the rules wrong which might lead to incorrect assumptions of the grammar item (Thornbury 2004:54). Now, if the rules are not verbalized at all, it might be very difficult later to unlearn what the learners have originally acquired and, thus, it could lead to bad habits in real language use.

Again, the researchers are not completely satisfied with the method although many have found it functional. Here the learners get to participate more but, on the other hand, this participation might lead to incorrect knowledge about the language and also take time from actually practising the rules. Consequently, I will now discuss the approaches together.

2.1.3. Summary of the approaches

As could be seen from the presentations of the approaches, the researchers have differing opinions which one of the methods is more useful for the learners. Both approaches have their positive and negative sides and their approaches to learning grammar are quite the opposite. In this chapter I will discuss shortly the pros and cons of the approaches and how to best use them in teaching.

Although quite much research has been done comparing the approaches, the various studies have not shown big differences in favour of either one of them. Some have found supporting results for the one but then another study shows better results for the other (see Erlam 2003). Learners receiving explicitly instructed deductive grammar teaching have reached higher levels of grammatical accuracy in some studies and have progressed faster but it does not necessarily guarantee that they have actually learned the rule. Thornbury (2004:55) also found in a survey that many learners actually prefer the deductive approach as they want that the rules are explained to them. This might have something to do with the grammar teaching tradition that has mostly concentrated on explicit rule presentation and the learners have just got used to it. It is how they see grammar teaching.

However, it seems that if the learner is already aware of the concepts used in grammar teaching, the deductive approach might help them to internalise the rules as they have the tools to compare the new information to their previous knowledge about language. Otherwise the rules might be hard to take in or even remember. On the other hand, by having to work out the rules by themselves, the learners need to use more time to actually understand them and, thus, the rules can be easier to remember. Corder (1988, as quoted by Ruin 1996:109) sees the pros of both of the approaches, as according to him, in the deductive approach the learners' attention is directed to the problem by giving the rules first to raise their awareness of it, whereas by giving the examples first in the inductive approach the learners are encouraged to use their own intuitions and observations to figure out the rules by themselves. Therefore an ideal syllabus might be to use both deductive and inductive approaches together depending on the topic and its level of difficulty.

The discussion of the previous studies showed that both approaches can be useful in teaching grammar but as a future language teacher, it would be helpful to know how the approaches affect the learning of different learners with varying levels of language skills. This will be discussed in more detail in the next chapter.

2.2. The effect of learner ability on the approaches

As could be seen from the previous researches, neither one of the approaches has been proven to be a better one. Researchers have, though, been discussing about the abilities of the learners and their connections to different ways of learning. There are different learners in a class and it is very difficult for the teacher to know beforehand how to teach a certain grammar item in order to get all learners to learn. Therefore, I will examine in this chapter how the learners' abilities might affect the teaching approaches.

In every class there are different learners who learn best in different ways, and that is why it is difficult to define the best way to teach. One crucial difference is in the learners' level of proficiency in the target language but the level of difficulty of the grammar rule has also an effect. Grammar is often easier to teach to those who already have some knowledge of the target language, and according to Carroll (1964, as quoted by Shaffer 1989:395), that is also why the deductive approach is thought to work better with more mature and advanced learners who can actually understand the complexities and abstract concepts of grammatical theory. They have already acquired the metalanguage that is needed to be able to talk about concepts of grammar and can thus understand them better. Novice learners, in their turn, might easily get bored with the abstract concepts they do not understand. On the other hand, Ausubel (1963, as quoted by Shaffer 1989:396) believes that only the more advanced learners could benefit from the inductive approach but it would be too difficult for the less skilled novice learners. In this case the talented learners are able to actually use their knowledge about language which might increase their motivation as they get to explore the rules themselves. In other words, researchers have found benefits only for the more advanced learners in both approaches but neither of them seems to fit for the novice. Again, the issue is very contradictory as different theorists have found polar results and therefore a general opinion is that it would be the best to use both approaches to guarantee an equally good level of proficiency for different learners.

What many researches seem to agree with is the fact that the inductive approach works best with simple structures, and complex, difficult structures are best learned by thorough presentation and interpretation of the deductive approach. The less skilled learners might need continuous guidance from the teacher to discover and understand the rules but the more talented learners are able to discover simple rules themselves. Moreover, it is also timesaving for the teacher to present the rules for the learners, and to use more time and energy on practising them in actual use. The problem here might be how to define what is difficult for the learners and what is not, and therefore combining the two approaches might bring the best results on the part of the students.

As could be seen from the discussion of the different studies, no clear results could be found whether the inductive approach is better than the deductive, or vice versa, or whether they actually have a difference when compared with the language skills of the learners. Next, I will introduce the present study and bring out the results of the possible differences between the approaches.

3 THE PRESENT STUDY

The purpose of the present study was to test whether there are any differences between the acquisition of two groups that were taught the singular and plural nouns of English either according to the deductive or the inductive method. As was discussed above, there has not been found any particular preference on either of the methods. In this chapter I will explain the gathered data and also define the method of my study.

The goal of the present study was also to examine if any differences appeared in a Finnish context with young participants. In previous studies the participants have mainly been adult learners and therefore the present study brings new aspects to the issue. This is also among the first studies on the topic in Finland. The research questions that the study sought to answer were:

1. Which one of the approaches brings better results in learning singular and plural nouns?
2. Are there differences in long-term learning between the participants?
3. Does the ability level of the learner show any preference on either one of the approaches?

3.1. Data

In this chapter I will present the data gathering and introduce the participants. As in the previous studies, the data of this study was gathered in a teaching experiment and the results came from post-tests of the target item that were conducted later.

The data of this study consists of two post-tests undertaken by 32 first year learners in upper secondary school in Kouvola region and also of their course grades. The first post-test was conducted immediately after a teaching experiment on the first week of the spring term in January 2007 and the delayed post-test approximately four weeks later together with their course exam. The first test was compiled by me and the latter test by their teacher (see Appendices 3 and 4). All participants, except four, belonged to the same instruction group but they all were attending their second English course in the upper secondary school. They had studied English already for seven years. This particular age group was chosen because not many grammar rules have yet been taught to them in the upper grade and, according to their English teachers, the students do not master many of the rules although they have learned them already in the secondary school. The grammar item of the study, singular and plural nouns, was chosen by the teacher as it was complex enough but not too exhaustive, and it was also a part of the curriculum during the course.

The participants were divided into two even groups by their teacher so that the groups formed approximately a similar average grade. The first group had 17 participants and they were taught inductively and the second group had 15 participants and they were taught deductively. Each group had a teaching experiment of 45 minutes and the groups were not allowed to communicate between the parts. For the inductive group I had made up several sentences concerning the

grammar points of the singular and plural nouns and the students had to figure out the rules from the examples. After this the rules were summarised together. The deductive group, on the other hand, received first the rules which were followed by various examples of the rule usage, and they were also asked to form a few examples themselves (see Appendices 1 and 2). Because of the time limit only two exercises applying the singular and plural forms of nouns and verbs were done together with the participants before the first post-test. These exercises were a part of the grammar section of the participants' course book.

The first post-test included six sentences in Finnish that the students were supposed to translate into English and ten fill-in-the-gap sentences where the students had to choose whether to use singular or plural form of a noun or a verb. The singular and plural forms in the second task were given to them and some of the options also included incorrect forms. This was to test whether the participants could identify the incorrect ones. Some of the forms used in the teaching session were also used in the test but some of them they had to conclude themselves from the examples. Furthermore, the teacher approved the test before it was given to the students as to assess its difficulty level. The delayed post-test, on its part, consisted of two tasks where in the first task the participants had to translate five sentences into English and in the second task they were supposed to write the plural forms of five nouns. The delayed post-test was a part of the participants' course exam. It was then to measure whether there was any difference in the learners' learning between the teaching experiment with the post-test and later acquisition during the course or during self-study. Together with the results from the two tasks I also received the learners' overall grades for the course.

3.2. Method

In this chapter I will present the method I used to analyse the data. Through comparison and contrast I will try to bring out the differences between the approaches as far as they are identifiable.

The data that consisted of the points the participants received from the two post-tests and also the overall grades of the course was cross-examined. First, I compared the results between the first post-tests of both groups to see which method led to better immediate learning of the topic. I also looked at the results of the delayed post-test to see which group had reached higher scores that time. Next, I compared the results of the first post-test to the results of the delayed post-test of both groups to see which approach leads to better long-term acquisition.

As a second part of the present study I examined the individual results of the tests and compared them to the overall grades the participants received from the course. I contrasted the results to the grades to see what the ability level of the participants was and how it correlated with their learning. I examined the grades to see which one of the approaches resulted in higher scores for the talented participants and the less talented ones. As I discussed in the theory part, the researchers have been very inconclusive about the matter and therefore my study is trying to find out in a Finnish context, whether the approaches actually make a difference compared to the ability level of a learner.

The data was analysed by using statistical analysis. A mean was counted of the results of the two post-tests for both groups and the statistical significance was examined through the T-test. When examining the effects of the learner ability on the approaches, the learners were divided into three levels according to their course grade. Level 1 includes grades 4 to 6, level 2 grades 7 to 8, and level 3 grades 9 to 10. The means of the results in both tests were calculated to all levels and then cross-examined. Moreover, the results of each participant were correlated to their ability level by using Pearson's to see if they matched.

Having introduced the data and the method I am now presenting the results of my study in the next chapter. I will present the findings starting with the differences between the two approaches and then I will compare the results to the overall skills of the learners to see which approach supports the participants best at each ability level.

4. THE RESULTS

In this chapter I will present the results of my study. I will first compare the two approaches and examine whether there were differences between them in the two post-tests and also whether they differed in long-term learning. Then I will look at the results of the learners to see how the approaches support the ability level of the learners.

4.1. The differences between the approaches in the two post-tests

As mentioned above, the two participant groups were taught singulars and plurals according to either the deductive or the inductive approach. After the teaching experiment both groups were tested to see which of the approaches led to better results. The groups were tested again in four weeks time to see which of the approaches resulted in better long-term learning. Next, I will present the results of the two post-tests.

According to the previous studies, no clear results have been found that would strongly support either one of the approaches. However, a slight preference was found in favour of the deductive approach. Better results were found in grammatical accuracy with the deductive group but the inductive was not far behind. Table 1 shows the group results in the two post-tests of the present study.

Table 1. The scores of the two post-tests

	Group	N	**Mean**	Std. Deviation	Std. Error Mean
post-test1	deductive	15	**78,67**	13,447	3,472
	inductive	17	**72,65**	13,788	3,344
post-test2	deductive	15	**69,73**	22,764	5,878
	inductive	17	**59,24**	22,373	5,426

As can be seen from Table 1, the deductive group received better results in both tests. The deductive group received a mean of 78,67 per cent of correct answers in the first post-test and 69,73 per cent in the second test whereas the inductive group received a mean of 72,65 per cent and 59,24 per cent, respectively.

Table 2. The differences between the experiment groups in the post-tests

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		Lower	Upper
post-test1	Equal variances assumed	,604	,443	1,247	30	,222	6,020	4,828		-3,841	15,880
	Equal variances not assumed			1,249	29,677	**,222**	6,020	4,821		-3,830	15,869
post-test2	Equal variances assumed	,005	,946	1,314	30	,199	10,498	7,991		-5,821	26,817
	Equal variances not assumed			1,312	29,368	**,200**	10,498	8,000		-5,854	26,850

However, as can be seen from Table 2, the results did not differ in large numbers and the difference between the groups was statistically non-significant (p=,222 in the first post-test and p=,200 in the second (Sig (2-tailed))).

The two post-tests were also compared to each other between the groups to see which one of them resulted in better long-term learning. Table 3 presents the differences between the groups in the post-tests.

Table 3. Differences between the post-tests in both participant groups

group			Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
			Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
deductive	Pair 1	post-test1 - post-test2	**8,933**	20,247	5,228	-2,279	20,146	1,709	14	**,110**
inductive	Pair 1	post-test1 - post-test2	**13,412**	15,387	3,732	5,501	21,323	3,594	16	**,002**

As Table 3 indicates, the difference between the first and the second post-test of the deductive group was non-significant (p=,110). In other words, they reached similar enough results from both of the tests and, thus, did not show much difference in a long term. The results of the inductive were, on the other hand, significant (p=,002).

Table 1 showed that the inductive group received a mean of 72,65 per cent in the first post-test and 59,24 percents in the second test. Their results decreased 13,41 per cent between the tests, whereas the deductive group lowered their result only by 8,94 per cent. Long-term learning –wise the results did not show positive development which was an interesting finding itself.

The findings showed similar results to the previous studies by the means that the deductive approach reached slightly higher scores in both of the tests. Then again, the findings were surprising in the part of the results of long-term learning as they were lower in both groups but especially in the inductive one. Next, I will examine the three ability levels to see how the approaches support each one of them. I will also look at the correlations of the scores to the participants' levels of ability.

4.2. The differences between the two approaches correlated to the ability levels of the participants

Although the deductive approach showed slightly better results in both of the tests, it does not guarantee that the grammatical topic was learned. Moreover, the results showed only the differences between the two groups but did not tell anything about the individual achievements of the learners. Therefore, in this paragraph I will present the results of the post-tests compared to the overall grades of the participants' to see whether the ability level of the learners actually prefers either one of the approaches.

As could be seen above, the researchers had very differing opinions how the approaches suit for different kind of learners. Some thought that deductive is better for the advanced learners who can understand the abstract grammatical concepts but others saw that the inductive approach was better as the advanced learners would be more motivated as they get to explore the language themselves. Only the novice learners seem to draw the shorter straw in grammar learning as the intermediate learners have also reached a sufficient enough level where they are able to either follow the explicit grammar rules or to work out the underlying patterns of a language by themselves. Learners in upper secondary school can have very different

ability levels in English and therefore it is important to know which approach works most effectively. Table 4 presents the differences between the learners of the highest, the intermediate and the less skilled levels of both groups in the two post-tests.

Table 4. The ability levels of the learners

	group	ability level	N	Mean	Std.Deviation
post-test1	deductive	1	2	**61,50**	21,920
		2	9	**78,22**	10,580
		3	4	**88,25**	8,098
	inductive	1	6	**62,17**	9,152
		2	5	**67,20**	8,136
		3	6	**87,67**	6,282
post-test2	deductive	1	2	**30,00**	14,142
		2	9	**74,00**	17,720
		3	4	**80,00**	16,330
	inductive	1	6	**41,17**	15,728
		2	5	**60,00**	13,379
		3	6	**76,67**	21,314

Table 4 shows that in the first post-test the ability level 1 participants (grades 4 to 6) got better results in the inductive group (a mean of 62,17 per cent) than in the deductive group (a mean of 61,50 per cent) and similar ratios could be found also in the second post-test (means of 41,17 per cent and 30,00 per cent, respectively). In the intermediate level (grades 7 to 8), the deductive group received higher results than the inductive group in both post-tests. In the first post-test, the means were 78,22 per cent and 67,20 per cent and in the second post-test 74,00 per cent and 60,00 percent, respectively. The results showed preference for the deductive group in both post-tests also in the ability level 3 (grades 9 to 10). The deductive group received a mean of 88,25 per cent in the first post-test and 80,00 per cent in the second post-test, whereas the inductive group reached 87,67 per cent in the first and 76,67 per cent in the second post-test. However, the numbers are only directional as the statistical significance cannot be showed by means and therefore no reliable conclusions can be made over the superiority of either one of the approaches.

To see whether the participants had succeeded according to their usual ability level in the two post-tests, correlations between the course grades and the results of the

post-tests were calculated. Thus the reliability of the results of Table 4 can better be verified. Table 5 presents the correlations between the test scores and the grades of the participants.

Table 5. Correlation between the test scores and the overall grades of the participants'

group			post-test1	post-test2	grade
deductive	post-test1	**Pearson Correlation**	1	,472	**,774(**)**
		Sig. (2-tailed)		,076	**,001**
		N	15	15	15
	post-test2	**Pearson Correlation**	,472	1	**,709(**)**
		Sig. (2-tailed)	,076		**,003**
		N	15	15	15
	grade	Pearson Correlation	,774(**)	,709(**)	1
		Sig. (2-tailed)	,001	,003	
		N	15	15	15
inductive	post-test1	**Pearson Correlation**	1	,736(**)	**,682(**)**
		Sig. (2-tailed)		,001	**,003**
		N	17	17	17
	post-test2	**Pearson Correlation**	,736(**)	1	**,646(**)**
		Sig. (2-tailed)	,001		**,005**
		N	17	17	17
	grade	Pearson Correlation	,682(**)	,646(**)	1
		Sig. (2-tailed)	,003	,005	
		N	17	17	17

** Correlation is significant at the 0.01 level (2-tailed).

The results showed that the correlation between the test scores and the grade was positive in all cases (Pearson Correlation, marked bold). Moreover, the P-values were as well significant every time. Actually, the values were highly significant in three out of four cases; the P-value is close to extremely significant in both tests of the deductive group and in the first post-test of the inductive group. This indicates that the participants succeeded in their tests more or less according to their ability level.

The results indicated that the deductive approach worked slightly better with the intermediate and the highest ability levels, and the lowest levels benefited mostly from the inductive approach. Moreover, the participants seemed to achieve scores from the post-tests that correlated with their ability level. In the next chapter I will look at the results more closely and discuss how they actually affect language learning and teaching, if at all.

5.   CONCLUSION

The findings of the present study showed similar results to the previous studies as the deductive group did slightly better in both tests. However, the results for long-term learning were surprising as they were poorer than in the first post-test especially in case of the inductive approach. The effects of the ability levels also indicated a slight preference for the inductive approach in the lowest levels, whereas the higher levels seemed to prefer the deductive approach. In this chapter I will discuss the results more in depth and also consider a need for follow-up researches.

The results were not surprising when examining the differences between the approaches to see which one of them resulted in higher scores in the two post-tests. In a similar way to the previous studies, also the present study showed slightly higher scores for the deductive approach as that group made it better in both post-tests. However, the difference was not statistically significant and therefore no conclusions of the superiority of one of the approaches could be drawn this time either. After all, the differences between the approaches were examined only through one teaching experience and further learning was not controlled. The exercises that the participants did after the teaching experiment together were the same for both groups and, thus, it did not correspond to the differences between the deductive and the inductive approach. Namely, the tasks for the inductive group should have been more creative than the traditional drills and translation tasks of the deductive approach that the course book included.

The present study was only a small scale study and therefore the results should not be generalised too much for a number of reasons. Firstly, the participant group was fairly small for a quantitative study and the statistical results are not reliable enough to draw conclusions about the superiority of either one of the approaches. Secondly, the participants were tested only twice in a short period of time and as they were able to contact their teacher over the topic, they all may have got similar instruction about the grammar item. This could then have affected the results for the delayed post-test. Also, to get more reliable results, the participants should have been tested

again after a longer time to see which group actually had internalised the grammar item better. Thirdly, the results of this study concerned only one aspect of language learning, namely, the singular and plural nouns, and cannot, thus, be postulated to concern the whole area of language learning: although one of the approaches might show better results in learning grammar, it might be the other way in another area of language learning.

In both groups the results were lower in the second post-test and did not show positive development for long-term learning. This is an interesting finding, as the scores were quite different between the tests and both groups did worse in the delayed test. A reason for this difference might be that the two tests were designed by two different persons, me and the participants' teacher, but they were, however, quite similar in their task types. Moreover, a very interesting difference between the two post-tests was found in the inductive group as the participants' scores were much lower in the delayed post-test than in the first post-test and the change was also statistically significant. One reason could be that in the first post-test the participants sat next to each other and therefore could have looked the answers from a participant sitting next to them. That participant may have been a more advanced level learner than the one looking at the answers and, thus, the results would be incorrect. A further reason could be that the participants were more used to the deductive approach and might not have therefore internalised the rules well enough. Then again, the first post-test was conducted immediately after the teaching experiment and the participants had the grammar rules and the vocabulary used during the teaching fresh in their memories. In the delayed post-test that was conducted together with their course exam, some of the participants might not have studied the singular and plural topic carefully enough and they also had other topics to study. The last two points could explain the poorer results in the delayed post-test for both groups.

Although the researchers had found both the approaches to be useful for the higher level learners, the present study implied that they benefited slightly more from the deductive approach and the learners at the lowest levels could reach higher scores

through the inductive approach. But as was mentioned above, the results are only directive as the statistical significance was not showed. Moreover, the participants were quite few in number and therefore the figures cannot be generalised to apply to learning grammar. This was especially on the lowest level, where the number of the participants was only two in the deductive group. They should have been examined individually as personal factors can also affect the results. Nevertheless, in spite of the excitement of the inductive approach that should motivate the advanced learners to explore the language, the more traditional ways of the deductive approach seemed to appeal them more but the differences were not great between the groups. The more effective way for the low level learners remains a question mark as because of the small numbers of the participants, the figures are not statistically comparable. However, the results did show that the participants performed according to their ability level in both tests and therefore this issue requires further examination.

The study seems to remain as inconclusive of the superiority of one of the approaches as have also the previous studies. The Finnish context did not affect the results in a significant way nor did the age of the participants. The participants reached slightly higher results through the deductive approach as in the previous studies but the differences were not extensive enough to show any statistical significance. Nonetheless, the results of the inductive group in long-term learning were interestingly poorer and it requires re-examination. Moreover, the study was not comprehensive enough to draw any kind of strong conclusions of the issue and this was especially the case when comparing the results of the effect of learner ability on the approaches: the participants were too few in number and the statistical significance was not showed. In conclusion, further study is needed to work out the deductive and inductive controversies.

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SINGULAR AND PLURAL Name_____

POST-TEST

Translate into English.

1. Mary on ihana ihminen. Kaikki ihmiset pitävät hänestä.

    _____

2. Ovatko nämä sinun matkatavaroitasi?

    _____

3. Matematiikasta tykkään, mutta tilastotiede ei kiinnosta minua ollenkaan.

    _____

4. Tehtävän ratkaisuun on monia keinoja. (keino= a means)

    _____

5. Juhlat olivat mukavat.

    _____

6. Annan sinulle yhden neuvon.

    _____

/12

Choose the correct form. Pay attention also to verbs.

1. The police _____ to have caught the thieves.   (seem/seems)
2. The _____ who are running there broke my window. (boy/boys)
3. I shook _____ with the queen.   (a hand/hands)
4. The news _____ horrible.   (was/were)
5. My mother doesn't have _____ knowledge about the Internet. (much/many)
6. They are good _____.   (persons/people)
7. The _____ was discussed very much in the media.   (phenomenon/phenomena)
8. The information _____ very useful.   (wasn't/weren't)
9. _____ got away! (plural)   (The sheeps/the sheep)
10. The marriage was at _____.   (a crisis/crises)

/10

Appendix 4. The delayed post-test

1. Please translate the following sentences into English

1 Uudet huonekaluni ovat tulleet.

_____

2 Hyviä neuvoja tarvitaan aina.

_____

3 Nämä ovat minun urheiluvarusteeni.

_____

4 Läksyt tekevät minut usein hulluksi.

_____

5 Tämä ympäristö ei sovi minulle.

_____   __/10p

2. Write the plurals (monikot)

1 a hero   _____

2 a child   _____

3 a toy   _____

4 a sheep   _____

5 a box   _____   __/5p