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THE EFFECTIVENESS OF LEARNER-CENTERED GRAMMAR TEACHING

Yuki Maehara

Abstract

English instructions in Japanese classrooms have usually been conducted using "teacher-centered" approaches, especially when teachers adopt the deductive method. This research was conducted in order to determine the effectiveness of using a learner-centered approach in grammar teaching and also to consider whether this kind of approach is useful in promoting learner autonomy. This small-scale study involved 161 first-grade students at a private high school in the metropolitan Tokyo area. The students were divided into two groups: one group studied grammar deductively; the other inductively. After the pilot study, the groups were switched. The effectiveness of both the teaching methods was measured by three identical grammar tests. In addition to the grammar tests, pre- and post-surveys were conducted. As a result of the grammar tests, no significant difference was found between the students who learned grammar deductively and those who learned inductively. The analysis of the surveys indicated that the favorable rating for the inductive approach significantly increased. The favorable rating for the deductive approach stayed almost the same. The students may have become more open to the idea that both the inductive and deductive approaches were useful in learning grammar. Furthermore, some students' comments indicated that they have realized the importance of using different approaches depending on the type of grammar item. In conclusion, pedagogical suggestions for grammar teaching and learner autonomy are suggested.

1. INTRODUCTION

It is assumed that promoting learner autonomy is essential when teaching grammar in the language classroom. Nowadays language teaching is viewed with a broader educational value than merely developing learners' linguistic and communicative skills. That is, cultivating

learners who can use the language is not sufficient. Promoting learner autonomy in language learning entails rather holistic goals because learning is based on the belief that all learners are part of their own society (Kohone et al., 2001). In order to prepare for a rapidly changing world, autonomous learning will be vital for learners to live independently in a globalized society (Cotterall, 1995). van Lier (1996) states that "students can not be independent unless their classroom experiences contribute to developing autonomy" (p. 80).

1.1 Background

In general, grammar classes in Japan are traditionally teacher-centered (Celce-Murcia & Hills, 1988; Mochizuki, 2001) and students think of such classes as quite normal. Students conceive knowledge as something transmitted by the teacher rather than discovered by the learner (Littlewood, 1999; Nakata, 2007; Usuki, 1999). However, not all Japanese students are satisfied with being passive learners any more. The following are excerpts written by two 3rd grade senior high school students (aged 17-18 years old) from my writing class in 2007. For ethical considerations, permission to use parts of their essays in this paper was obtained from the students. These excerpts illustrate what students thought about Japanese classroom and teaching practice.

> Excerpt 1: When I went to Australia and England and took classes with the students there, I saw many students communicate with teachers and friends in a friendly atmosphere. In Japan, there are just lectures. I mean teachers are speaking all the time and students are just listening and writing down from the blackboard. I found many different points of learning style and it made me consider what education should be in Japan.

This student compared the different learning styles of students in Japan and other countries she had experienced.

> Excerpt 2: In the school, many teachers only read textbooks or handouts now. These classes are very boring. Teachers should conduct more interesting classes.

This student thought that teachers should devise better ways of teaching in classroom.

1.2 Hypothesis

These students do not think teacher-centered instruction is beneficial for them and wish for more learner-centered classes. A learner-centered classroom is defined as one in which students are given "increasing responsibility for their own learning process" (McCombs & Whisler, 1997, p. 65). To be more specific, it is to provide students with learning opportunities to think for themselves. Edwards (2004) introduces an action research process for the teachers who aim at learner-centered grammar teaching; the teachers who want to encourage their students to find out a grammatical rule for themselves come up with a principle that students should learn inductively.

In order to promote learner autonomy and encourage students to think for themselves, teacher-centered instruction should be modified. The alternative way should include a discovery work in which students work out the rules for themselves. This paper is based on learner-centered classroom principles and the inductive approach to teaching grammar with an end aim of improving language learning and promoting learner autonomy.

In line with the discussion above, this paper explores the following hypothesis.

> Students can learn more effectively when they actively participate in the lesson by discovering the rules for themselves instead of being passively instructed by the teacher. Consequently, students can develop learner autonomy by being more active in their learning process in the language classroom.

2. LITERATURE REVIEW

In this section, theoretical background related to this research is examined through a literature review.

2.1 Learner Autonomy

The autonomy in language learning originated from the establishment of *Centerede Recherches et d'Applications en Langues* (CRAPEL) in France in the early 1970s. The first self-access center was founded in CRAPEL under the provision of providing adult learners with authentic texts and counseling. Dam (1995) and her colleagues conducted an experiment implementing learner autonomy in a secondary school in Denmark. This experiment was significant because it contributed not only to later classroom innovations but also to a shift

in notion on learner autonomy from individual issues to collaboration and negotiation in a classroom setting.

The central concept of learner autonomy is defined as "the ability to take charge of one's own learning" (Holec, 1981, p. 3). It is more specifically defined as "playing an active role in learning" (Lee, 1998, p. 282). One of the other prominent factors of learner autonomy is "learner choice". Littlejohn (1985) claims that learner choice should be introduced more into the classroom as learners have no choice over what and how to learn. Introducing learner choice in areas such as grammatical items to be studied and the study approach may bring significant benefit. Woods (1997) views learner choice from a different aspect. Learner choice, the other side of the coin to teacher's choice, might provide interesting insight into learning. Implementing learner choice into classroom practice is likely to become a new concept of strategy research. For instance, which strategy or approach learners prefer to use in learning a certain grammatical item can be examined.

The concept of learner autonomy is closely associated with the concept of the learner-centered classroom. Lamb and Nunan (2001) define learner-centered classrooms as those in which learners are actively involved in their own learning and the decision-making process. The process starts with learners' awareness about preferred learning styles and approaches. The learner-centered approach does not mean leaving learners alone without teacher's support. Instead, the teacher's role is even more significant than that in teacher-centered instruction (Tudor, 1993). It implies that teachers who envisage adopting a learner-centered approach need to think carefully about the implication in terms of the extra work and responsibility. A learner-centered approach demands teachers to design an appropriate task, to monitor the activity, and to encourage students to interact with each other to complete the task. With the increased importance of the teacher's role, the shift from a teacher-centered classroom to a learner-centered classroom requires gradual introduction and careful preparation. The teacher should ensure that learners are able to adopt the new approach (Dickinson, 1987).

According to Dam and Legenhausen (1999), evaluation in autonomous language learning involving linguistic and other outcomes combines internal and external assessments. Internal assessment consists of surveys, learners' self-reflections, and teacher-learner talk. External

assessment comprises such tests as grammar, vocabulary, and discourse structure. In the autonomous classroom, learners are stimulated to develop capacity of critical reflection on their learning process; thus the focus is more on internal than external assessment.

2.2 Grammar teaching

There are basically two ways in which learners achieve understanding of a rule: the deductive (rule-driven) way and the inductive (rule-discovery) path. In the deductive approach, the grammar rules are simply presented by a teacher. In the inductive approach, on the other hand, the learner first studies examples given by the teacher and work the rules out for themselves. The deductive approach is closely associated with the 3Ps, which consists of a three-part teaching paradigm: Presentation, Practice, and Production (Skehan, 1998, p. 93). In the presentation stage, the teacher uses a deductive approach with grammar explicitly introduced. In the practice stage, learners go on to apply the rules through manipulation of examples. In the production stage, learners are required to produce sentences by applying the rules they have learned. The 3Ps is a relatively easy sequence for teachers to organize and to use with the whole class in a "one-directional view of language teaching" (*ibid*). One of the advantages of the deductive approach is that it is time-saving (Gollin, 1998; Hatori, 1996; Iino and Shimizu, 1985). A lesson proceeds smoothly according to the sequences determined by a teacher and finishes just as he or she plans. As a result, a large number of teachers and teacher trainees use the 3Ps to teach new language forms (Bruton, 2002; Cregg, 1999; Foster, 1999; Harmer, 2000; Weschler, 1997).

However, some second language acquisition (SLA) researchers claim that the 3P sequence does not reflect principles of effective SLA (Lewis, 1996; Lightbown & Spada, 1999; Skehan, 1998; Willis & Willis, 1996). Lewis (1996) claims, "Any paradigm based on, or remotely resembling, Present-Practice-Produce (the 3Ps) is wholly unsatisfactory, failing, as it does not reflect either the nature of language or the nature of learning" (p. 11). This means language learning is not simply linear in its development. Even if a learner can use a particular grammar form accurately at one stage, the learner may fail to produce the same form at another stage. According to Ellis (1993), the instruction a teacher provides will not necessarily be processed by a learner in the way the teacher intended. What is learned is rather controlled by the learner, not the teacher. Lewis claims that the 3Ps goes against the nature of language learning for these reasons. Another disadvantage of the deductive approach is weak retention: "as soon

as we introduce it, we weaken the impression which the word makes on the mind" (Below 1984, cited in Richards & Rogers, 2001, p. 41). Because knowledge is simply transmitted, it does not involve a problem-solving sequence in the learner's brain. Unless students are actually engaged in the meaning, they often do not remember what they have been taught in class.

On the other hand, the inductive approach is regarded as a means to enhance the memory of learners. Cognitive research has shown that discovering rather than being taught underlying rules favorably affects retention (Shaffer, 1989). For example, the theory of interlanguage is based on natural language acquisition, and the inductive approach easily conforms to interlanguage development (Leech, 1994; Brown, 2001). Selinker (1972), the first researcher to use the term interlanguage, suggests that second language (L2) learners pass through a certain stage of development in the process of reaching native level of competence (cited in Lightbown & Spada, 1999, p. 74). Other researchers (Brown, 2000; Ellis, 1985; Rutherford, 1987) argue that the concept of interlanguage is a useful model for demonstrating how learners use their first language to bridge towards the L2.

The inductive approach also promotes the cognitive ability of learning. The processes learners utilize when forming and testing hypotheses about the L2 grammar are believed to be central to the ultimate acquisition of language (Ellis, 2002). The process helps the learner develop the skill to investigate and explore language autonomously. Harmer (2001) names the inductive approach "discovery learning" and points out that discovery learning may not be suitable for all learners because there are two types of learners in SLA: analytical and holistic. Analytical learners extract rules from examples and test hypotheses, while holistic learners learn best by doing little or no analysis; instead they learn by exposure to large chunks of language in meaningful contexts (Celce-Murcia, 1988). Therefore, discovery learning may not be suitable for holistic learners, but suitable for analytical learners. Children tend to prefer a holistic approach, so the inductive approach may not be suitable for very young learners. Teachers should take learner variables into consideration. Every learner has different learning strategies or styles and not all learners take a single approach.

2.3 Target Grammar items
When determining a suitable approach to teach grammar, contrastive analysis (CA) is

indispensable. Contrastive analysis can help predict learning difficulty by identifying the differences between the native language (L1) and the target language (Ellis, 1985). Fischer (1979) created "Language Transfer Principle (LTP)" in order to make the best of students' L1 knowledge in teaching grammar. In Fischer's LTP, for teaching structures which are similar to or simpler than those of the L1 (known as positive transfer), the inductive approach is highly effective and L1 competence will work to maximize positive transfer. On the other hand, when teaching structures which are more complex than those in the L1 (known as negative transfer), the deductive approach is recommended. In these cases, the instructor avoids referring to the L1 in order to prevent negative transfer and confusion. Fischer (*ibid*) concludes that the most effective way of teaching and learning grammar is through the use of both approaches depending on the structures focused on.

The target grammar items used in the present research were simple future *will* and *be going to*, and verbs followed by to *to-infinitive* and *gerund*. These two items were basically taught in line with the definitions in the textbook *Grammar in Use Intermediate* (Murphy & Smalzer, 2000). For the pilot study, the grammar item chosen was simple future, *be going to* and *will*. In the participants' first language (L1) Japanese, *be going to* and *will* have little difference in meaning. The students were expected to distinguish *be going to* and *will* in context. According to Quirk et al. (1985), definitions of simple future are as follows: "*will* is the closest approximation to a colorless, neutral future it covers a range of meaning with modal coloring, from prediction to volition, while *be going to* is associated with the present and often leads to the assumption that it indicates the proximity of the future event" (pp. 213-214). In the textbook, *be going to* is used when a speaker has already decided, and *will* is used when a speaker decides to do something at the time of speaking (Murphy & Smalzer, 2000, p. 44).

For the experiment, the target grammar item chosen was verbs followed by *to-infinitive* and *gerund*. This is one of the major problems for Japanese students. In the Japanese verb system, the main verb is always followed by the subordinate verb in the same form. The goal of the initial query was to explore better ways to approach this problem rather than simply encourage rote memorization. Some researchers suggest (Bollinger, 1968 as cited in Celce-Murcia & Larsen-Freeman, 1983, p. 434; Palmer 1965, pp. 176-192) an underlying semantic principle; the *to-infinitive* very often expresses something "hypothetical, future, unfilled", while the

gerund typically expresses something "real, vivid, fulfilled". This principle explains why verbs like *want* and *hope* take only the *infinitive*. Willis et al. (1997) suggest that the differences between the *gerund* as simultaneous and *to-infinitive* as subsequent to the established time reference is helpful when explaining the difference (p. 72). In the textbook, *deny stealing* and *decide to steal* were used as examples. For the former, a person *denies doing* something *after/while* he or she did it; for the latter, a person *decides to do* something before he or she does it (Murphy & Smalzer, 2000, p. 106). The target grammar items both in the pilot study and the experiment did not contain any complex grammar structures, so they were considered to be suitable to adopt for the inductive way of teaching.

2.4 Previous studies

The following is a brief summary of previous studies comparing the relative benefits of the deductive and inductive approaches in grammar teaching.

Shaffer (1989) investigated the deductive and the inductive approaches using different instructors, one Spanish and two French teachers. In the inductive learning process, students were required to express orally what they had learned about the rule in the lesson. It was effective for these instructors to confirm learners' understanding of the rule. The inductive approach was thought to be unsuitable for complex structures or, at least too difficult for weak learners. However, Shaffer's research findings suggested that the inductive approach worked efficiently for both the hardest structure and the weakest learners. Furthermore, the inductive approach enhanced active participation by students. Shaffer suggested that teachers incorporate both inductive and deductive approaches into their classroom in a meaningful context.

Fotos (1993) reported on a study designed to investigate the relative effectiveness of direct and indirect grammar instruction. She found that both options resulted in statistically significant effects in understanding the rule for dative alternation in two groups of college level Japanese students. Fotos also demonstrated that the explicit knowledge gained from discovery tasks helped to promote learners' increased awareness of the target structures. This research had limitations because the instructors Fotos used in this investigation did not ensure that the discovery grammar task had been carried out properly (cited in Ellis, 2002, p. 165). It means that the instructors could not confirm whether each student had succeeded in

discovering the target structure for him/herself. This fact may reflect an inherent limitation of discovery tasks; discovery tasks require considerable expertise and care on the part of the instructor.

Erlam's (2003) study was conducted on three classes of secondary school students (approximately 14 years of age) in New Zealand. It compared the effectiveness of the deductive and inductive approaches by using the measures of both comprehension and production. As a result, it revealed a significant advantage for the deductive instruction group. This result contrasted with Shaffer's study (1989), which reported a trend in favor of inductive instruction by high school learners. Further study is needed to investigate to what extent age factor influenced students' performance.

Cole, Haight, and Herron (2007) conducted research on teaching eight grammar structures to college level students learning French. Pre- and post-test and immediate post-the treatment quiz were designed to assess the long- and short-term gains for each condition. Results indicated that the guided inductive approaches had both short-term and long-term effects. The researchers concluded that the guided inductive approach was appropriate to teach grammar to beginner-level college students.

3. METHOD

3.1 Participants

Participants were 161 first-grade high school students with an intermediate level in English. They belonged to six homeroom classes (A-F) and each class consisted of 25 - 29 students. They were divided into two groups based on their homeroom: Group 1 (N= 83) and Group 2 (N= 78). They used *Grammar in Use Intermediate, Second Edition* (Murphy & Smalzer, 2000) as the main textbook. *Grammar in Use* is one of the largest selling textbooks to the world-wide English as a Second Language (ESL) market, according to marketing experts (Lesikin, 2001, p. 280). The grammar class was taught by me twice a week. Besides grammar, they took reading and speaking classes taught by other teachers twice a week respectively.

3.2 Procedure

The first survey was given to explore students' initial perception about the inductive and deductive approaches at the beginning of this research. Before the pilot study, the students

in both groups took a common grammar test. Preliminary analysis was conducted in order to assess the possible variability in grammar knowledge between the students in Group 1 and Group 2. The general teaching procedure consisted of two parts: the pilot study and the experiment (Table 1). In the pilot study students in Group 1 learned grammar in the deductive approach; Group 2 learned in the inductive approach. After a week, the post test was administered. The experiment was conducted by switching the two groups; the deductive approach Group 2 and the inductive Group 1. Three identical grammar tests were administered one week before and one week after and one month after the experiment. The final survey was given in order to examine how students' perception about the inductive and deductive approaches had changed by the end of the research.

Table 1. Teaching procedure

| Pilot Study | Deductive (Group 1) | Post test (after a week) | |
| | Inductive (Group 2) | | |

↓

| Pre-test (a week before) | The experiment | Deductive (Group 2) | Post-test (after a week) | Delayed Post-test (after a month) |
| | | Inductive (Group 1) | | |

3.2.1 Preliminary analysis

The students in both groups took a grammar test in order to assess the possible variability in grammar knowledge between groups. This examination consisted of 50-60 questions concerning the target grammar items they had learnt in previous lessons. The total mean score (out of 100) of students in each group was calculated and compared (see Table 2). Furthermore a t-test was performed to determine if there were any statistically significant differences in the test between groups.

Table 2. Grammar test results

(N = 161)

Group	mean score	S.D	skewness	kurtosis	number
Group 1	71.289	16.359	−0.676	2.779	83
Group 2	71.025	16.899	−0.630	2.531	78

$p > 0.05$

The result of the t-test indicated that there was no statistically significant difference for students' performances on this test (t=0.0992, p=0.921> 0.05). This means the students in Group 1 and Group 2 had no significant variability in grammar knowledge before starting the pilot study.

3.2.2 The Pilot Study

For the pilot study, the target grammar item chosen was simple future, *be going to* and *will*. The students were expected to distinguish to use *be going to* and *will* in the context. The lesson was preceded as follows (Table 3):

Table 3: Lesson Procedure in the pilot study

	Deductive	Inductive
Step 1.	The semantic difference between *be going to* and *will* was explained explicitly presenting example sentences.	The example sentences were presented first, and students were encouraged to figure out the difference in a pair.
Step 2.	Students of both groups practice questions in the text (*Grammar in Use*, 2000, p. 45).	
Step 3.	Students of both groups were given a certain situation and asked to produce sentences while paying attention to the difference between *be going to* and *will*.	

This procedure took two lessons in a week. The inductive group took longer time in Step 1, whilst practicing questions was conducted more quickly than the deductive group.

3.2.3 The Experiment

The experiment was conducted by switching the two groups. For the experiment, the target grammar item chosen was verbs followed by *to-infinitive* and *gerund*. In the pilot study, a handout was not given, and it was difficult to confirm that each student realized the semantic difference between *will* and *be going to*. To improve this, the handout (Appendix 1) was provided to the students in the experiment. Thirteen out of the sixteen sentences were taken from the students' reading textbook "*Client*" (Grisham, 2000). They had already finished reading the textbook and seen the sentences in a meaningful context. The lesson was preceded as follows (Table 4):

Table 4: Lesson Procedure in the experiment

	Deductive	Inductive
Step 1.	From the beginning the teacher divided verbs into two categories depending on the verbs followed by *to-infinitive* and *gerund*. The teacher explained the time sequence between the main verb and verbs followed by *to-infinitive* and *gerund*.	The example sentences were presented in a handout. Students were asked to divide the verbs into two categories in a pair or a small group. Then they were asked to focus on the time sequence between the main verb and the subordinate verbs.
Step 2.	Students practiced questions in the text (*Grammar in Use*, 2000, p.101, p.103).	Students were asked to produce sentences while paying attention to the difference between the verbs followed by *to- infinitive* and *gerund*.
Step 3.	Students were asked to produce sentences while paying attention to the difference between the verbs followed by *to-infinitive* and *gerund*.	Students practiced questions in the text (*Grammar in Use*, 2000, p.101, p.103).

In the experiment, the inductive group produced sentences using the verbs before practicing questions so that the inductive group students could apply the verbs in their writing.

3.3 Data Collection

Besides grammar tests, two surveys were administered at the beginning and end of the research. The first survey (Appendix 2) administered was a modified version of a survey found in Lightbown and Spada (1999, xv). Four-point Likert scale questions were used. Students were asked to indicate whether they *strongly agree*, *agree*, *disagree*, *or strongly disagree* with each statement. Each response was then given a score from 5 (*strongly agree*) to 1 (*strongly disagree*). Neutral response (3) was not included. The number of students giving each response was counted and the mean score calculated. This indicated the average extent to which the students agreed with the statement. The surveys were all written in English, but Japanese translation and explanation were given to avoid misunderstanding. The final survey (Appendix 3) was administered in the same way as the first one using four-point Likert scale questions, which consisted of both closed- and open-ended questions, and invited students to evaluate the deductive and inductive approaches in their own words.

4. RESULTS

4.1 Grammar tests

4.1.1 The Pilot Study

A post-test was conducted in the pilot study. The measure contained 10 multiple-choice items and the possible scores ranged from 0 to 10 points (Appendix 4). The total mean score for both groups was   calculated and compared (Table 5).

Table 5. Post-test results

(N = 156)

Group	mean score	S.D	skewness	kurtosis	number
Group 1	5.561	1.475	−0.406	0.416	81
Group 2	5.237	1.64	−0.206	−0.567	75

p > 0.05

A statistical analysis using the t-test showed no significant difference in the post-test between Group 1 and Group 2.

4.1.2 The Experiment

Three sets of identical grammar test (pre-test, post-test, delayed post-test) were conducted in the experiment. The verbs which could be followed by both *to-infinitive* and *gerund* (e.g. begin, start, hate, continue) were intentionally excluded from the test item. The measure contained 12 multiple choice questions and possible test scores ranged from 0 to 12 points (Appendix 5). The total mean score for both groups was calculated and compared. The results of each test are shown in Table 6 and summarized in Table 7 and Figure 1.

Table 6. Pre-test results

(N = 156)

Group	mean score	S.D	skewness	kurtosis	number
Group 1	8.27	1.475	−0.406	0.416	81
Group 2	8.17	1.64	−0.206	−0.567	75

Table 6. Post-test results

(N = 156)

Group	mean score	S.D	skewness	kurtosis	number
Group 1	9.29	1.475	−0.406	0.416	81
Group 2	9.77	1.64	−0.206	−0.567	75

Table 6. Delayed post-test results

(N = 156)

Group	mean score	S.D	skewness	kurtosis	number
Group 1	9.36	1.475	−0.406	0.416	81
Group 2	9.57	1.64	−0.206	−0.567	75

Table 7. Summary of results

(N = 156)

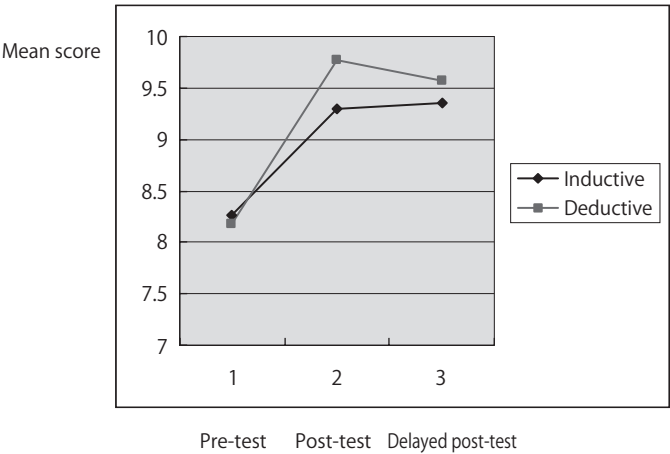| Group	Deductive (Group 2) Mean	Inductive (Group 1) Mean	t-value	p-value
Pre-test	8.17	8.27	0.590	0.555
Post-test	9.77	9.29	-0.951	0.342
Delayed post-test	9.57	9.36	0.391	0.696

$p > 0.05$

Figure 1.

As can be seen in Figure 1, the test scores from the deductive and the inductive approaches to teaching grammar were comparable. Statistical analyses using the t-test and a Welch-test indicated clearly that there was no significant difference between Group 1 and Group 2 in the pre-test, post-test and delayed post-test.

4.2 The Surveys

4.2.1 Quantitative Analysis

In the first and the final surveys, responses to the questions concerning the deductive and the inductive approaches were calculated to obtain an overall mean. Questions for each student were calculated based on the four scale statements concerning the deductive and the inductive approach by students in Group 1 and 2, and were added separately to obtain an aggregate score for each approach. These were divided by the number of students and averaged to attain a mean response. A t-test was also performed to determine if there were statistically significant differences between responses. The mean scores supporting the deductive (Q1) and inductive approach (Q2) in the first survey and those of the deductive (Q1) and the inductive approach (Q2) in the final survey were compared (Table 8).

Table 8: A Comparison of Deductive and Inductive Approaches in the first and the final survey

Questions	Mean	%
Q1. Deductive		
First survey		
Teachers should present grammatical rules first.	3.96	76.6
Final survey		
I prefer teacher presents grammatical points and rules first.	3.93	86.0
Q2. Inductive		
First survey		
Learners should discover the grammatical rules by themselves.	2.60	32.3
Final survey		
I like to discover the grammatical rules by ourselves.	3.23	61.3

The first survey N= 158   The final survey N= 150

The subjects of the questions in the first and the final surveys were different, because the students had experienced the inductive approach. In order to respect the identity of learners, the subject "I" was used. The mean score (3.96) to Q1 in the first survey demonstrates that

students preferred the deductive approach to the inductive approach at the beginning of this project. The mean score (2.60) to Q2 in the first survey indicates that the number of students who supported the inductive approach was lower than that of the neutral score (3.0). While conducting the survey, several students asked what the teaching style meant. In in-class discussion and teacher observation, it was clear that the majority of the students were not familiar with the inductive approach. The difference in mean score between the deductive and the inductive narrowed, from 1.36 in the first survey to 0.7 in the final survey. The mean score concerning the deductive stayed almost the same, 3.96 in the first survey to 3.93 in the final survey. However, the mean score concerning the inductive approach increased from 2.60 in the first survey to 3.23 in the final survey. Figure 2 presents an overview of the mean scores of the deductive and inductive approaches in the first and final surveys.
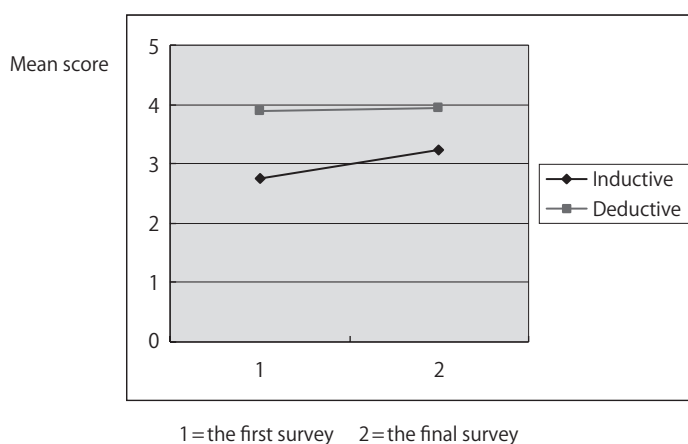

1=the first survey   2=the final survey

Figure 2. Mean scores of the deductive and the inductive in first and final survey

The results of a Welch-test indicated no significant increase in the mean scores of the deductive group between the first and final survey (p-value= 0.165 > 0.05), while there was a significant increase in the mean scores of the inductive between the first and final survey (***p-value= 0.0000218 < 0.05). The score indicated that the number of the students who supported the inductive approach increased significantly, but was still lower than that of the deductive approach.

4.2.2 Qualitative Analysis

The students' view of both approaches was revealed in more detail in their responses to the two open-ended questions. Firstly, the students' positive feedback towards the inductive approach is given. The most common responses given by the students who supported the inductive approach were that they enjoyed learning inductively rather than being instructed by a teacher. Examples of such comments included:

> Learning the rule in a group was interesting and I enjoyed it.
> The learning was fresh and I want to try it again.

These positive comments coincide with Littlejohn's (1985, p. 254) view that one positive outcome of autonomous learning is that learners have an increased interest in learning. Group work was seen by students to be a strong point of the inductive approach. A number of students liked the opportunity to work with peers. Examples of such comments included:

> Group work enhanced understanding grammar.
> We could share opinions and try to complete the task together.

Another positive feature of the inductive approach was more active participation. One of the main principles of learner autonomy is "playing an active role in learning" (Lee, 1998, p. 282). The following comments indicated that learning in the inductive approach contributed to enhancing students' involvement in learning:

> We could be involved in learning process and learn the strategy.
> I was able to participate in a lesson better.

These positive comments back up the increase of the mean score (+0.63) of the inductive approach in the final survey. On the other hand, the mean score (3.93) of the deductive approach was still slightly higher than that of the inductive approach (3.23). Some students who kept positive attitudes towards the deductive approach seemed to hold the perception that a teacher is one who transmits the knowledge. This can be seen in the following remarks by students:

We can not learn grammar unless the teacher instructs.

Unless teacher teaches us, we can not get what we do not know.

In the next set of comments, some students indicated that they learned to choose different approaches depending on the grammar items being learnt.

Depending on the grammar item, discovering work helps us understand the rule.

Learning simple grammar items is suitable for the inductive approach as it does not include complex structures.

When grammatical points are complicated, I prefer teacher's instruction, but sometimes we should discover grammatical points through our discussion.

Some students pointed out that learning a simple grammar item which does not include complex structures was suitable for the inductive approach. They proposed to incorporate a variety of approaches depending on the grammar item.

5. DISCUSSION

The hypothesis that students learn grammar more effectively when they actively participate in the lesson was not supported by the results of this research. The positive effect for the students who learned under the inductive approach did not appear in the results of the three grammar tests. There are arguably two reasons why the results were not in accordance with the hypothesis. Firstly, the selection of target grammar items was not appropriate or not suitable for teaching in the inductive approach. In the pilot study, the simple future *will* and *be going to* were selected and discovery work was focused on the distinction of using them in the context. These two items were defined as *will* for spontaneous decisions and *be going to* for premeditated decision. In Japanese translation, there is no clear semantic difference, nor is there in English in some cases. For the experiment, the grammar item chosen was verbs followed by *to-infinitive* and *gerund*. The discovery work was focused on the distinction of time sequence between the main verb and the subordinate verb. In Japanese verb orientation, the main verb is always followed by the subordinate verb in the same form and there is no distinction. Therefore, in both the pilot study and the experiment, such a distinction might

have been perceived as being insignificant in the target language (TL) for the Japanese students whose L1 does not make a clear semantic difference between the two. To conclude this first point, insignificant distinction between the meanings of structures in students' L1 tends to be treated as insignificant when students learn the equivalent structures in TL. Contrastive analysis (CA) should be taken more into consideration when choosing grammar items to use in the inductive approach. Further study is needed to determine whether different choices of grammar item produce different results.

Secondly, the lessons proceeded in accordance with the 3Ps, and only the presentation stage was conducted differently; deductively and inductively. In the practice and production stages, students in both groups did drills and produced the sentences traditionally with teacher-centered instruction. In these stages, students did not play an active role in the learning process. The results of this research indicated that there was no significant difference in the grammar test scores even when the teacher took different approaches in the first presentation stage. In future research, the two later stages need to be modified gradually so that the learners can take more initiative in practice and production as well. In the learner-centered classroom, the responsibility for learning is transferred to the students from the teacher. As Dickinson (1987) points out, the shift from a teacher-centered classroom to a learner-centered one should be taken gradually and carefully in the experimental design in the future research.

The limitations of this research include the small number of students with the same language level and at the same age in one private high school. Another weakness is that participants were not randomly selected. Harmer (2001) states that only a certain type of learner benefits from the inductive approach and Celce-Murcia (1988) points out analytic learners are suitable for the inductive approach. Further study is required to investigate the kinds of learners that are the most suited to the inductive approach to teaching grammar. It is also necessary to determine which factors influence the results and to what degree. The age factor of the participants needs to be properly considered either as a reason for the partial failure of the hypothesis or as a possible reason for the results reported here. Another limitation of this research is that students in both groups have experienced the inductive approach only once. It is necessary to implement the both the inductive and deductive approaches over a longer period and compare the result of effectiveness in the long term.

6. CONCLUSION AND IMPLICATIONS

The hypothesis was not clearly proved by the results of grammar tests; however the test results showed that both the inductive and deductive approaches were effective for the students to study grammar. Moreover, the analysis of pre- and post-survey revealed that the favoring rating for the inductive approach significantly increased. The students might have become more open to the idea that both the inductive and deductive approaches were useful. Furthermore, students' comments indicated that they were able to be involved in the learning process more actively, which is one of the prominent aspects of learner autonomy. The results of this study also suggest that a combination of external assessment (test scores) and internal assessment (survey and surveys) provides an effective means of investigating the deductive and inductive approaches to teaching grammar and of the evaluation of the promotion of learner autonomy. Further research is required to compare the two kinds of data and find correlations between them.

The findings of this research suggest the possibility of involving learners in the decision-making process. This not only develops learner autonomy, but also improves teaching practice. Some students in this research commented that "Simple grammar items are suitable for the inductive approach. However, this approach is not suitable for complex structures." Learner perceptions such as these, expressed through experiencing the inductive lesson provide an interesting insight into the learning of grammar. The choice of learning style is one that can be negotiated and developed by the teacher and learners together, which is likely to inform a new way of teaching and learning language. Students can indicate their preference as to which grammatical items are suitable for the inductive approach, and which they feel are more suited to the deductive approach. Teachers can then refer and apply students' choices to their teaching practice. Learner choice is one of the key elements in developing learner autonomy. Integrating the promotion of learner autonomy into grammar teaching might shed a little light on a number of questions in SLA research. Grammar teaching and learner autonomy are still not considered to be linked by many teachers. However, the results of this research suggest that grammar teaching and learner autonomy can be combined and that doing this can bring about improvement in both areas. Furthermore, the promotion of learner autonomy should not be confined to grammar teaching, but rather applied in a wide range of language learning contexts. The image held by some teachers that the deductive approach is teacher-centered, whilst the inductive approach is learner-centered, may be an oversimplification. It would be

possible for the deductive approach to be learner-centered if it reflects students' perceptions and meets their expectations. Similarly, the inductive approach could be teacher-centered if the teacher imposes a learning style on students without sufficient consideration of their previous learning experience or their needs in terms of learner development. Further research should focus on investigating the relationship between students' preferred learning styles and improvement in their proficiency level. There should be a particular emphasis on weak learners, as observations for this study showed these students to be especially interested in new kinds of lessons. These students were also likely to be the ones who have yet to discover their most effective learning strategy. Therefore, by making them reflect on their own learning through not only tests, but also surveys, it is hoped that they will become better learners.

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Appendix 1: Handout for the experiment

Grammar in use ⎡Unit 50.51⎤

1. Devide the verbs into two categories and find the common rule.

1. "Mark, please, let's go," said Ricky, and <u>began</u> to cry.   P3
2. Mark took the bottle and <u>pretended</u> to drink.   P3
3. Now he <u>wants</u> to kill me because I know about the body.   P4
4. He <u>hates</u> flying, so his car was fitted with…..   p9
5. He <u>hopes</u> to arrive in Memphis by midnight.   P9
6. He <u>spent</u> many pleasant moments watching video of himself.   P12
7. Greenway <u>continued</u> touching and talking.   P15
8. Greenway looked at Ricky and <u>decided</u> to tell the truth.   P17
9. She had <u>started</u> drinking heavily and taking drugs.   P36
10. The hospital <u>promised</u> to keep guards at the door.   P39
11. I've <u>agreed</u> to see him in court this afternoon.   P43
12. I will <u>ask</u> the guard to bring him here to see you now.   P43
13. ….when he again <u>refused</u> to answer the judge's question.   P50
14. We <u>enjoyed</u> talking with you.
15. They <u>finished</u> cleaning the room.
16. The doctor <u>advised</u> me to take a rest.

No.1-13 from "*The Client*" Penguin Readers

Common rule	Common rule

Appendix 2: The first survey sheet

<u>Background Survey</u>

1) Teachers should present grammatical rules first, and the learners should then practice examples to help them learn the rules.

Strongly agree	Agree	Disagree	Strongly disagree

2) Learners should discover the grammatical rules for and by themselves using the samples presented by teachers.

Strongly agree	Agree	Disagree	Strongly disagree

3) The most important factor in second language acquisition success is learners' motivation.

Strongly agree	Agree	Disagree	Strongly disagree

4) Teachers should lecture rather than allow learners to interact with each other.

Strongly agree	Agree	Disagree	Strongly disagree

5) When learners are allowed to interact freely (for example in groups or pair activity), they learn effectively from each other.

Strongly agree	Agree	Disagree	Strongly disagree

6) Learning grammar is useful for writing.

Strongly agree	Agree	Disagree	Strongly disagree

Appendix 3: The final survey sheet

<u>The Final Survey</u>

1) I prefer teacher presents grammatical points and rules at first.

Strongly agree	Agree	Disagree	Strongly disagree

Please write the specific reason why you think so;

2) I like to discover some rules or concepts through a task in pairs or a group before teacher summarizes them.

Strongly agree	Agree	Disagree	Strongly disagree

Please write the specific reason why you think so;

Please write freely about this grammar class.

*Thank you very much!

Appendix 4: Post-test in Pilot study

Choose the correct form.   (10 pts.)

1) A: Hello. May I speak to Alice?

   B: Just a minute. I (am going to/ will) get her.

2) A: Why are you bringing a brush and the paints?

   B: I (am going to/ will) paint my room.

3) A: Oh, I just realized that I forgot my dictionary.

   B: Don't worry. I (am going to/ will) lend my electric dictionary.

4) A: Do you need a ride to the station?

   B: No, thanks. Paul (is going to/ will) take me.

5) A: My car has broken down and I need a ride to my office tomorrow.

   B: No problem. I (are going to/ will) pick you up in the morning.

6) A: Are you going on a trip this summer?

   B: My wife has arranged everything. We (are going / will go) to Australia to ski.

7) A: We need the reserved tickets for a movie tonight.

   B: I didn't know that. OK, I (am going to/ will) get the tickets at Ticket Pino this afternoon.

8) Her parents have changed their minds. They (are not going to/ won't) get divorced.

9) A: Do you know Annie is engaged?

   B: No. Really? I (am going to/ will) call her and celebrate it tonight.

10) A: Can I stay with you next Monday?

    B: Sorry, I can't put you up on the day. One of my friends (is coming/ will come) from New York on the night.

/10

Appendix 5: Pre-test, Post-test, and Delayed post-test in the Experiment

Choose the correct form.   (12pts.)

  1. I enjoyed (swim/ to swim/ swimming) in the pool.

  2. I hope (see/ to see/ seeing) you very soon.

  3. He refuses (speak/ to speak/ speaking) to the police.

  4. They agreed (see/ to see/ seeing) him in the court.

  5. She has finished (do/ to do/ doing) her homework.

  6. My teacher advised me (go/ to go/ going) study abroad.

  7. I want (buy/ to buy/ buying) the new sport car.

  8. She pretended (drink/ to drink/ drinking) beer.

  9. She decided (tell/ to tell/ telling) the truth.

10. They promised (keep/ to keep/ keeping) the guards at the door.

11. We spent an hour (eat/ to eat/ eating) dinner.

12. I will ask the guard (bring/ to bring/ bringing) her here.

/12