

POWER POINT PRESENTATION AND IRANIAN HIGH SCHOOL EFL LEARNERS' GRAMMATICAL KNOWLEDGE AND INTEREST

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Abstract:

The influence of visual technology in teaching has proved to be undeniable in recent years. Hence, this study aimed to determine the effect of presenting grammar through PowerPoint on Iranian second grade high school EFL students' grammatical knowledge and interest. To this end, 32 male students participated in 10 sessions of the treatment as the experimental group and were taught with PowerPoint, while the other 32 students in control group were taught in conventional ways. Both groups received an immediate post test administered immediately after the treatment. The results showed that the use of PowerPoint could improve grammatical knowledge and interest of EFL learners. The results of interview also suggested that PowerPoint presentation can enhance learning because it includes facilities that are not available in ordinary teaching. The study indicated, however, teachers and students may need to acquire special skills to benefit from all the facilities of multi-media contain.

Key words: PowerPoint, CALL, EFL learners.

1. Introduction

The use of technologies especially power points has increasingly become a common feature of classroom (Doughty, 2003). There is no doubt in future computer plays a central role in classes but some teachers especially EFL teachers are still reluctant to use this technology because of not accepting its importance in comparison with the textbooks ,because of having no facilities, motivation and the like (Harley&Swain,1984; Swain, 1985,1989). Research on using PowerPoint in high school education is even more limited (Swain, 1993). In this age of computers, the highlighting of forms can be effectively achieved by the use of relatively easy-to-use technologies. For instance, language teachers increasingly use PowerPoint presentations (PPTs) for teaching grammar.

Color coding, bolding, font manipulation, underlining, animation schemes, and custom animation all serve to make grammatical rules more salient. On the other hand, some teachers are not readily convinced of the superiority of these technological applications over the use of the traditional blackboard. No evidence so far has shown the advantage of one instructional tool over

the other. As observed by some researchers (Garrett, 1991; Ervin, 1993; Chapelle, 1997), empirical research within the field of computer assisted-language learning (CALL) into the effectiveness of new technologies in promoting language acquisition is still very much needed, similarly, students' beliefs and perceptions of the effectiveness of Power Points to help them acquire these rules have not so far been examined.

The purpose of this study was to examine the effect of PowerPoint (PPT) presentation by instructors on learning grammar and interest. In other words, the primary objective of this empirical study is to determine the effectiveness of using PowerPoint in teaching grammar in the classroom in comparison with the traditional ones such as blackboard and texts and wants to see whether using this learning tools facilitate students learning or not. The secondary objective of this study was to investigate students' interests. Below research questions are in line with the objectives of this study.

1. Does PowerPoint presentation significantly improve Iranian high school EFL students' grammar knowledge?
2. Does PowerPoint presentation significantly improve Iranian high school EFL students' interest?
3. What are the Iranian high school EFL students' attitudes towards the effectiveness of PowerPoint use in teaching grammar?

As a result, the following null hypotheses are formed for this study:

1. PowerPoint presentation does not significantly improve Iranian high school students' grammar knowledge.
2. PowerPoint presentation does not significantly improve Iranian high school students' interest.

The result of this study can be fruitful for all students and teachers who are eager to enhance their classroom abilities and knowledge, moreover, this paper looks to examine how teachers can teach in a more effective manner with power point to ensure not only interest in the lessons, but also engage students in an active grammatical learning and consequently enhances their grammatical learning. To be short, power point appears to promote not only learning in a cost effective and modern manner, but also their interest toward learning as a whole.

2. Literature Review

2.1 Grammar

Persian (Farsi) is the first language of Iranian people that is widely used in offices, schools, streets and everyday life while English is considered as a foreign language in this country. Iranian students study English for seven consecutive years which is divided in to two sections: Rahnamaei (literally means, guidance or secondary) for three years and Dabirestan (means high school) for four years. However, the quality of English teaching in schools is not satisfactory and the majority of students participate English courses in private institutes to obtain better results in English fluency and proficiency (Mehrabi, 2010).

In order to understand a language and to express oneself correctly, one must assimilate the grammar mechanism of the language that he/she studies. Indeed, one may know all the words in a sentence and yet fail to decipher the intended meaning which is due to the fact that he/she could not find any relationship between the words in the given sentence (Shortall , 1996, p.38). On the other side of the coin, a sentence may have more than one unknown word but a reader with a good command of language structures can easily guess the meaning of unfamiliar words or at least search them in a dictionary (VanPatten, 1993, p. 436). Roberts (1954) believes that grammar consists language and when you speak English it means that you possess a tool with which you can make complicated sentences (Roberts, 1954) . Moreover, Nassaji and Fotos (2011) indicate that grammar is the core of the language and without grammar there won't be any language.

The importance of teaching grammar has been obvious from the early days of teaching English language till now. As a result, a good command of English cannot be ensured without grammar courses in school syllabus and the pupils need grammar to be able to listen, speak, read, and write in the target language (Brumfit , 1979).

2.2 Interest due to technology-based teaching

Interest has been described as “being functionally important, for motivating interaction and learning, as a mechanism of selective attention that keeps the creatures’ attention focused on a particular object, person or situation”(Breazeal & Brooks, 2005, p. 2). With respect to the increased interest via technology-based instruction, Kulik (1994) devoted more than one decade’s work on the value of the instructional tool. To this end, Kulik did a meta-analysis that enabled him to gather results that were linked to the issue of technology-based instruction. His findings, gathered by separate research teams implementing several methods and focused on the application of a number of computers in diverse demographics. From his studies, Kulik reached two important conclusions: first, learners who participate in computer-based instruction usually gain more knowledge in a shorter time span, second the learners enjoy more from instruction via technology (computer) and build positive attitudes when learning in computer-based environments. another empirical study shows technology's role in educational reform and supports constructivist teaching in schoolrooms (Coley , 1997).The positive effects of implementing computers in to language classrooms showed improved motivation , significant development in academic performance, significant drop in instructor turnover, improvement in learner attendance, and increased standardized test scores over the control set of students.

2.2 Power- Point and its benefits

The debate over the impact of technology on pedagogy is not a new topic in language teaching. Frey and Birnbaum (2002) acknowledged that PowerPoint is considered the first step for teachers who aim to introduce ICT into the university lecture. In their study, Frey and Birnbaum surveyed 160 students to get acquainted with their views toward PowerPoint and the value they give in using it as an instructional tool. Although the results were overwhelmingly positive, Frey and Birnbaum concluded that more research should be done to explore successful strategies for using presentation software to achieve course goals. A good example of the implementation of power point in to classroom is Bartsch and Cobern (2003). To shed more light on the effectiveness of using Power Points in classroom, they surveyed 66 participants (both male and female). The empirical study showed greater preference for using Power Point, but the quizzes showed worse performance on the slides containing pictures or sounds. Another phase of this study, surveyed the difference of relevant and appropriate pictures and sound with the impertinent ones. The results showed that the irrelevant pictures and sound effects minimized the effect of Power Point in learning materials and leded in to worse results in recall and recognition tasks. Generally, they concluded that Power Point is has a beneficial effect but the utilization of impertinent material in it has debilitating effect for learning.

When it comes to the limitations of the Power Point, Apple 1992 demonstrates that the proponents of PowerPoint are presenters, not audience members and this is due to their ease of instruction. Likewise, Tufte`s examples of ineffective Power Point presentations all relate to inappropriate, impertinent uses of the software, such as relying too much on fixed templates, limiting the type of material presented on slides, and compromising the content to fit presentation patterns. Moreover, Tufte (2003) criticizes PowerPoint for its limited space per slide, the replacement of every unconnected piece of knowledge to bullet points, low-resolution, restrictive

templates, and promotion of intellectual simplicity. Tufte is not the only one who condemns Power Point.

Today, the role of the power point in every day presentations is unavoidable (Levasseur & Kanan Sawyer, 2005) but few researchers have assessed the influence of PowerPoint technology on students' knowledge acquisition and engagement towards ESL acquisition analytically (Nouri & Shahid, 2008). Nouri and Shahid (2005) found the influence of multimedia presentations on learners' preferred class representation style. The result of their study is significant to instructors because it shows that integrating PowerPoint technology can be advantageous for students. Incompatible with the obtained results from the Butler and Mautz study, another study by Nouri and Shahid (2008) indicated no interaction between learners' favorite instructional style and test scores. Moreover, Nouri and Shahid's analysis showed consistent results with those of Butler and Mautz (1996) on the topic of attitude towards subject matter: both studies developed views that there are more positive attitudes toward the instructor and the concept taught when the instructors included PowerPoint technology in their instruction.

From the theoretical point of view, cognitive theory indicates that instruction is most effective when learners' preferred learning styles are in line with the features of the technology employed during instruction (Pagan -Melendez, 2011). As an example, Adsit (2010), tried to discover some strategies for instructors employing technology. In his study, he found visual information help some people to learn and remember better while verbal manner is more effective for others. Renou (2004) believes that exploring the correlation between multimedia and learning, the researchers and technology specialists need to identify deeply the interaction between instructors and the learners' cognitive processes.

Generally, Craig and Amernic (2006) believe that Power Point is really effective in higher education and Levasseur and Kanan Sawyer (2006) likens a business presentation without Power Point to a movie without sound. Thus, from the abovementioned points of view, it seems that the positive role of Power Point is undeniable. But the application of Power Point in to business and pedagogy does not minimize its cultural effects. Below we will discuss Power Point as a cultural phenomenon.

3. Methodology

3.1 Participants

Through stratified sampling, a total of 64 second-grade high school students ranging in age from 15-18 participated in this study. The entire student population in the study shared Persian as a common native language. Although the participants were homogeneous in terms of their common experience in English learning, none of them had the experience of studying English in institutes or in private classes, nor had they any contact with any native English speakers. With regard to nationality and language background, no difference existed between the subjects and all of the subjects were male. As the study was done in the second semester, the focus of our study is on the second half of the English high school books. (Including book 2).

First of all the students were given a language proficiency test (The CAMLA English placement Test) with 80 multiple choice items in order to determine their level of general English proficiency. Based on this proficiency test, out of sixty-four students, only fifty-eight were selected. Their scores were two standard deviations and below the mean were selected, their scores ranged from 20 to 30 which indicated that they were lower intermediate learners.

3.2 Design

Since it was not possible for the researcher to assign participants randomly, the design of the present study is quasi-experimental which provided as much control as possible under the existing situation. The independent variable of this study was the mood of grammatical instruction in traditional and PowerPoint teaching conditions, and dependent variable was students' achievement scores on a grammatical test; immediate posttest. In order to maximize the validity of the study, the researcher made the arrangements with authorities, so some other variables including light, temperature, noise, environment and time of day were controlled. The method used for assessment grammar acquisition was the multiple choice method.

Selection of the nonequivalent groups occurred through convenience rather than random sampling because choosing learners in a school setting at random and placing them in specific groups would be difficult. A convenience sample is ideal for a school or higher education institution setting. In the current study, a convenience sample of high school students enrolled in second year was appropriate to generalize the results. A post-test is used to examine differences between the treated and untreated groups after the technology treatment occurred.

3.4 Instruments

3.4.1 Grammar Test

The instruments used in this study were a test designed on the basis of students' English Textbooks in grade two of high school. The test was compromised of 30 multiple choice item grammar tests. All the items in this part and the other were related to (The used, not used- WH questions- self pronouns- Conditional sentences type I and II). This grammatical test consisted of five distinct sub-parts within six multiple choice item tests in each part.

Table 3.2

Test questions' features

Category	Number
THE used-not used	6
WH Question	6
Self-pronouns	6
Conditional sentences type I	6
Conditional sentences type II	6
Totals	30

In the pilot phase of the study the test was tried out with students of the second grade of Sarbedaran high school in Sabzevar. Based on this pilot study, the reliability of the test was estimated through KR-21 formula. The reliability coefficient arrived was %83 which was satisfactory for the research purpose. As for the validity of the test the following arguments are relevant: First the test fulfilled the requirements of content validity which is the most important type of validity for attainment test. Second, the test was valid as far as face validity was concerned. In view to the fact that multiple choice type tests are frequently utilized at high school levels to examine student' production of grammatical constructions, it was assumed that the subjects had come to accept them as proper

production tests. Third, Dr. Farhadi's test for high school students was taken as the validity criteria for the research test. The correlation between these two tests was %78.

The content of the test was also justified by briefly describing the research project before the actual administration of the test. In other words, the format and content of the test were suitable from the subjects' view. The validity of the test was further improved by pilot study, in which 30 students similar to subjects under study participated.

To accomplish the purposes of the study 64 students from a public high school in Sadkharve who were considered as lower-intermediate based on Cambridge Michigan Test, participated in this study. The first group (n=32) was taught with PowerPoint presentation and the other (n=32) were assigned as the traditional group. After the pretest, to answer the first research question, both groups received the treatments and immediate posttest. To answer the second research question, an interest questionnaire was developed to elicit students' overall impressions of learning grammar via PPT. Moreover; participants were asked to provide open-ended comments in the form of interview.

To obtain the desired results, reliability of pretest was calculated by Kuder-Richardson formula²¹ and indicated 0.82 of reliability. Since this index is large enough and it is near to one, it can be accepted.

3.4.2 Interview

Since the researcher wanted to observe the students' attitudes and interests dealing with Power Point Presentations, 10 participants were asked to provide open-ended comments in the form of semi-structured interview.

3.4.3 Interest Questionnaire

In order to find out more about how students feel about the English class and their interests provided a questionnaire delivered to them which was originally developed by Yilmazel -Sahin (2007). However, some of the items were quite unrelated to the participants of this study, so they were discarded and a modified one was produced. The final modified interest questionnaire had 11 items on a 5 point Likert scale. The questionnaire statements were divided into five sections: (1), strongly disagree (2), Disagree (3), Neutral (4), Agree (5), and (6) strongly agree. To ensure the validity of the questionnaire, it was given to some experts in the field so that any point of discrepancy would be discussed and modified. The questionnaire can, therefore, be said to benefit from content and face validity as the experts approved it. The experts were two PhD holders at the English department of Hakim Sabzevari University. Points of discrepancy were discussed and the final version received approval. To calculate the reliability of the interest questionnaire, it was piloted to 30 students at public high school. Cronbach's alpha coefficient was 0.82 which indicates the reliability of the question. Finally the questionnaire was translated in to Persian so that the students would understand it better.

3.5 Data Collection Procedure

Before the test was administered, two measures were taken to minimize the effect of difference in exposure, if any, among the students. First the students were all selected from the classes of the same school, so that in previous year, they had had the same teacher for their English courses. In this way, the effect of different methodology used by teachers was also diminished. Secondly more review sessions were held. In each session one of the grammatical points was reviewed, ten sessions for five grammatical points.

The experimental procedures consisted of three stages: Pretest, Treatment and Posttest. A post-session Interest questionnaire was also developed to elicit participants' beliefs on PowerPoint

use. Prior to the treatment, the pretest was administered. Having completed the pretest stage, the participants in both groups received the treatment in ten sessions, so each grammatical point was taught in each session. The first group was taught with the same traditional method as was done before and the second group was taught with the use and help of PowerPoint slides. To collect more valid data, the experimental participants were also interviewed orally. After eight sessions of the treatment, the participants in both groups received an immediate posttest. The test was in multiple choice formats consisting of thirty items to be answered in 30 minutes under the supervision of a teacher.

3.6 Data Analysis Procedure

The quantitative data were analyzed using the statistical package for the social science (SPSS, version 17.0). For all the analysis the alpha level was set at .05. The mean and standard deviation of each individual test was first calculated. Then an independent t-test was run to see if the two groups performed significantly different on immediate posttest or not. At the next level the overall performance of two groups on delayed posttests was compared using t-test to see which method results in a more fruitful and longer retention of grammatical points.

4. Results and Discussion

4.2 Grammar Pretest Results

Table 4.1 shows the statistical description of the *grammar* pretest.

Table 4.1

Descriptive Statistics for Pretest Results on Grammar Test

Group	N	Mean	Std. Deviation
X	32	17.25	2.045
C	32	16.58	2.872

Based on the results illustrated in Table 4.1 the mean scores of experimental and control groups are 17.25 and 16.58 respectively. It shows a negligible difference between the two groups prior to the treatment. However, to determine if there is a significant difference between the two groups, a t-test procedure was also used as shown in table 4.2.

Table 4.2

Independent Samples T-Test for Pretest

Pretest Difference	Paired Difference	t	df.	Sig.(2tailed)	
	mean	Std. Error	1.957	29	.060
	Std. Deviation	Std. Error	1.957	29	.060
PPT.-T	2.34	4.360	1.058		

As table 4.2 shows, there is no significant difference between the groups at the beginning of treatment and they are homogeneous, so the two groups did not differ significantly in their performance on the pretest at .05 level of significance indicating the fact that the two groups were similar before the start of experiment.

4.2.2 Grammar Posttest Results

In order to see whether the treatment given to the PPT group had caused any significant change in this group and to see if the participants in this group had performed significantly different on the immediate posttest another t-test was administered. The results from this statistical t-test are presented in Table 4.3.

Table 4.3

Descriptive Statistics for Immediate Posttest

Group	N	Mean	Std. Deviation
X	29	26.84	2.530
C	29	23.60	2.278

As Table 4.3 indicates, the mean score of immediate posttest in the experimental group is 26.84 while that of control group is 23.60. In order to examine the differences and see whether they were significant, a sample t-test was applied. The results demonstrated in Table 4.3 indicate that the mean difference between experimental and control groups' scores measured at the time of immediate posttest, was significant.

Table 4.4

Independent Samples T-Test for Immediate Posttest

Pretest Difference	Paired Difference		t	df.	Sig.(2tailed)
	mean	Std. Deviation	Std. Error	1.33	29 .029
PPT.-T	3.24	5.680	1.051		

There is, in fact, a mean difference of 3.24 points between the means of two groups. As Table 4.4 shows, the probability value is smaller than the level of significance $p=0.029 < \alpha=0.05, (29)=1.33$). Therefore our null hypothesis stating that there is no relationship between using PowerPoint in class and learning grammar, is rejected.

4.3. Interest Questionnaire Results

Before holding PowerPoint sessions, interest questionnaires were given to both experimental and control group as a pre-test. The results showed that the students tend to answer neutrally to interest questions. Table 4.5 shows their exact percentages for the questionnaire. Table 4.5

Descriptive Results of Interest Questionnaire for pre-test experimental and control group

	Frequency	Percent
Strongly agree	6	10.34
Agree	20	34.48
Neutral	32	55.17
Disagree	0	0
Strongly disagree	0	0
Total	58	100

After PowerPoint sessions were completed, the participants were asked to answer the post-session interest questionnaire which was intended to elicit their interest level toward PPT to answer the second research question.

Table 4.6

Descriptive Results of Interest Questionnaire for post-test experimental group

	Frequency	Percent
Strongly agree	15	25.86
Agree	38	65.51
Neutral	5	8.62
Disagree	0	0
Strongly disagree	0	0
Total	58	100

Fifteen participants (25.86%) indicated they strongly agreed the integrated PowerPoint technology had an engaging ability and 38 participants (65.51%) indicated they agreed, whereas only 8.62% (n =5) felt neutral about learning more with the technology application. In summary, the participants in experimental post-test group indicated PowerPoint as an interesting tool in their learning, while the interest rate for control and group did not change significantly.

4.4 The Results and Analysis of the Interview

Ten students were interviewed about their attitudes towards, and perceptions of current PowerPoint use in their education experience. The two categories reflect students' perceptions and experiences regarding (a) effectiveness of PowerPoint, (b) efficiency of PowerPoint.

Table 4.7
Categories and their sub-categories of students' perceptions

Category	Sub-category
Effectiveness of PowerPoint	On topic, interactive, focused, structured, less ambiguity, ease of use, easier to know teacher expectations, good for taking notes, benefits for visual learners
Efficiency of PowerPoint	Good organization tool, PowerPoint as an outline, PowerPoint as an organizer of ideas, PowerPoint as a guide, PowerPoint as a backup, time saver, access, availability, convenience

Direct quotes have been selected from the individual interviews that are illustrative of the perceptions and experiences of the majority of the students interviewed. Quotes were used as the main tool in the write-up of the results to express the students' perceptions of PowerPoint in their teacher education experiences and to strengthen the results.

The main purpose of this part of the study was to interpret qualitative data obtained from interviews with 10 students about their attitudes towards and perceptions of PowerPoint use in their classes. Content analysis of data generated the following two major categories:

(a) Effectiveness of PowerPoint, and (b) efficiency of PowerPoint.

Table 4.6 presents the categories and related interview excerpts that illustrate students' experiences in their learning with PowerPoint in their teacher education programs.

5. Conclusion

This research study explored students' perceptions of use of PowerPoint in High schools and highlighted the importance of PowerPoint presentations on student learning. The findings showed that students have very positive attitudes, in general, towards the use of PowerPoint with respect to its influence on student learning, organizational features, instructors' overall teaching, and specific aspects of instructors' performance. As a result, this research contributed towards better understanding of students' perceptions of the use of PowerPoint in high schools, and design and development of PowerPoint presentations.

In line with previous research (Atkins-Sayre et al., 1998; Daniels, 1999; Lowry, 1999; Luna & McKenzie, 1997; Sammons, 1995), this study has revealed that, in general, students have positive attitudes about the use of PowerPoint in their classes. Atkins-Sayre et al. (1998) reported that students perceived PowerPoint as a useful cognitive aid to enhancing their grammar understanding. Students in this study also reported that they understand the information better and stay more focused on the content in general. Perhaps this is because instructors use clearer organization and greater structure when they use PowerPoint. Moreover, students did not necessarily feel more interested in the material, but they become more involved with the content or formulate more or better questions to ask when PowerPoint is used because as the qualitative data indicated, the level of student interest, involvement and participation all depend on how the instructors chose to use the medium. If they use PowerPoint in a way that promotes effective and meaningful learning, then students feel more interested in the material and become more involved with the topic in discussion. However, if they use it as a straight-lecturing tool, then there is less interest, involvement and participation. According to quantitative results, in general, students feel more certain about what

they are expected to know when PowerPoint is used.

All in all, students' attitudes were generally quite positive towards PowerPoint, although they did not think this tool was being used to its fullest potential. There were a number of issues that the students explained that all seemed to relate to effectiveness of Power Point. Students indicated positive attitudes because most of them felt that PowerPoint provided an efficient learning environment for them. In line with the literature (Frey & Birnbaum, 2002; Lowry, 1999), students overwhelmingly agreed that PowerPoint had a significant positive impact on organization of the lessons. Students felt that lessons were better organized, easier to understand, and easier to follow when PowerPoint was used. However, responses showed that students had fewer discussions in class when PowerPoint is used. Therefore, as quantitative results show students felt that PowerPoint presentations stole time from teaching.

5.5 Pedagogical Implications

Based on the results of this study, three Pedagogical Implications are offered. First, teachers should rethink their teaching philosophy before designing their PowerPoint presentations because their philosophy seems to be mirrored in how they use PowerPoint. Since technology tools such as PowerPoint amplify instruction, for better or for worse, the quality of instruction with PowerPoint can have a significant positive or negative effect on student perceptions and their learning.

Second, teachers, who use PowerPoint merely to transmit information need to adapt, revise and modify their current use of PowerPoint in a way that increases learning. As this study showed, consciously building in discussions or activities into PowerPoint presentations, providing students opportunities to ask questions, using PowerPoint as an outline, taking advantage of the multimedia capabilities of PowerPoint, and using this tool as a supplement rather than as the sole instruction tool seem to increase meaningful and effective learning, according to students.

Third, teachers may also consider providing their students with PowerPoint slides before class to increase students' engagement but this should be done carefully as students are encouraged not to attend class when they receive complete notes. These opportunities give students incentive to engage with the course material more deeply and increase their preparation for class.

5.6 Limitations and Suggestions for Further Research

This study revealed new issues from its limitations for further investigation. First, the students in this research were only from one high school in Sadkharv- Davarzan. Further research is needed to see whether the current findings hold true for the students from other schools in other parts of the country. Furthermore, this study can be extended beyond high school students into a broader examination of the use of PowerPoint in other educational setting in general.

Second, this study was limited to PowerPoint practices at a high school in Sadkharv- Davarzan, but the issues discussed in this study can certainly extend beyond national boundaries. Studying teaching approaches to PowerPoint in other countries would give a broader picture of how students perceive PowerPoint in their classes, It is worth enough conducting similar studies on different type of multi-media such as I pad, Apple, movies, etc. on a larger sample size for a longer research period to differentiate the short-form the long-term effects of the different types of software application.

A final theme for future research is the relationship between the quality of teachers' experiences with PowerPoint and their technology integration, in particular their use of PowerPoint in their own teaching as there seems to be a significant correlation between how teachers learn and practice.

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