The Effects of Using Animations on Sixth Grade Students' Academic Success in Turkish Grammar Learning

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Abstract
The purpose of this empirical study is to determine how and to what extent the use of animations impacts auditory acquisition, one of the key learning fields in 6th grade grammar, as measured by students' academic success and completion rates. By using a pre-test and post-test design, this emrical study randomly divided a group of Turkish 6th graders into an experimental and a control group, who were taught the same standard lessons (as set forth in the Turkish annual lesson plan) by the same teacher for a period of 10 weeks. In addition to the standard lessons, the experimental group was also shown animations. The results revealed that phonetics performance improved for both the experimental and the control group, but that the group who had been shown the animations improved much more than the group who had been instructed via traditional methods only.

Keywords: Animation, grammar, teaching

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Introduction

Today's schoolchildren have grown up with instant audio-visual communication via computers and the Internet, and increasingly have opportunities to benefit from these technologies in school settings. Traditional chalk-and-talk teaching is now considered out of date not only by learners, but also for the most part by teachers and teaching institutions. In educational studies, teaching technologies have attracted more scholarly attention in step with the increased importance of technology in the real world. Şahin and Şahin (2007: 310-311) found connections between teaching materials and, meeting the objectives of teaching is possible if these elements are organised properly.

Grammar is the study of voices, words and sentences, and helps us think more comprehensively and precisely (Kavcar et al., 1997: 74). In accordance with the latest developments in language teaching, teaching grammar is now conceived of as bringing linguistics elements from students' sub-consciousness to the level of consciousness; making these elements useful; and helping students to understand how language organisation forms (Demirel & Şahinel, 2006). The linguist Fries (1952) held that one cannot be literate without learning grammatical rules that carry weight within one's working system of oral language (as cited in Hortin, 1994). For all these reasons, it is quite important that grammar education be effective over both the short and the long term.

However, there are considerable problems with grammar teaching as currently practised in Turkey. According to Özbay (2006b: 149), grammar teaching seldom if ever goes beyond the teaching of specific definitions and rules using a limited range of examples. Fundamentally, language is presented as a tool and its rules as information to be memorised; as such, the main purpose in which learning should be provided sufficiently and efficiently is ignored. Teaching grammar based on teaching rules and terms, and concepts that stand for the terms, has been practised for many years; indeed, the teaching of rules and terms has been perceived as the subject's main aim (Karadüz, 2009: 286).

Though the Turkish language is taught at every stage of education, many students have some problems in the usage of their mother tongue, while some cannot use Turkish productively either in oral or written form. It is also obvious that the teaching of Turkish to foreigners has lagged behind expectations (Alyılmaz, 2010: 729). In short, as measured by achievement, Turkish grammar education as a whole can be deemed a failure. One of the basic factors responsible for this failure is the inadequacy of the teaching materials and tools used, which do not spark students' interest (Durukan, 2011). According to Sağır's (2002: 56-59) study of grammar teaching, neither students nor teachers tended to like grammar as a subject, generally seeing it as cold, hard and unlearnable. Other researchers (Çilenti, 1994; Şimşek, 1997) have observed that interaction and the use of a variety of materials in lessons support and increase students' success. For these reasons, we propose that it might be preferable to utilise new teaching methods and participatory activities that are easily grasped and that appeal to students' visual intelligence.

Animation is one of the tools with the potential to enhance student engagement in grammar lessons, and therefore their grammar achievement, as it allows them to be active in lessons, to learn by enjoying, and to make associations between the rules and concepts used in grammar with daily life. According to Daşdemir (2006: 4) animations increase students' awareness to learning, improve their powers of perception, and positively influence their learning skills. Other studies of the educational use of animations have found that for students, animations make learning easier since, in addition to reading, seeing and other sensory organs are involved in the process.

The term *animation* has been defined in a number of different ways. The Turkish dictionary definition of animation is the state of being full of life or vigour, from a Latin root meaning 'refreshing' (Foley et al., 1990); the corresponding Turkish terms for this liveliness equate to refreshing, stimulator, presenter and entertaining (Meb, Megep Child development and education, animation studies: 7). Animation as a technology – defined as detailed moving images that may be

either drawn or computer-generated – is one of the most used components of computer-based multimedia learning (Bülbül, 2009; Foley et al., 1990; Laybourne, 1998).

The prevalence of the Internet and related technologies has led to some alterations in people's interests and communication styles, including increasing attraction to animation and cartoon movies. It is to be expected that such changes in society as a whole will affect schoolchildren and educational environments. Therefore, using and improving new technology-based methods and techniques in educational studies may be considered an obligation rather than a preference (Eryaman, 2006; 2007). Moreover, since animated characters are fairly important in the recreation and advertising sectors, using animations in the classroom has become a key technique for reaching kinaesthetic and visual students (Herrison & Hummell 2010: 20).

Animations have shown to impact various aspects of education including cost-effectiveness, students' motivation and examination success, the learning of complicated systems, effective time-management, and security; they also have been associated with notable improvements in students' attitude to lessons and their academic success (Güvercin, 2010; Tekdal, 2002). Santos (2009) found that flash animations favourably influenced fifth graders' acquisition of learning concepts, and Elmstrom Klenk's (2011) similar research with students had similar results. These findings suggest that animations could have favourable effects in Turkish grammar lessons, which (as we have seen) students tend to consider unengaging and difficult, through visual richness and dynamism, examples of correct pronunciation, and relateability.

According to Arıcı and Dalkılıç (2006: 429) educational software developed via animations enables students to understand lessons more clearly and concretely. Moreover, with the adoption of the Structural Educational Approach in Turkey, visual reading and visual presentation have been included in the first through fifth grade Turkish grammar curriculum. It is worth noting that in the first through fifth grade Turkish-language curriculum, visual reading and presentation are coded as separate learning acquisitions, whereas in the sixth to eighth grade Turkish-language curriculum, listening, speaking, reading and writing skills are all considered part of the acquisition of grammar (Akkaya, 2011: 38). Also, the structural approach is aimed at providing learners with high-level cognitive activities and quality educational experiences. For this reason, the use of animations in grammar lessons could be said to match with the structural approach in general. The techniques learned while creating animations increase creative thinking and develop students' planning and interpersonal skills (Herrison & Hummell, 2010: 24). However, the fact that visual reading and presentation are included in both the first through fifth and sixth through eighth grade Turkish-language curricula suggests that animation, and/or other similar tools, should be deemed an educational necessity.

Purpose of the study

The purpose of the current study is to determine whether the use of animations directed toward the acquisition of phonetics in sixth-grade Turkish lessons has a sustainable effect on students' learning and academic success. Accordingly, it seeks to answer the following research questions:

1. Are there any significant differences between the post-test grades of the students in the experimental and control groups, once their pre-test grades have been controlled for?
2. Are there any significant differences between the retention-test grades of the students in the experimental and control groups?

Method

This 10-week empirical study utilised a pre-test and post-test, control-group model (Karasar, 2003: 97) and was carried out during the 2014-15 school year in Dosteller middle school in Adana Seyhan. Out of the sixth-grade classrooms in the school, class 6-A was randomly selected as the experimental group and class 6-B as the control group. In both groups, the lessons were taught by the respective classes' usual teachers, and according to the lesson plans in the Turkish teachers' handbook

and Annual Plan. The only difference between the treatment of the experimental group and the control group was that didactic comic books were issued to the former, in addition to their regular educational materials.

Study Group

The gender distribution of the sixth graders who participated in the study are shown in Table 1, below.

Table 1.

Gender distribution of the study groups

Sex	Experimental group	Control group
Female	15	14
Male	16	17
Total	31	31

Data-Collection Tool

An auditory achievement test (AAT) was developed by the researcher to determine whether support from animations affected sixth graders' achievement or retention of what they learned in phonetics. Before the AAT was designed, the researchers prepared an indicator table for the acquisition of phonetics, which was divided into 10 categories. Four questions were then written for each acquisition category, resulting in a total 40 questions. Subsequently, a pre-test of the AAT was administered to 124 seventh graders at the same school where the main study would take place. Based on an analysis of which questions the seventh graders answered correctly, answered incorrectly or left blank, the researchers developed an item-difficulty index and a discrimination index along with standard deviations. According to Tan and Erdoğan (2004: 218), any question whose index of discrimination is below 0.20 should be removed, while those with indices between 0.20 and 0.40 should be revised, and those with indices above 0.40 retained without modification. Therefore, 17 of our 40 questions whose indices were below 0.40, and an additional three questions whose indices were above 0.40 were removed from the AAT. Following these changes, the average difficulty index of the 20-question version of the AAT was (p) 0.63 and the discrimination index was estimated as (r) 0.50, indicating that this version would be in practice.

Preparation of the Application Material

The animations aimed at helping sixth graders with the acquisition of phonetics were designed by Ali İhsan Demir, a member of our research team, and shown to two field experts. These experts in turn told the animations referred to the acquisitions.

Data Collection and Analysis

At the outset of the main study, the 20-question version of the AAT was applied as a pre-test to both the experimental and the control group. The same version of the test was also administered to both groups at the four-week and 10-week marks. The middle application of the AAT, i.e., at four weeks, was intended to measure they two groups' retention of the phonetics information they had acquired up to that point, and will hereafter be referred to as the "retention test". Independent T-test analysis of the data obtained during this study was performed using SPSS 17.0 software.

Findings and Interpretations

The results of independent-groups T-tests on the pre-test frequencies of the experimental and control groups are shown in Table 2, below. This table indicates that there were no statistically significant

differences between the test frequencies of the experimental and control groups [t(38)=-1.301; p>0.005].

Table 2
Independent-groups T-test results for the pre-test frequencies of the experimental and control groups

Groups	n	X	Ss	Sd	Levene Test F	Levene Test p	t	p
Experimental	20	3.5	3.66	38	0.884	0.353	-1.301	0.201
Control	20	5.0	3.63					
Total	40							

p>0.05

Independent-groups T-test results for the post-test frequencies of the experimental and control groups are presented in Table 3, and indicate that there was a statistically significant difference between the two groups [t(38)=4.761; p<0.005], with the post-test mean frequency of the experimental group (X=78) being higher than that of the control group (X=64.75). Accordingly, it could be said that, while both groups experienced increases in success, this success was considerably greater when the teaching of phonetics was accompanied by animations.

Table 3
Independent-groups T-test results for the post-test frequencies of the experimental and control groups

Groups	n	X	Ss	Sd	Levene Test F	Levene Test p	t	p
Experimental	20	78.00	8.01	38	0.302	0.586	4.761	0.000*
Control	20	64.75	9.52					
Total	40							

*p<0.05

Table 4
Independent-groups T-test results for the retention-test frequencies of the experimental and control groups

Groups	n	X	Ss	Sd	Levene Test F	Levene Test p	t	p
Experimental	20	66.00	7.36	38	0.333	0.567	4.753	0.000*
Control	20	54.50	7.93					
Total	40							

*p<0.05

Independent-groups T-test results for the retention-test frequencies of the experimental and control groups are shown in Table 4, above. There was a statistically significant difference between the two groups [t(38)=0.567; p=0.000], with the mean frequency (X=66) of the experimental group being higher than that of the control group (X=54.5). Therefore, while it can be said that sustainable learning occurred in both groups, the teaching of phonetics accompanied by animations yielded more favourable results.

Discussion and Recommendations

Animation can help learning become essential, rapid and visual. It stimulates a desire to learn on the part of students by presenting educational material via humorous caricatures that prevent it from becoming boring (Özbağı, 1996 and Steven, 1994, both cited in Arıcı & Dalkılıç, YEAR). In Turkey, most research on the educational use of animation techniques has been quantitative, regardless of whether the subject being taught was geography (Çelik, 2007), chemistry (Kolomuç, 2009), physics (Bülbül, 2009), mathematics (Öztürk Taşkale, 2011), Turkish as a foreign language

(Sülükçü, 2011), social science (Aktürk, 2012), or science (Bunce & Gabel, 2002; Daşdemir, 2006; İskender, 2007; Venkataraman, 2009).

Our literature review revealed no prior studies parallel to the present one in terms of the subject matter being taught, with two exceptions: Yılmaz's (2010: 167) research on an animation called the "verb family" used in teaching; and Sancak's (2011) postgraduate thesis on the teaching of the functions of the ablative affix (+dan) to sixth graders using animation techniques.

Our study found no statistically significant difference between the pre-test frequencies of the experimental and control groups, but the results of independent-groups T-tests on the two groups' post-test frequencies did find significant differences between them, with the control group's post-test mean frequency being higher. In other words, there was a measurable increase in subject knowledge among both groups, but this was markedly greater when animations supplemented traditional teaching methods. The data also suggest that animation use increases Turkish middle school students' retention of the grammar information that they learn, perhaps because this technique holds their interest more than normal chalk-and-talk teaching does by itself. In light of our interesting results and the scarcity of parallel studies, more research is clearly needed in the field of grammar learning in middle schools.

It should also be mentioned that the rapid development of computer- and Internet technologies have forced Turkish teachers to develop their own strategies regarding the usage of animations and other technological innovations. Computers can change the flow of teaching, livening up the atmosphere and holding students' attention and interest, especially when course content is delivered via films and animations. However, to maximise the benefits of such deployments of technology and minimise any negative impacts, teachers need to be carefully trained in computer-based education. Students now typically encounter computers before they are five years old (Dede, 2013); Daşdemir (2013: 1298) found that animations provided a different point of view for students and enabled student-centred working atmosphere, thereby improving students' understanding of responsibility and increasing their high-level thinking by allowing them to have solution-oriented approaches to questions. For these reasons, it would be useful for Turkish teachers to keep up with the latest technological developments, including but not limited to educational animations. Specifically, the recommendations of this study data are as follows.

First, because the present study has indicated that the teaching of grammar subjects could be improved via the application of animation techniques, more research should be conducted that is specifically tailored to the application of animation to various types of grammar lessons in middle schools (i.e., not only phonetics); and the age-range of the participants should be expanded to cover fifth, seventh and eighth graders. Second, the range of in-service training courses for middle school teachers should be enlarged to cover the importance and usage of animations.

Theory or practical works could be practised on the effects of basic skills of Turkish language such as reading, writing, speaking and listening.

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