

## The Effect of Online Learning Environment Based on Caricature Animation Used in Science and Technology Course on the Success and Attitude of the Student for Humor

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### ABSTRACT

The purpose in this study is to examine the effect of "Online Learning Environment based of Caricature Animation" which is prepared for "Human and Environment" and "Sun and Space" units in the secondary school 7th Grade Science and Technology course, on the success and attitude of the students for humor. The participants consist of 7th grade students who take Science and Technology course and study in Kırşehir State Secondary School. Online learning environment has two sub-level according to the situation of existence or nonexistence of caricature animation. The implementation stage is actualized with the participation of 46 students; 23 students in experiment group and 23 students in control group. Success test and attitude scale is used for both groups before and after the implementation. At the end of the study, it is observed that the successes of the students studying in online learning environment with caricature animation are higher in significant level than the students studying in online learning environment without caricature animations.

**Keywords:** Online Learning, Caricature Animation, Science and Technology, Success, Attitude

### INTRODUCTION

To try to develop themselves against the fast developing and changing information in present information age becomes a necessity and the individuals try to meet this obligatory need in different forms and in different learning environment. "When the needs and the opportunities of the educational institutions are considered, it is observed that the individuals who want to receive education, face with the educational problems due to their ages, occupation and regional position" (Mahiroğlu and Çoşar, 2008).

Recently, online courses are developed and used for the non-profit organizations and higher education institutions. The care given to the lifelong learning and online education by the individuals, makes the needed education important for being used in online environment. According to White (2003), the online learning is an approach where the online learning, teaching and learning process is actualized with the internet technology. Internet technology does not only reach the information but also turns into interactive environments where the information production is actualized and shared. These specifications of internet are an important potential in transferring the learning process to online environments (Yaşar, 2012). Since all opportunities provided by internet constitute resource for online learning environment, they offer convenience in terms of accessibility and richness in terms of material variability (Kalelioğlu, Arda and Çetin, 2016).

Online learning environments are classified under four titles of Learning Management Systems (LMS), Learning Content Management Systems (LCMS), Course Management Systems (CrMS) and Virtual Learning Environments (VLE) (Berking and Gallagher, 2013). The online learning is a student-centered environment which includes the distance learning and programs within itself, can be extended and organized easily, facilitates the evaluation and encourages the individual learning. (Cook and Dupras, 2004). Online learning environments use single or multiple technologies to support simultaneous or non-simultaneous interaction between teacher and students in a regular and constant order (Allen, Seaman, Poulin and Straut, 2016). The online learning systems must involve whole learning fields from pre-school to higher education, informal learning in society, house or business, the courses in industry and educational courses for adults. This concept may be seen as inefficacious by itself however its need for the cooperation-based learning environment which determines the negative interruption between the different learning stages or environments and removes these interruptions in systematic form, is emphasized (Sadeghi and Moslehpour, 2007).

When the present education model which is equipped with changing and new technologies, is compared with the course given by the traditional methods, implementation of different strategies is required in education besides using the technology for only the works (Baturay and Türel, 2013). Online learning may not be appropriate for all students. Determination of special qualifications could be helpful to contribute into estimation of potential learning outputs against failure (Kauffman, 2015). Studies concentrated on learning process of an individual suggest that each individual follows different ways and strategies in learning (Ünlü and Karataş, 2016). The today's technological developments imply the different techniques and strategies which are appropriate for each individuals. The online learning environment must include various activities for meeting the individual needs and reaching the learning outcomes (Ally, 2008). Supporting online learning environments through various animations, games and visual objects, attention of students and persistence of learning could be acquired (Akca, Barut and Önder, 2014). However, in a face-to-face education environment, success displayed by student does not mean that it would happen similarly in an online environment (Kalelioğlu and Baturay, 2014). Appropriate strategies must be used for an efficient learning in online environment.

The humor which create variation in emotions and understandings of the individuals, helps in presenting the creative products (İnam, 1994). Even it is in different style and understanding, the caricature which is an efficient humor type in our era, provides the humor by presenting an ordinary situation within an appearance table which is not in daily life or by bringing many different classes together (Öngören, 1988). The caricatures may be used for developing the critical thinking skills of the students related with the subject, presenting their prior knowledge, providing commenting and communication skills, starting the discussion process, encouraging for using the imagination, arousing the interest of the students to the subject, providing the research of the subject and for evaluating the learned subjects (Kleeman, 2006).

The concept caricatures are developed for an innovative teaching and learning strategy which considers the structuring opinions related with the science learning. (Keogh and Naylor, 1999). Therefore, for an effective learning and success in online environment, appropriate strategies are required to be used. Concept cartoons are significantly important in natural science teaching. Students are motivated to think about various subjects in general (Hejnová, 2013). The concept caricatures must include the elements which provide the transfer of the scientific knowledge, encourage the students for researching and discussing and arouses the attention of the students.

There are many implication related with the usage of concept caricatures in science learning and teaching. These are:

- to increase motivation.
- to present objects for practical studies.
- to underline the implementation in science.
- to provide opportunity to the students for evaluating their own understanding levels.
- to support the conscious, interest and understanding of the public for the science.

The concept caricatures has a function as stimulant for presenting scientific thoughts, encouraging the discussing, attracting attention and asking questions (Long and Marson, 2003). The concept caricature materials provide a discussion environment where the students may change or develop their thoughts (Morris, Merrit, Fairclough, Birrell and Howit, 2007). It is possible to state that cartoons, cartoon films and animations whose visual dimensions are put in prominence to develop positive attitude towards course and to increase academic success have essential place in improving student motivation (Yıldırım, 2016). Effective usage of animations allows students to accomplish their targets directly and relieve them from loading of abundant unnecessary information and develop their perception and attention skill to enhance efficiency of learning (Bayram and Koçak, 2013).

Consequently, the educational approaches which increase the attractiveness in online learning environment, provide to students to think critically and develop their mental skills, are needed in online learning environments. The literature shows that the humor may positively affect the emotions of the individual for the content and may be a positive factor for learning. Besides, in the studies for the usage of caricatures in the education, it is observed that the caricatures increase the efficiency in education, make the course more attractive and entertaining, contribute to the mental and emotional aspects of the students and help the student to participate to the discussion environment and change their minds. It is thought that the implementation of the online learning environment supported with the humorous elements which are different from domestic and abroad example and lack of any similar studies in this field, shall make important contributions to the literature for meeting the need.

The question of whether the online learning environment which is prepared related with Science and Technology by benefitting from the "caricature animations", has an effect on the success of the students, forms the problem of this research.

The purpose of this research is to analyze the effect of the caricature animation-based online learning environment on the success of the student and their attitude for the humor. The sub-purposes for this purpose are as follows:

Between the control group working in online learning environment where the caricature animation is not used and the experiment group working in online learning environment where the caricature animation is used;

1. In terms of success points of the students,
2. Is there any significant difference in their attitude towards humor?

The present research;

1. Humor factor in online learning environment are limited with "cartoon animations" presented in two-dimensional,
2. Content and success tests provided in an online learning environment are limited with the "Human and Environment" and "Sun and Space" units of the Natural Science and Technology Course.

## METHOD

### 1. RESEARCH DESIGN

The effect of the online learning environment with or without caricature animations on the success and attitude of the students towards the humor, is examined in the experimental operation stage of the study. Semi experimental pattern with Pretest- final test control group is used in this study. For providing the equation in the group, the control and experimental groups are assigned objectively (Hovardaoğlu, 1994). The figurative appearance of the research model is given in Table 1.

Table 1. Figurative Appearance of the research model

		Pretest		Final test	
G <sub>D</sub>	R	O <sub>1</sub>	X	O <sub>3</sub>	
G <sub>K</sub>	R	O <sub>2</sub>		O <sub>4</sub>	

**G<sub>D</sub>**: The experiment group with caricature animations

**G<sub>K</sub>**: The control group without caricature animation

**R**: Objective assignment

**O<sub>1</sub> and O<sub>3</sub>**: Experiment group pretest and final test

**O<sub>2</sub> and O<sub>4</sub>**: Control group pretest and final test

**X**: Independent variable which is applied to the participants in experiment group

The independent variable of the research is the online learning environment. The online learning environment includes two sub-levels as the existence and nonexistence of the caricature animations. The dependent variables of the study are the successes of the students and their attitude towards to humor.

### 2. STUDY GROUP

For using the semi experimental pattern with pretest-final test control group in research, the study groups are determined instead of sampling and population. The study is made in Kırşehir State Secondary school for the communication convenience with the school personnel in providing the participation of the experiment and control group students and the availability of the computer laboratory usage. When forming the experiment and control groups, 7/C class studying the Science and Technology course with objective assignment method in Kırşehir State Secondary School is determined as experiment group and 7/E class is determined as control group. Total 15 students from 61 students are excluded from the scope of the research for the nonparticipation of 11 students to the final test and lack of continuity of 4 students to the application. The research is made on total 46 students who take science and technology course and participate to whole activities; 14 female and 9 male students in experiment group and 10 female and 13 male students in control group. The experiment group is the online environment with caricature animations and control groups is the online environment with no caricature animation.

### 3. LEARNING ENVIRONMENT

The content of online learning environment consists of "Human and Environment" and "Sun and Space" in 7th grade Science and Technology courses. The online environment is prepared as two different environments with caricature animations and without caricature animations. The purpose of the introductory animations (introduction animations) which are used in the beginning of both units in online learning environment, is to attract the attention of the student and to arouse the interests of the students. It is aimed to have the introductory animations as to be a visual presentation summarizing the content of the course.

The students are directed to main page after watching the introductory animation for a specific period of time. The main page includes the titles and sub-titles of the subjects, discussion, site map, about and help menus. Information, video, application and caricature (caricature animation) activities are found under the sub-title of each subject. The activities under the sub-title of the subject are respectively explained as follows.

*Information:* It is the section where the information is presented both as aural and visual. There are two separate channels which shall process things we hear and see. (Paivio, 1986). The elements which the students may follow the information as aural and visual, take place in this section.

*Video:* It is aimed to make the content more entertaining and attractive by appealing to different sense organs using the actual videos related with the sub-title of the subject. The videos are used widely in the web environments for materializing the abstract conceptions and for supporting with text or visuals (Somyürek and Atasoy, 2008, s.214).

*Implementation:* When the students give right or wrong answers to the questions asked for the content, explanations are made to the students about why their answers are right or wrong. Through these explanations, it is aimed to remove the problems in interpreting the question options while answering the questions.

*Caricature (Caricature Animation- Cartoon Animation):* It is tried to present how the caricature animations provided to the experimental group students in online learning environment as an education material, affect the education process. Help is asked from the expert for learning what kind of an editing shall be actualized for creating motion images from the caricatures.

*Discussion:* Through the discussion made in the online learning environment, the active participation of the students to the learning environment. By means of the online discussion, a learning environment is provided where all students participate simultaneously and communicate with each other. The discussion process of the experiment and control group students, is performed in environment which is independent from each other.

*Site Map:* It is aimed to have the students monitor the content in online learning environment easier.

*About:* It is the section where information is provided related with the copyrights like recorder, text, video, picture, caricature.

*Help:* It is the section with the contact sites which shall be beneficial for the students for learning what to pay attention in using online learning environment

### 4. APPLICATION PROCESS

The experimental process in research process, is made in a computer laboratory environment during a period of 11 weeks. Besides the Science and Technology course which is 4 hours weekly, the computer laboratory is presented to the usage of the students because the information technologies course is not compulsory.

The information technology teacher and researcher in school remedy the hardware and software deficiencies of the computers in laboratory environment for the application to be applied on both experiment and control group. Earphones are given to each student for not being affected from the external environment. NetOp School software is installed to the computer for monitoring the transactions in screen and for timely intervention during the actualization of experimental process. NetOp School is a software which is useful for controlling the computers in computer laboratory environment during the course. Due to the actualization of whole applications through the online learning environment, the internet infrastructures are made suitable.

The students are given training for the usage of the system (listening or reading the course content, following the videos, solving the test questions, providing the discussion, commenting the caricatures etc) during two course

hours User names and passwords are given to each student which shall provide the access of the student to online learning environment and the students are demanded to write on the suitable section in the identification badge.

The students are requested to answer Success Test of "Human and Environment" first when the online learning environment is accessed. After completing the success test, the students are requested to fill "Attitude against humor scale" when they click on "End the test". It is not permitted not to answer any articles while filling the System Success Tests and Scales. Besides, the students are permitted to access to the unit after filling Success tests and Scales.

One each computers are supplied in computer laboratory for providing the students to work independently. When the students access to the system, they face the activities which are required to be made under the title. The system does not allow students to skip the activities under the next title without completing the activities under the relevant title. The students in experiment and control group actualize activities for the acquisition of "Human and Environment" and "Sun and Space" units during 8 weeks. Besides, an additional period of 3 weeks is given to experiment group students for the humorous activities

The students who complete "Human and Environment" unit, reply the success test again which they have answered at the beginning of the unit as the final test. System gives the access permit to the students who complete the success test of "Human and Environment" unit, to the "Sun and Space" unit. When the students access to the "Sun and Space" unit, they provide unit access by entering the success test related with this unit.

Experiment group students who complete the activities under each subject title, face "caricature animations" which are the last humorous activity. The students write their first opinions related with this activity before participating to discussion environment by questioning the caricature animation which they face in the last activity stage. The students who click on the completed button after writing their opinions related with this activity, are included to the environments where the opinions related with the caricature animations conflict (discussion) and combine (negotiation). The administrator send messages to the students for what they need to do in the next stage for ending the discussion process. As of this message is delivered to all students, the discussion environment becomes closed. The students are requested to transfer their final thoughts which they create in their minds related with the humorous activities through the discussion.

In the last week, the students who complete "Sun and Space" unit, are requested to reply the success test again which they have answered at the beginning of the unit as the final test. Besides, the students are requested to fill "Attitude against humor scale" which they have filled at the beginning of "Human and Environment" unit".

## **5. DATA COLLECTION TOOLS**

It is developed for determining the successes of the experiment and control group students related with "Human and Environment" and "Sun and Space" units. Belirtke Table is prepared by considering Bloom's cognitive Field Taxonomy and the acquisition are determined in company with the experts and in accordance with Science and Technology Course program. Success tests which are issued according to Belirtke table, are implemented as pretest and final test to the experiment and control groups in online learning environment.

For determining the attitudes of the students towards the humor, Likert type scale with 44 articles which is issued by Aydın (2006), is applied on 550 students. The number of articles is decreased to 29 by calculating the data of the articles of students and the reliability of the scale increases to 0.86 in accordance with these calculations. The reliability coefficient of the scale which is applied to 238 persons in 6 elementary schools in the centre of Kırşehir by the researcher, increases to 0.92.

## **6. DATA ANALYSIS**

SPSS packaged software is used in the analysis of quantitative data and the significance value is determined as  $p < 0,05$ .

Covariance analysis (ANCOVA) with single factor is used for determining whether there is a significant difference between success tests point and Attitude towards humor scale of the students studying in online learning environment with caricature animation and online learning environment without caricature animation.

**FINDINGS**

**1. FINDINGS WHICH ARE OBTAINED FROM THE SUCCESS TESTS**

Covariance analysis is made for determining the change in "Human and Environment" and "Sun and Space" Success test points of the control group students using the online learning environment without caricature animation and the experiment group students using the online learning environment with caricature animations.

Covariance analysis is used for analyzing the data of a few different types of studies. These are;

- In the researches where the experiment and control groups are assigned according to the pretest applications,
- In the researches which the intergroup matching is made according to pretest points,
- In the researches where the unexpected results may occur which the researcher cannot take under control (Green and Salkind, 2008).

**1.1. FINDINGS WHICH ARE OBTAINED FROM HUMAN AND ENVIRONMENT SUCCESS TEST**

Covariance analysis (ANCOVA) with single factor is used for determining the change in "Human and Environment" and "Sun and Space" Success test points of the control group students using the online learning environment without caricature animation and the experiment group students using the online learning environment with caricature animations.

Table 2. Success test (Human and Environment) of the students in experiment and control group, Pretest-final test, corrected arithmetical averages, Standard Deviation Values and Final Test Corrected Averages and Standard Error Values

Groups	N		Total Points		Corrected Final Test Averages	
			$\bar{X}$	SS	$\bar{X}_d$	SH
Experiment Group	23	Pretest	10.83	2.85	11.49	.60
		Final test	12.39	3.45		
Control Group	23	Pretest	8.70	3.35	9.55	.60
		Final Test	8.65	4,13		

As seen in table 2, the corrected final test total point average of experiment group ( $\bar{x}$  =11.49) is higher than the average of control group ( $\bar{x}$  =9.55). For determining between which groups does the difference exists, Bonferroni paired comparison test is applied and the obtained results are given in table 3.

Table 3. Bonferroni test results related with the significancy (human and Environment) of the differences between the corrected averages of Success Test, Final Test Total Points of the students in experiment and control groups

Comparison	Actual Difference	Standard Error	P
Experiment Group Control Group	1.944	.871	.031*

\*p<.05

When table 3 is analyzed, it is observed that there is a statistical significant difference in favor of experiment group according to the studied environment between the "Human and Environment" unit of the experiment and control group. Therefore, according to the findings which are obtained from success test of "Human and Environment" unit, the students studying in learning environment with caricature animations, are more successful in significant level than the students studying in environments without caricature animations.

**1.2. FINDINGS WHICH ARE OBTAINED FROM SUN AND SPACE SUCCESS TEST**

Covariance analysis (ANCOVA) with single factor is used for determining the change in "Sun and Space" Success test points of the control group students using the online learning environment without caricature animation and the experiment group students using the online learning environment with caricature animations.

Table 4. Success test (Sun and space) of the students in experiment and control group, Pretest-final test, corrected arithmetical averages, Standard Deviation Values and Final Test Corrected Averages and Standard Error Values

Groups	N	Total Points		Corrected Final Test Averages		
		$\bar{X}$	SS	$\bar{X}_d$	SH	
Experiment Group	23	Pretest	8.70	2.24	14.83	.93
		Final test	14.82	4.49		
Control Group	23	Pretest	8.70	3.12	11.04	.93
		Final Test	11.04	5.42		

As seen in table 4, the corrected final test total point average of experiment group ( $\bar{x}=14.83$ ) is higher than the average of control group ( $\bar{x}=11.04$ ). For determining between which groups does the difference exists, Bonferroni paired comparison test is applied and the obtained results are given in table 5.

Table 5. Bonferroni test results related with the significance (Sun and Space) of the differences between the corrected averages of Success Test, Final Test Total Points of the students in experiment and control groups

Comparison	Actual Difference	Standard Error	P
Experiment Group Control Group	3.783	1.313	.006**

\*\*p<.01

When table 5 is analyzed, it is observed that there is a statistical significant difference in favor of experiment group according to the studied environment between the "Sun and Space" unit of the experiment and control group. Therefore, according to the findings which are obtained from success test of "Sun and Space" unit, the students studying in learning environment with caricature animations, are more successful in significant level than the students studying in environments without caricature animations.

## 2. FINDINGS WHICH ARE OBTAINED FROM ATTITUDE SCALE

When the pretest points of the students in experiment and control group from the "attitude towards humor scale" are controlled, covariance analysis (ANCOVA) is used for determining whether there is a significant difference between the final test points

Table 6. attitude pretest-final test of the students in experiment and control group, corrected arithmetical averages, Standard Deviation Values and Final Test Corrected Averages and Standard Error Values

Groups	N	Total Points		Corrected Final Test Averages		
		$\bar{X}$	SS	$\bar{X}_d$	SH	
Experiment Group	23	Pretest	103.70	11.40	105.19	3.33
		Final test	105.74	15.40		
Control Group	23	Pretest	100.39	12.53	104.25	3.33
		Final Test	103.74	16.81		

As seen in table 6, the corrected final test total point average of experiment group ( $\bar{x}=105.19$ ) is higher than the average of control group ( $\bar{x}=104.25$ ). For determining whether this difference is significant or not, covariance analysis is applied and the obtained results are given in table 7.

Table 7. Covariance Analysis Results of Final test total points of Students' attitude in the experiment and control groups

Source of Variance	Sum of Squares	Sd	Sum of Squares	f	p
Controlled Variable (Pretest)	595.747	1	595.747	2.363	.132
Grouping main effect	9.993	1	9.993	.040	.843
Error	10841.557	43	252.129		
Total	515905.000	46			

As seen in Table 7, the covariance analysis results show that the grouping main effect is not significant in terms of final test corrected average points of the groups when pretest total points are taken under control [ $F(1,43)=.040$   $p=.843$ ].

The findings of the research related with the student attitudes show that there is no significant difference in the attitude of the students towards humor according to online learning environment. Therefore usage of caricature animations in learning environment does not create a significant difference in the attitude of the students towards humor.

## DISCUSSION, RESULTS AND SUGGESTIONS

This research aims to analyze the effect of the education actualized by using humor in online learning environment on the attitude of the students towards humor and success of the students. Caricature animations are used as humorous element in online learning environment. The education which is actualized by benefitting from caricature animations in online learning environment increases the successes of the students in significant level. As the result of the interviews made by experiment group students, it is observed that the students understand the subjects better with the caricature animations which are used as an education strategy. Various online learning approaches could result in different consequences for student success (Porter, 2015). In his study, Hung (2012) has examined the effect of various learning methods in program design course of the students who learn with special learning styles in online learning systems. In this study, the learning performances are analyzed by focusing on the relation between the learning methods and learning styles in program design course. As the result of the study, a more significant difference is observed in the students who learn with diagram method in program design course than the students who learn with the other method. As a result of the study which aims to reveal the effect of online activities based on learning strategy for natural science course teaching on academic success of students and on persistent learning, a statistically significant difference was determined with online learning environment in terms of academic success of students (Ünlü and Karataş, 2016). In the experimental study which Ziv (1988) made related with the humor in higher education, he used a control group where no humor exists and a control group where humor exists in statistics course. 161 students participate to the study and the results show a significant difference in favor of student group who learn with humor. In the study made by Karakuş, Palaz, Kılcan and Çepni (2012), the effect of the usage of caricatures in environmental problems in "Transnational Bridges" in Social Sciences course of 7th grade students on the success of the students. According to the findings of this study, the course which is made with the caricature based activities, makes a positive effect on the academic successes of the students in favor of experiment group. Akamca, Ellez and Hamurcu (2009) has examined the effects of concept caricature based computer educations. The qualitative data which is obtained from observation and interview, is analyzed with the content analysis and according to the results of the study, the concept caricature based learning environment positively affects the successes of the students. In his study, Kılınç (2008) develops a humorous comprehension mechanism which may be used in commenting normal caricatures and science caricatures. As the result of the study, the education which is made with science caricatures increases the successes of the students rather than plain teaching method. In another study, it was reported that usage of interactive concept cartoons and concept maps in social science teaching had positive significant effect on their academic success (Akbaş and Toros, 2016). In another study conducted by Evrekli and Balım (2015), it was reported that animation-supported concept cartoon and conceptual cartoon practices in the unit of "Material and Heat" resulted in that post-test scores of experiment group were higher than pre-test scores significantly. In another study conducted by Daşdemir and Doymuş (2016), it was determined that animation-supported teaching in the unit of "structure and characteristics of material" increased student success and persistence of knowledge. In their study, Tokcan and Alkan (2013) observed that courses held by support of concept cartoons increased student success in the experiment group. In the study conducted by Başal and Gürol (2014), it was determined that it has statistically significant effect on success scores of students from the experiment group attending to online foreign language education. In the study conducted by Swan, James, Daston and Raleigh-Durham (2016) on success levels of students attending to online undergraduate programs, it was not adversely effective on students' success; on the contrary, students made moderately faster progress by having some online course. In the study which investigated effect of cartoon-supported learning activities on "Chemistry and Energy", significant difference was determined as a result of students' academic success test in the favor of experiment group (Özyalçın-Oskay and Efil, 2016). Success is not only related with student satisfaction and high grades, but learning perception and information transfer as well (Barbera, Gomez-Rey and Fernandez-Navarro, 2016).

There is no significant difference in the attitudes of the students towards humor in terms of whether the caricature animations exist in online learning environment. It is thought that a long study process is needed for having to student to present a positive attitude related with a different strategy and to get used to the caricature animations which are not frequently seen in daily curriculum. In his study Baba (2012), examines the effects of concept caricature usage in giving citizenship awareness to elementary school students. While the course in experiment group is made by using concept caricatures, the social sciences program is made normally in control group. At the result of the research, it is observed that the usage of the concept caricature does not affect the attitude of the students towards the course.

The humor aims to make a connection between the student and teacher through entertainment and to help the students for being more careful and fit (Wandersee, 1982). Humor is considered as a sign of emotional intelligence; it is strong communication type (Taiwo, Odeunmi and Adetunji, 2016) and it is a strategy utilized to improve students' inclination to accept scientific information accurately (Wizner, 2014). In the study conducted by Akbaş and Toros (2016), students expressed their opinions as interactive concept cartoons have positive characteristics such as funny, allowing persistent learning, consolidating what was taught during course and drawing attention. As a result of interviews held with natural science teachers about usage of concept cartoons developed by them, it was determined that they were having positive opinions about preparation and usage of concept cartoons (Ekici, 2015). In another study, it was observed that students were satisfied with teaching and tools in which video, animation, cartoon and cartoon films etc. materials based on multimedia; and that they displayed high attention level during the course (Akın and Çeçen, 2015). By means of humor in online courses, students would find the course process more funny and they would think more creatively (Stoll, 2016). The development of visual media makes the caricatures and cartoon animations more attractive. Various learning materials are used for providing the permanence of the teaching and to make the learning more fun. The usage of the visuals that shall extend the imaginations of the children shall make the learning more effective. The caricature and cartoon animations are confronted as the education materials which provide the information to be visualized easily and help the student by learning through entertainment. According to the results of this study, it is thought that the usage of caricature animations which are designed according to the individual differences and development level of the students, shall increase the success of the students.

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**APPENDIX: NOTATION TABLES**

**Human and Environment Success Test Notation Table**

Part Of Unit	To Ecosystem From Kind	Different Ecosystems	Food Network	Biological Diversity	Let Love Living	Environmental Problems and Effects	Solution Proposals and Activities
Knowledge				9	12	14	
Comprehension	1,4	3,5		7,10			
Application					11	13	
Analysis	2			8		16	
Synthesis			6			15	17
Evaluarion							18

**Sun and Space Success Test Notation Table**

Part Of Unit	Let Examine Celestial Bodies	Stars Groups	Comet	Getting to Know Planets	Satellite of our Planet	Getting to Know Sky Island	History of Space Exploration	Telescop	Space Technology
Knowledge	1		6,8						
Comprehension	2	3,4	5,7	10, 11, 12, 13, 14, 18		15	17, 19	20	21, 22, 23
Application									
Analysis				9	16				24
Synthesis									
Evaluarion									