

# From the teachers' perspective: A way of simplicity for multimedia design

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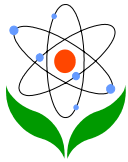
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## Abstract

Presently, teaching and presentation methods are changing from chalk and blackboards to interactive methods. Multimedia technology is presently used in many schools, however much of the commercially-available software programs don't allow teachers to share their experiences. Adobe Captivate 3 is a computer program that enables teachers, without programming or multimedia skills, to easily design/create their own multimedia for use in individualized situations. This paper tries to encourage the teachers to create and develop their own educational software for the regional curriculum and diverse learning groups. The presenter had conducted a course with nine teachers during the 2007-2008 academic year in Erzurum, Turkey. After the course, participants were interviewed. The survey data was collected through semi-structured interviews, a qualitative method, in order to gain insights into teachers' opinions. The data was analyzed using descriptive statistics, and the findings were digitalized and presented.

**Keywords:** Instruction, Authoring tool, Multimedia, Teacher, Teaching

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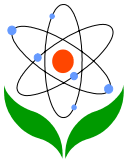
## Introduction

Despite electronic information technologies are being transformed from expensive, exotic gadgets into indispensable basic classroom equipments in recent years, their extraordinary multimedia capabilities are rapidly becoming a routine part of many learning environments (Slawson, 1993). Multimedia is a generic term that can be applied to any form of presentation that combines a variety of digital media elements such as text, music, sound, graphics, pictures, movies and animations (Tannenbaum, 1998). By adding the term "interactive" to multimedia, it ensures that the definition includes the end user's ability to interact with the technology, not just sitting and watching, but seeing, hearing, thinking and doing (Anderson & Veljkov, 1990).

Using interactive multimedia programs while teaching enhances teachers' management of instructional techniques and provides more flexibility while presenting during classes (URL-1). Multimedia provides students with very important resources for active learning (Barker & Tucker, 1990; Slawson, 1993). In other words, it helps students become more engaged in their learning through collaborative efforts, simulations and actively constructing information through new knowledge (Norton & Sprague, 2001).

Teachers are the primary agents for adopting and implementing educational change as information and communication technologies in the classroom (Tinker, Schoenberg and Nyland, 1994) and they are ultimately responsible for providing educationally effective multimedia programs (Barker and Tucker, 1990; Anderson, Knussen, and Kibby, 1993; Baker, 1994). Most teachers have been using commercially available multimedia packages that were usually created by professional designers and programmers, who are outside of the education community. The programs may display amazing technological sophistication, and the temptation may be great to "shoehorn" such items into the curriculum. However, if the content is not suitable, or if the emphasis is incorrect, then the software should be eliminated from consideration (Dryrli & Kinnamon, 1994). Additionally, teachers work with diverse groups of learners (Thorsen, 2006), and commercially available multimedia is often fast-paced and visually intense, creating inaccessibility for students with learning or motor difficulties (Houde & Sellman, 1994; Voelkerding, 2002). For this reason, teachers can't share their own experiences and materials for specific knowledge level of each student by using commercially multimedia packages in their teaching (Alyazı & Gürsoy, 2002).

If teachers want to eliminate these negative aspects, they must create their own multimedia in order to construct their own teaching style (Alyazı and Gürsoy, 2002; Retnasamy, 2002). Teacher-created multimedia is a more powerful learning strategy than the traditional set-up of the student learning from instructor or designer produced materials (Jonassen, Peck and Wilson, 1999). But there is a significant educational problem: most teachers don't have the technical background or expertise necessary to integrate content successfully into interactive multimedia instruction (Barker and Tucker, 1990; Anderson et al. 1993; Baker, 1994). Teachers need training with the "hard" technologies, such as computers, more than they do with "soft" strategies, such as innovative teaching methods (Baker 1994). The more teachers have the opportunity to practice using technology, the more likely they are to use it in their classrooms (Michaels & McDermott, 2003).

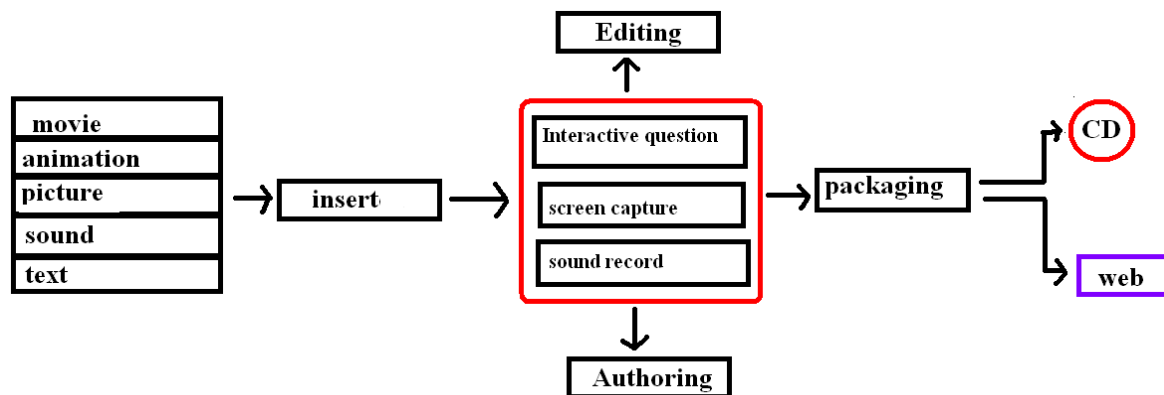


The aim of this study is to have teachers create their own multimedia reflecting their own teaching style for their students, who have different learning skills, cultural backgrounds and personalities. This study presents teachers with an alternative way of creating their own multimedia that includes digital media elements, interactive questions and several other features. Creating individual multimedia can be thought of as a laborious, complex and time consuming task, but some software authoring tools have been developed to aid non-programmers, including teachers.

## Authoring Multimedia Tools and Adobe Captivate 3

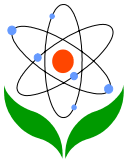
Authoring can be defined as integrating the different digital media elements such as text, graphic, sound, animation and video into a coherent interactive application in a computer to convey a message or information (Neo & Neo, 1997). Authoring tools are software packages that allow the user or author to perform the authoring process. Digital media elements that are stored separately can be brought together through this software through sequencing and synchronization into a seamless application, and finally delivered to the target audience via a CD-ROM or the Web (Neo & Neo, 2001)

Currently, there are several different types of authoring tools. One such tool, Adobe Captivate 3, enables anyone to rapidly create powerful and engaging multimedia without programming or multimedia skills (URL 2).



**Figure 1.** Process of Adobe Captivate 3

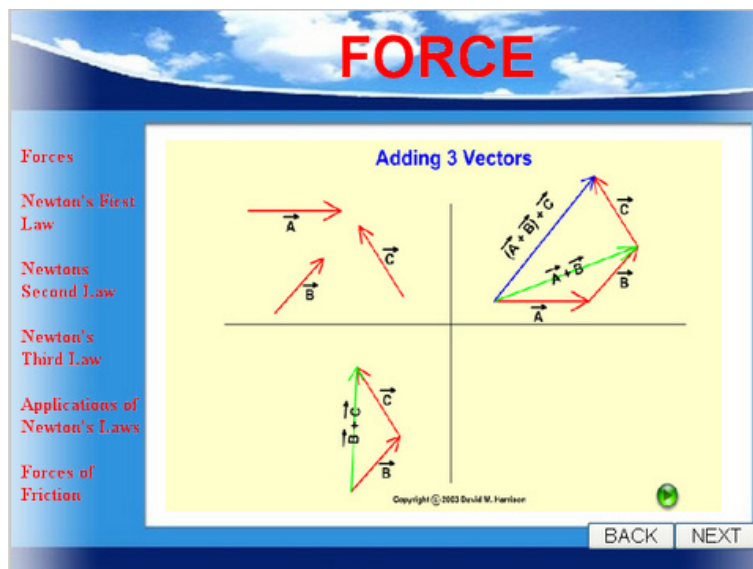
By using Adobe Captivate software's simple point-and-click user interface and automated features, teachers can easily record on-screen actions, add e-learning interactions, create interactive questions and complex branching scenarios with feedback options and include rich media such as sound, graphic, movie and animation (URL 2).



**Figure 2.** Titles' names and pictures as interactive buttons in main menu

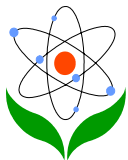
In this project, by adding transparent buttons on the titles' names and pictures, they were transformed into interactive buttons that can link this screen to any other screen in the menu or to another menu.

The animation that is inserted can be resized and located anywhere on the screen. A user can control the animations by clicking play and stop buttons on the original form.



**Figure 3.** An inserted animation about adding three vector (force)

(The animation was downloaded: [www.upscale.utoronto.ca/GeneralInterest/Harrison/Flash/](http://www.upscale.utoronto.ca/GeneralInterest/Harrison/Flash/)). Enticing animations and videos may be important for a visual learner, however, be mindful of copyright restrictions when you incorporate existing animations and videos.



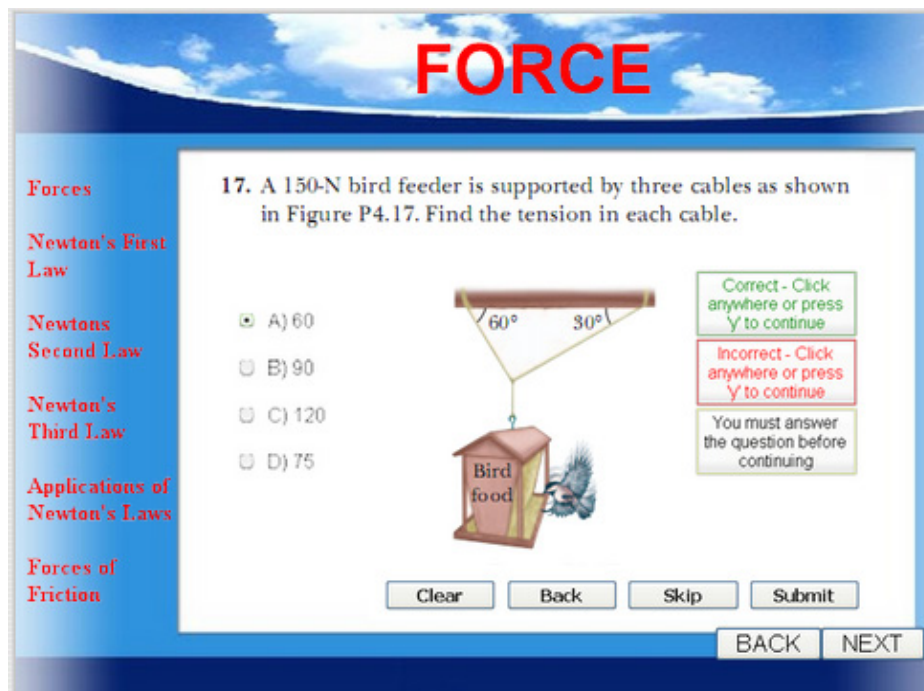
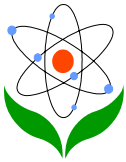
The program can insert the movie as interactive movie, which can be defined as any movie that the user has more than minimal 'on-off' control over in terms of what appears on the screen.



**Figure 4.** A movie about forces

When the video is inserted the project, the video playbar should be selected to control video on the completed project. It is also possible to specify timing and transition options for when the video is inserted or at another specific time. Only flash video files that are FLV formatted with metadata can play in Adobe Captivate projects.

This program also includes a variety of question types for projects including multiple choice, true and false, matching, hot spot, sequence, rating scale, fill in the blank and short answer. It also includes randomized questioning and question pools that improve learner assessments by randomly drawing questions from a set of question pools. It is possible to shuffle the answer options for multiple-choice questions, so that the answers are displayed in a different order each time.



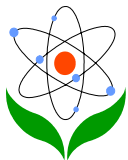
**Figure 2.** Interactive question screen with feedback

The program can convert questions' text into interactive question automatically. It can be controlled by what happens when users answer the questions correctly or incorrectly. There are many options for when users answer questions correctly and incorrectly.

## Method

I asked teachers if they would be interested in participating in a study about creating their own multimedia. Nine experienced-teachers accepted my offer to participate. The Participants were four science and technology teachers, two physics teachers, a geography teacher, a chemistry teacher and a mathematics teacher. Teachers' completed the course over the period of one hour for a week ([Appendix 1](#)). The course was about the Adobe Captivate 3 software. During the course, teachers were expected to have knowledge and skills about creating their own multimedia.

The survey data was collected through semi-structured interviews, a qualitative method, in order to gain insights into teachers' opinions. The interview is a "purposeful conversation" between two people (or more) with the explicit purpose of gaining information from the other (Bogdan & Biklen, 2003). The researcher interviewed all the participants after the course and directed only one question to them individually. The question asked them was, "What are your opinions and views about creating own Multimedia?" The data was analyzed using descriptive statistics, and the findings were digitalized and presented.



## Findings and Discussion

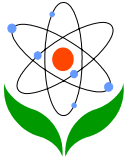
The most frequently selected items from teachers' views about creating their own Multimedia are presented in Table 1.

*Table 1. The percentage of teachers and their views*

Teachers views about creating their own Multimedia	%	f
I can quickly and easily create my own multimedia by using “copy” and “paste”	88	8
I work with diverse learning skills groups so I can present my own voice, videos, interactive questions and flash animations in my own multimedia to make my lessons more attractive and more interesting	67	6
I will split the class up into teams. I will prepare interactive questions and the students will have to try and guess the correct answer for each question. I think they will enjoy this kind of teaching.	56	5
It is too hard to write subjects and questions, especially those that contain pictures on the blackboard. As a physics/chemistry/science and technology/math teacher, I will present text and questions using my own multimedia without writing on the blackboard. I will use them all my other classes.	56	5
I can show dangerous, difficult, expensive or time consuming experiments not normally possible in the laboratory	33	3
I used to use PowerPoint for presenting and teaching my lesson. I think it has all features of Captivate 3 program except for rapidly questioning.	33	3

When the views reported by the teachers were analyzed, a vast majority of teachers (88%) indicated that creating their own multimedia using Adobe Captivate 3 was very easy. Although Adobe Captivate 3 include more features than PowerPoint, some teachers (33%) claimed it did not, except for rapidly questioning.

As seen in Table 1, the majority of teachers (67%) indicated that they had diverse learning skills groups in their classes. Hence, they were satisfied to create multimedia with their own materials to help their students who were concerned about lessons. However, 56% of respondents thought that they could provide more interesting lessons by teaching through interactive questions and splitting the class into teams. Moreover, most (67%) stated that they could provide more student interest in the concepts and processes of science through animations, graphics, sounds, movies and interactive questions. The findings appeared to suggest that all the teachers were satisfied to create own multimedia because self-made multimedia allows teachers to share their experiences with their own teaching materials. The findings are similar to what is found by other researchers (Barker & Tucker, 1990; Slawson, 1993; Norton and Sprague, 2001; Alyazı and Gürsoy, 2002).



More than half of the teachers (56%) indicate that writing text and drawing graphics and pictures took a long period of time, during which time little substantive learning took place. They thought that multimedia programs could help easily and quickly complete routine tasks, and they save time in order to work on other activities. Additionally, 33% of teachers added that they could show dangerous, difficult, expensive or time consuming experiments not normally possible in the laboratory through multimedia. Teachers thought that their students seemed to have a better grasp of the material covered by the computer-based materials than they had when the same material was taught using more traditional methods. These findings confirmed the findings of Jonassen et al about computer use in schools (1999).

All participant teachers were aware of developing their technological literacy, technological awareness and technological capability to use information technology. A study by Baker (1994) supports these findings.

## Conclusion

Most of us think that we need to invest much money, time and a high degree of technical knowledge to create multimedia. But this small study provides us with a snapshot view of how teachers are employing their own creative multimedia in pedagogically effective ways to enhance their classroom instruction. The benefits derived from the inclusion of self-made multimedia vary from teacher to teacher; the inclusions of instructional multimedia-based activities allow teachers to target specific learning styles and to infuse their teaching style with a more diverse range of learning activities. Additionally, creating one's own multimedia illustrates teachers creativity when developing instructional tools. However, even simple tools still require educators to engage in complex inferencing about the consequences of their authoring decisions.

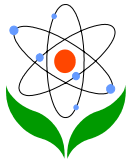
Teachers constantly try to explain difficult terms by writing text, drawing graphics and answering the questions on the blackboard. In fact, all teachers create their own live textbook in each class. This same logic can also argue that teachers can create their own multimedia by using authoring tools that support the teaching and learning process in the same way.

Lastly, the use of multimedia to create teaching materials for instruction can offer teachers the opportunity to network and to collaborate with their colleagues. The teachers that create their own multimedia can work together to share ideas and tools that they have used successfully, and serve as peer mentors to assist their colleagues in becoming more comfortable with the use of multimedia applications in their own teaching.

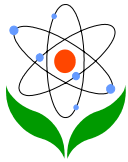
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[http://homepage.mac.com/seilts/findingsuccess/resources/Multimedia/Powerpoint\\_AT.pdf](http://homepage.mac.com/seilts/findingsuccess/resources/Multimedia/Powerpoint_AT.pdf).

## Appendix 1: Lesson plan for course

Subjects	Day	Hour
Introduce Adobe Captivate 3	Monday	1
Introduce the interactive object	Tuesday	1
Create an application with an interactive object on a blank slide	Wednesday	1
Use “buttons” to link pages each other	Thursday	1
Insert video and animation in a screen	Friday	1
Prepare and add questions in a screen	Monday	1
Examining a sample application	Tuesday	1