The Use of Multimedia Tools in Teaching Secondary School Students

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Asliaty Atim[1,*], Zulida Abdul Kadir[1], Rosmahalil Azrol Abdullah[1], Siti Hajar Bidin[1], Noryani Neni Ahmad Jamain[1], Suzilla Jamari[1]

[1] Centre for Language Studies, Universiti Tun Hussein Onn Malaysia (UTHM), 86400 Parit Raja, Batu Pahat, Johor, Malaysiaa

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ABSTRACT

Current studies help in encouraging the transition from traditional tools in teaching to multimedia tools like videos, audios and slideshows. There are many successful effects that are generated from using multimedia tools in teaching. One of the values from showing videos and slideshows to students and using audios with students is we can induce them to understand the curriculum better. The earlier feedbacks from teachers have shown that presenting videos, slideshows and films could help them in conveying the information and ideas to their students. This paper studied on how teachers employ multimedia tools such as videos, audios and slideshows in their classes instead of the traditional tools like printed materials. The study was done in four secondary schools in Batu Pahat. Questionnaires were distributed to 120 Form 3 students asking their feedback on the use of multimedia tools in class. The students were informed that participation in the study was voluntary, that it did not relate to their class grades, and that their teachers would not have access to the data. The researcher adopted a quantitative approach to determine the number of students who prefer multimedia presentations in their classrooms to printed materials. The results indicated that using multimedia tools in teaching helps both students and teachers. It helps students in better understanding and enjoying the course materials, and at the same time it assists teachers in conveying the course materials to students clearly and easily. Finally, issues that are important for future research were also discussed.

1. Introduction

Nowadays, multimedia tools like videos, audios and slideshows have become essential in most schools, colleges and universities for teaching. The use of such tools is believed to be encouraging and uplifting better results for both teachers and students. In other words, these tools have become part of teachers' toolbox to help facilitate student learning. De Sousa *et al.*, [7] said that multimedia allows teachers to integrate text, graphics, animation, and other media into one package to present

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* *Corresponding author.*
E-mail address: asliaty@uthm.edu.my (Asliaty Atim)

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comprehensive information for their students to achieve specified course outcomes. According to Paige [11] implementing a 21st century curriculum should blend knowledge, thinking, innovation skills, media, Information and Communication Technology (ICT) literacy, and real life experience in the context of core academic subjects.

The main motivation for observing the use of multimedia tools in teaching is according to The VARK learning style model introduced by Fleming (2006) that there are four primary types of learners which are visual, auditory, reading/writing and kinaesthetic. These students need some kind of visual stimulation with a media application so that it can increase their engagement in learning. However, some teachers are using the same traditional teaching methods and hoping that the students' results will get better [8]. One of the requirements for the 21st century classroom is that teachers should combine the traditional methods of teaching with some multimedia tools to drive the interest of the students to learn. This is the revolution that all instructors should do to make our education system to be a well-developed system similar to all the more developed countries in the world.

Burden *et al.,* [4] stated that embracing the use of multimedia tools and mobile technologies in class, comes with many attendant benefits for learning, which include motivation, engagement, parental involvement, and understanding of complex ideas. Nevertheless, there are also rebelling opinions that we should keep in mind. Although we are in the needs to move towards Education 4.0, our assessment of information literacy in the information age should not automatically include the assumption that students will become better consumers of information because they have access to the Internet, the greatest information source ever developed. Without a proper guide from teachers, the practice of using multimedia tools in teaching will not benefit the students much in learning.
This paper examined the results of using multimedia tools in teaching and how these tools help students in better understanding the course materials. The context of this investigation was four secondary schools in Batu Pahat from which the students were surveyed.

2. Using Multimedia Tools in Teaching

Teachers use multimedia tools in classes to support their teaching strategies. In addition, multimedia tools are also used because it is an effective way to reach and engage the students during lecture and classroom activities. Al Rajhi [1] stated that videos help to attract student's attention, generate student's interest, focus student's concentration, increase understanding and increase the retention of content. Visual displays of information encourage a diversity of individual viewer styles and rates of editing, personalizing, reasoning, and understanding [13]. Berk [2] listed 20 learning outcomes related to using multimedia tools in the classroom:

1. Grab students' attention
2. Focus students' concentration
3. Generate interest in class
4. Create a sense of anticipation
5. Energize or relax students for a learning exercise
6. Draw on students' imagination
7. Improve attitudes toward content and learning
8. Build a connection between students and their instructor
9. Increase retention of content
10. Increase understanding
11. Foster creativity
12. Stimulate the flow of ideas

13.   Foster deeper learning
14.   Provide an opportunity for freedom of expression
15.   Serve as a vehicle for collaboration
16.   Inspire and motivate students
17.   Make learning fun
18.   Set an appropriate mood or tone
19.   Decrease anxiety and tension on scary topics; and
20.   Create memorable visual images

3. Multimedia Tools in Classes

In classrooms, teachers use multimedia tools in various ways. For instance, videos can be played on a DVD player or embedded in a Power Point. In addition, teachers can show the clips and videos directly from YouTube or any other online video websites [1]. Snelson [12] claimed that although YouTube was created as a video-sharing service for the everyday user, the potential for educational use has not gone unnoticed. Another instance of how multimedia tools can be used in classrooms is teachers can use audios to teach listening skills. Teachers can play audios using a laptop and speakers to let students listen to authentic audios by native speakers of different accents. Other than that, teachers can also play slideshow to show pictures or present information using a PowerPoint. However, teachers must set and follow certain criteria in selecting multimedia tools for their classes.

In order to select the most effective multimedia tools for each lesson, teachers must match the tools with the information they want to transfer to their students. King [9] suggested that the appropriateness of content need to be considered in the selection process. Films with sex and violence should be avoided to ensure that there are no negative effects on the students. Besides, teachers must also choose films that are age-, gender-, and culture-appropriate.

As far as student's motivation and interest are concerned, teachers can choose entertaining films to avoid boring classes which make understanding difficult for students. However, suitability of the films with the course content should be the priority. In addition, the length of viewing time in the whole-film should be considered too. King [9] claimed that more proficient students are normally more motivated and have the concentration to continue through the whole movie and understand it well. On the other hand, low-level learners usually cannot concentrate for a long time and they do not have enough motivation to view a whole movie in one class.

Additionally, Derry *et al*., [6] suggested that the process of selecting multimedia tools should involve choosing a particular information and theories from the course and present them using the multimedia tools. In addition, teachers should also simplify complex information by selecting only specific important points to avoid confusion among students and to attract their interest and attention. Other than that, Derry *et al*., [6] also suggested narrative approach as another criterion for selecting multimedia tools in classes whereby teachers select interesting and illustrative multimedia tools for students to attract their attention and help them understand the information easier.

Denning [5], meanwhile, claimed that comprehensibility is a major criterion in selecting multimedia tools for classes especially videos used for language-learning purposes. Clear dialogues, high degree of visual support, appropriate speech delivery, clear picture and sound and standard accent are the aspects of comprehensibility that he meant.

4. Methods

4.1 Participants and Procedures

The sample consisted of 120 Form 3 students from four secondary schools in Batu Pahat. The students were informed that participation in the study was voluntary, that it did not relate to their class grades, and that their teachers would not have access to the data. The participants were guaranteed confidentiality, and were asked not to write any personal information. No teachers were present during data collection, which was carried out during class sessions by the researcher. All students who attended the classes on the day of data collection agreed to participate. The participants took approximately 30 minutes to complete the questionnaires for each class. To examine the most effective teaching methods for students, the research used a quantitative approach. The questionnaire has ten questions adapted and adopted from Xu [15]. The data were fed into the computer and a one-way table displaying categorical data in the form of frequency counts and relative frequencies were used.

5. Results

5.1 A Quantitative Approach

The researcher adopted a quantitative approach to determine the number of students who prefer multimedia presentations in their classrooms to printed materials. Table 1 presents the descriptive statistics of the study. Most students agreed that multimedia tools are best for them in understanding the course materials. They prefer this way to more traditional methods, and they think that their teachers must use newer methods as part of their lesson delivery.

Table 1
Percentage of the study items (N = 120)

No	Variable	Multimedia Teaching	Traditional Teaching	Combination
1	What is the teaching method being adopted?	0 %	0 %	100 %
No	**Variable**	**Good**	**Average**	**Bad**
2	How is the interaction between teachers and students?	70 %	30 %	0 %
No	**Variable**	**Good**	**Average**	**Bad**
3	What is your evaluation to this course?	80 %	20 %	0 %
No	**Variable**	**Yes**	**No**	**Not sure**
4	Do you prefer multimedia teaching method over traditional method?	92 %	0 %	8 %
No	**Variable**	**Multimedia Teaching**	**Traditional Teaching**	**Combination**
5	What is your expectation in teaching method?	10 %	0 %	90 %
No	**Variable**	**Yes**	**No**	**Not sure**
6	Do you think multimedia teaching can replace the method of traditional teaching?	63 %	3 %	34 %
No	**Variable**	**Good**	**Average**	**Bad**
7	How is the quality of multimedia teaching courseware in this course?	56 %	44 %	0 %
No	**Variable**	**Chalk and Talk**	**Self-study**	**Cancel class**

8	What is the alternative if the multimedia teaching plan is not working as planned?	79 %	18 %	3 %
No	Variable	Open-ended question		
9	Please comment on the overall teaching methods used by teachers in class.			
10	Please suggest how teachers can improve their overall teaching methods.			

6. Discussion

The current study examined the use of multimedia tools in teaching and their effects on students' understanding. The findings showed that using these tools helps students in better understanding the course materials. Students prefer multimedia tools to lecturing and printed materials as a teaching method in classes. They indicated that learning using multimedia tools would help them in understanding concepts related to their courses immediately and clearly.

To determine the teaching methods teachers use in classes in the school, students were given an open-ended question. Most students pointed out that their teachers sometimes use videos, audios and PowerPoint in their classrooms and that this is more useful for them in understanding as they feel more engaged. They mentioned that their teachers also use other tools in explaining the course such as books, lectures, photos and maps, but that these are of less interest for them and make understanding more difficult.

Entertaining multimedia tools must be chosen to engage the students and to convey target concepts for them in an easy and enjoyable way. As King [9] stated, boring classes should always be avoided as they make understanding difficult for students.

Some teachers prefer using multimedia tools more and some of them prefer traditional lecturing more. These preferences depend on the skills of the teachers, i.e. if they have the ability to use computer programs to produce multimedia presentations for their classes, they will use multimedia tools more. In addition, whether or not multimedia tools are required depends on the content of the course. Similarly, the students indicated that the teachers use PowerPoint and videos, as required in classes, i.e. it may be appropriate to present the content of the course using multimedia or printed materials or a combination of both. In addition, they mentioned that the teachers use other effective teaching methods such as playing course related games with them, using stories related to the content, and grouping students to encourage pair and group learning. These feedbacks are also recognised by Venkatesh *et al.*, [14] as they found out that engaging lectures, effective use of multimedia tools for individual study and group-work, as well as active and self-regulated study strategies have a positive and significant impact on students' perceptions of course effectiveness.

The findings of the study supported the use of multimedia tools in classes. When students were given a chance to make suggestions to their teachers on the use of new teaching methods, most of the suggestions involved the use of multimedia tools, videos, iPads and games. Most likely, students made these suggestions as they feel more comfortable with these tools and they can understand better and learn more using visual learning materials. It is especially advantageous for them to learn from multimedia tools because they will give them more awareness about the ideas of the course and they can comprehend them better. This reflected a study done by Ljubojevic *et al.*, [10] where according to them, students can better understand and remember key points of a lecture when multimedia tools are used in class. Students learn better (i) from words and pictures than from words alone, (ii) when words and pictures are presented simultaneously rather than successively, (iii) when

extraneous words, pictures and sounds are excluded, and (iv) from animation and narration than from animation and on-screen text.

Moreover, the present study asked the students about their suggestions for teachers in their school; they mentioned the teachers have to update their skills regularly and follow the advances in communication and technology, and use more computer programs in their classes. They indicated that the teachers have to combine training courses in computer programmes and technology and courses about new methods in teaching styles. They also indicated that teachers must download more computer programs, which relate to their courses and they have to introduce the use of iPads in their classes. They also recommended that the teachers create more new ideas that are beneficial for students and which support the use of multimedia tools in classes.

7. Conclusion

To conclude, using multimedia tools in teaching will help both students and teachers. It will help students in better understanding and enjoying the course materials, and at the same time it will assist teachers in conveying the course materials to students clearly and easily.

Based on these findings, multimedia tools need to be promoted among teachers to encourage the use of innovative teaching methods. Teachers need support and motivation from their schools to apply these methods, for example, schools have to provide teachers with training and courses related to using new computer programs and producing multimedia presentations for their students. Future research may benefit from examining the use of multimedia presentations in more than four schools. It would also be useful to conduct a study which includes a wide range of student ages and take into consideration the students' gender. Determining the interactions between classroom multimedia presentations, age, and gender in the classrooms could help guide good teaching practices in schools regarding the innovative use of multimedia.

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