Technology Increases Students' Attention

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INTRODUCTION

*A*ttention is an unconditional power in the sense that at any moment it can be applied indifferently to any content of consciousness. For example, when an object, graphic, a short composition of words, or model contain intelligible structures, these examples can promote consciousness to attention, therefore gaining knowledge brought by attention. Consciousness does not begin to exist until it sets limits to an object, graphic, a short composition of words, or model (Ponty, 2002). The classroom environment contains many objects and distractions that can prevent the teacher from gaining attention. Therefore, the teacher must pay particular attention when preparing lesson plans and teaching aids. The problem is the transfer of knowledge from the teacher to the students and maintaining their attention. The teacher's objective is to promote critical thinking on the part of the students.

According to Gelder (2005), critical thinking applies to a very wide range of domains and contexts, and it underlies the problem by which transfer of knowledge can fail. The teacher must develop skills to design lessons and teaching aids that transfer knowledge. A critical skill is the development of teaching objectives that go beyond superficial thinking. For example, all students know what a textbook is, but do they know how the textbook is developed, manufactured, marketed, and finally in their possession? If the teacher transfers the knowledge of how a textbook ends up in one's hands or in a back pack, all of the steps involved would have to be presented and explained. At that point, the students would have an appreciation for the textbook that is beyond the superficial, and the knowledge gained from the transfer. They would know why one book containing color photographs costs more than a text with black and white print and no photos.

This holds true when transferring knowledge of concepts all teachers teach in their respective courses. The mere mentioning of a concept with an explanation is not good enough students require corresponding information through the use of teaching aids to further explain new concepts to master knowledge. The intent of this paper is to incorporate technology such as power points, graphics, and videos, to enhance the learning process of new concepts. The use of such technologies allow the learner to visualize the concept. According to Gelder (2005), the better one can see what is going on, the more effectively one can comprehend what one is learning. There are advantages through the use of technology over verbal presentations, such as: Making reasoning more easily understandable, because students can focus their attention. When the student can see the reasoning, which means he or she can relate to the concept, they can identify the important issues and knowledge the teacher is transferring (Gelder, 2005). In addition, when the teacher utilizes technology to transfer knowledge, students intern are more apt to prepare their presentations through the use of technology. When students create an attention getting environment the learning process is expanded.

LITERATURE REVIEW

Teachers have and are learning about the value of incorporating technology in designing their lesson plans and constructing an enhanced learning environment. The enhanced learning environment can foster the learners' capacity to reason. Capacity is defined as higher-order-thinking, technology applications can support higher-order-thinking by engaging students in complex tasks. Learning is not a practice of depositing or transferring knowledge directly into the mind of the learner. When technology applications are integrated into the learning environment these applications support capacity learning (Shutkin, 2004).

According to Wise (2003), ambiance is a wonderful word defined as an environment or its distinct atmosphere. This refers to the feeling one can experience from a particular environment. It is the teacher's

responsibility to create a learning environment. Dynamic speakers can fail when the learning environment does not facilitate the learning.

Using videos as a tool for teaching content ties what could be just glitzy technology directly to the lesson plan increases students' capacity to learn and communicate. Teaching communication used to be simple: teach writing and speaking. However, today's students must be able to communicate with pictures, both moving and still (Scot and Harding, 2004).

When projecting a power point or video the discussion questions can be: What is the message you receive from this projection? How does the graphic or text relate to the message you receive? How can you use this information? Showing a clip or a power point helps students learn content (Hickman, 2004).

Classroom presentations have been an integral part of education. Traditionally, the finished product was a written report presented to the class. These presentations were augmented by posters and three dimensional objects. Many teachers and students alike have switched to modern technology software to spark interest and attention to present information. Today's teachers are seeking innovative technology based ways of enhancing concepts in the classroom (Curchy and Kyker, 1995).

Audiovisual and presentation equipment makes a profound impact on the way teachers transfer knowledge. These tools have assisted teachers in maintaining students' attention. New technologies such as software have transformed the nature of presentation equipment; traditional equipment has gone through major modifications. The days of black and white transparencies and slide presentations are gone. These presentation tools have been replaced by easy to use technologies used in many classrooms today. LCD projectors offer new innovative features for teacher use. Now teachers can combine the best video clip, computer graphics, and overhead projection to produce bright and high-resolution images on to large screens. In addition, the LCD projector can be connected to any computer for uncomplicated use (Curchy and Kyker, 1995).

Van Horn (1998) conducted a review on Power Point stating how impressionable its ability was to handle a wide variety of types of media. In less than two hours he was able to learn the program well enough to design a presentation that contained still photos, sound files, a Quick Time video clip, and a Quick Time 360 degree panorama with full cursor interactivity. The most intriguing feature of power point is its ability to make buttons. One can design buttons that play music, jump to another slide, start running a program on your computer, or hyperlink you to a website. With buttons, one can add considerable interactivity to presentations (Van Horn, 1998).

Fitch (2004) reported that within the past 15 years there has been an influx of significant technological achievements having a positive impact within the higher education classroom. Today's well equipped classroom contains projection equipment that permits the teacher to display computer based instruction materials such as Power Points, access to the internet, video capability, and the use of a projection panel to display print materials and show details in close-ups of three dimensional models. These innovations have dramatically enhanced the means by which classroom presentations are made.

In this technological age it has become vital for teachers to develop skills to design, analyze, synthesize and evaluate information while integrating instructional technology in support of learning. A report from the National Research Council (Bransford, Brown & Cocking, 1999) explores the potential of technology to provide conditions that are conducive to meaning learning: real world contexts for learning, connections to outside experts, visualization and analysis tools, scaffolds for problem solving, and opportunities for feedback, reflection and revision. Ultimately instructional technology classrooms should be designed to impact the students cognitive system, to enhance students skills, and promote transfer of knowledge. The learning environment is an area that should provide the learner with technology that assists the learner to maintain attention to the instructional problem or concept being presented, and comprehend the components of the problem being presented (Oberlander and Johnson, 2004).

WHY INCORPORATE TECHNOLOGY IN THE CLASSROOM?

Teachers should consider the following five key behaviors that can contribute to effective teaching and the transfer of knowledge: Lesson clarity, instructional variety, teacher task orientation, student engagement in the learning process, and the students' success rate.

Less effective teachers use vague, ambiguous, or indefinite language, and rely on lecture alone. These teachers have a tendency to use overly complicated sentences and do not breakdown concepts into comprehendible terms they do not use examples to allow students' an opportunity to relate to the material being presented. Finally the less effective teacher usually gives directions that cause confusion on the part of the learner.

Effective teachers pay heed to lesson clarity one of the key behaviors that focuses on how clear a presentation is to the students', such as: Design lesson plans that integrate Power Points to present concepts that are understandable to the learner. Through the use of Power Points the teacher can explain concepts more clearly taking advantage of visual attention getting slides, so their students are able to follow in a logical step-by-step order. In other words the slide would be animated to project a portion of the concept at a time, therefore the building block approach. To enhance the oral delivery a Power Point slide can display key words that the teacher uses as a back drop, asks what might the key word mean, then fill-in the blanks by explaining the key word. This method would engage the students in the learning process. What must be kept in mind is communicating clearly and directly. The students need to maintain attention, and the Power Points can assist with attention and focus. This should reduce the time it takes to introduce concepts because the students' attention is focused on the projection screen and listening to the teachers' presentation. Organization of the lesson plan with the Power Points and content is vital, time consuming, but pays off. The results should be oral and visual clarity.

The instructional variety behavioral component refers to the variability of delivery during the presentation of material. A traditional method of delivery is asking a variety of questions such as: fact questions, process questions, convergent questions, and divergent questions. It is believed by the authors that questioning alone does not maintain students' attention, especially during an entire class period, considering that attention span is about fifteen minutes. The authors believe that visually presented material can maintain focus, enhance the oral presentation, and influence learning. Power Points can reduce students' disruptive behavior and loss of attention.

Teacher task orientation behavior refers to how much classroom time the teacher dedicates to the task of transferring knowledge of a concept. What the teacher needs to consider is how much material is being presented and how much can be learned in a period of time. The use of attention getting approaches can be challenging questions and visual enhancement of the presentation. Visual content can reduce the time it takes to transfer material, maintain focus, and information overload. Matching questions with Power Point slides increases focus helping students' to relate to the material being presented.

Student engagement in the learning process is a key behavior that refers to the amount of time students devote to learning a concept. It is the teacher's responsibility to teach the students' how to learn. Developing Power Point slides that reflect the most relevant features of the concept knowledge to be transferred can guide and influence the learner to learn. These slides can be coupled with oral presentation and questioning for active participation of the learner for increased learning time and student engagement. The above four key behaviors can contribute to the final and fifth behavior students' success rate (Borich, 2000).

LITERATURE PERSPECTIVES

Incorporating technology in designing lesson plans and constructing an enhanced learning environment influences students' to learn and helps to engage them in the learning process. Today's teachers should accept the responsibility to create a learning environment. 21st Century students' prefer to communicate and learn with the integration of advanced technology.

New advanced audiovisual presentation equipment and software have made a profound impact on the way teachers transfer knowledge. Traditional black and white transparencies and lecture only methods to transfer knowledge are passé. Advanced technologies offer innovative features for teachers to produce high resolution images enabling them with the capabilities of enhancing lesson plans and presentations, such as through the use of Power Points. When using Power Points the teacher and students' can access the internet, incorporate videos, and display print materials. It has become vital for modern day teachers to develop technological skills enabling them with the capabilities to integrate instructional technology in support of learning.

The teacher should create a learning environment that provides the learner with technology enhanced presentation materials that engage the learner to maintain attention and focus to comprehend the instructional problem and or concept being presented. It is imperative for teachers to keep in mind that when a teacher reads from Power Points it creates a dull repetitive non productive non-learning environment. Power Points and any other use of technology is to be used as an enhancement, not the sole method of presentation.

H1:   It is believed by the authors that when lesson plans are properly structured with the integration of technology properly, presentation material can provoke a learning environment in which students' can maintain attention, focus, take notes taking, help relate to new concepts, and be engaged in the learning process.

H2:   When the teacher incorporates technology in the classroom environment, students' will be influenced to use technology when presenting educational material as well.

H3:   Students prefer to take quizzes at their own pace and are motivated to review textbook material prior to attending class, when taking quizzes placed on the website of the textbook publisher.

METHOD

Subjects

Over 500 undergraduate and graduate university students from Monmouth and Washington State Universities participated in the study for credit toward their general business courses. There were a roughly equivalent number of students who took part in the technology enhanced classroom environments and process of data collection. All of these undergraduates were in their junior or senior years.

Materials Used

The instructors used Power Points, some of which contained text, graphics, and video clips. In some instances all three components were used on the same slide. The text at times asked a question, described a concept, described the relationship between theory and practice, or reinforced a concept. The publisher of the assigned textbook placed practice quizzes for each chapter in the text for student's to use. These quizzes were graded and provided comments for the student's reinforcement.

Procedure

There were two groups and two surveys used. The group of 519 students consisted of graduate and undergraduates who responded to a 13 question survey Exhibit 1. The second group of students were all undergraduates who responded to a 9 question survey Exhibit 2.

The order of presentations of text, topics, and questions were counter balanced with discussions. The class populations ranged from 25 to 45 students per class. Upon completion of the courses the students were asked to complete an information sheet with the following questions:

Exhibit 1: Graduate And Undergraduate Survey

1.	Has the technology helped you focus?	Yes	No
2.	Does the technology help you in note taking?	Yes	No
3.	Do concepts become clear through the use of technology?	Yes	No
4.	Does the technology enhance discussion?	Yes	No
5.	Do you prefer lecture only?	Yes	No
6.	Does the use of technology assist you with your presentations?	Yes	No
7.	Are presentations more interesting when technology is used?	Yes	No
8.	Do you find taking practice quizzes on the web helpful?	Yes	No
9.	Do you prefer taking quizzes in class?	Yes	No
10.	Would you prefer to have a written exam?	Yes	No
11.	I would rather complete the assigned quizzes and e-mail them?	Yes	No
12.	Are concepts clear as a result of videos and Power Points used?	Yes	No
13.	Have you learned in this class more than in other classes?	Yes	No

Exhibit 2: Undergraduate Survey

1.	Has the technology helped you focus?	Yes	No
2.	The technology helped me recording notes.	Yes	No
3.	Concepts were easier to understand.	Yes	No
4.	Did the video clips highlight the concepts?	Yes	No
5.	Should the instructor continue to use technology?	Yes	No
6.	Did the technology balance with discussion?	Yes	No
7.	Did the method of instruction meet your expectations?	Yes	No
8.	Did the publisher's web-site assist you studying?	Yes	No
9.	Did the instructor provide you with a better understanding of the management concepts	Yes	No

Exhibit 3: Completed Graduate And Undergraduate Surveys
521 Respondents

Questions		**Responses**			
		Yes	**%**	**No**	**%**
1.	Has the technology helped you focus?	505	96.9	16	3.1
2.	Does the technology help you in note taking?	495	95	16	5
3.	Do concepts become clear through the use of technology?	487	93.47	34	6.53
4.	Does the technology enhance discussion?	465	89.25	56	10.75
5.	Do you prefer lecture only?	25	4.8	496	95.2
6.	Does the technology assist you with presentations?	521	100	0	0
7.	Are presentations more interesting when technology is used?	511	98.08	10	1.92
8.	Do you find taking practice quizzes on the web helpful?	316	63.33	183	36.67
9.	Do you prefer taking quizzes in class?	98	19.1	415	80.9
10.	Would you rather have a written exam?	65	12.55	453	87.45
11.	I would rather complete the assignedquizzes and e-mail them.	410	80.55	99	19.45
12.	Are concepts clear as a result of the videosand Power Points?	516	99.42	3	0.58
13.	Have you learned in this class more thanin other classes?	519	99.81	1	0.19

ANALYSIS OF EXHIBIT 3

The majority of the students replied that the technology helped them focus and in note taking. Technology also enhances discussion and encourages students to interact with each other and the instructor because the concepts being introduced are easier to comprehend. Most students, 95.2 %, do not prefer a lecture only method of instruction. The students unanimously responded that the use of technology assists them when making presentations. In addition, 98.08 % of the respondents supported the use of technology while presenting concepts because it helps to maintain interest. While a large number of students, 80% do not prefer taking quizzes in class rather than taking a written final

exam, 80.55 % prefer completing the assigned quizzes on the web and e-mailing them to the instructor. Concerning the use of Power Points and videos, 99.81 % of the respondents indicated they learned more in this class, while one student claimed additional learning did not take place.

Exhibit 4: Completed Undergraduate Surveys
120 respondents

Questions	Responses			
	Yes	**%**	**No**	**%**
1. Has the technology helped you focus?	120	100	0	0
2. The technology helped me in recording notes.	119	100	1	0.83
3. Concepts were easier to understand?	117	97.5	3	2.5
4. Did videos help highlight concepts?	119	99.17	1	0.83
5. Should the instructor continue using technology?	120	100	0	0
6. Did the technology balance with discussion?	120	100	0	0
7. Did the method of instruction meet your expectations?	120	100	0	0
8. Did the web assist you with study and assignments?	91	75.83	29	24.17
9. Did the instructor provide you with a better understanding of management?	120	100	0	0

ANALYSIS OF EXHIBIT 4

Almost all the students indicated that the use of technology assisted them with note taking and helped them focus on the material being presented. Students also indicated that concepts were easier to understand and videos enhanced the learning process. Accordingly, all students suggested that the instructor should continue to use technology and that the instructor's use of technology did balance with discussion. They also point out that the method of instruction did meet their expectations. However, less number of students feel that the web assisted them in study and assignments. Lastly, all students are pleased to say that the instructor provided them with a better understanding of management.

CONCLUSION

This study is the first step for further data collection where by the questions should incorporate likerts so a valid statistical analysis can be conducted. In the next stage it has been determined to survey both graduate and undergraduate students.

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