

# Lecturing Law with Powerpoint: What is the point?

By Tina Cockburn & Anne Matthew

Queensland University of Technology

## 1. Introduction

The escalation of the digital age has seen academics who teach law increasingly adopt powerpoint software as a teaching tool.<sup>1</sup> While this implementation of powerpoint reflects a prevalent commercial trend, the use of powerpoint in teaching is not justifiable unless it has the effect of enhancing student learning. Laurillard concurs: 'There is no point in using communications and information technology unless it clearly improves the quality of learning in some way'.<sup>2</sup>

This article reviews and reflects upon the impact of teaching with visual aids, such as powerpoint, on student learning. This is evaluated from the perspective of the student and the lecturer. The student perspective is revealed through reporting on the findings of a survey revealing the attitudes of students at the Queensland University of Technology (QUT) as to how powerpoint affects their learning. The lecturer's perspective is revealed through a case study of the use of powerpoint presentations designed to increase the effectiveness of teaching and learning in lectures in law at QUT. This article also suggests a number of powerpoint presentation techniques and offers some insight into how lecturers can best design their powerpoint presentations as visual aids.

## 2. Technology in teaching

There is a wide variety of technology available for use in teaching in higher education. As there is now an expectation that technology will be used in teaching, teachers are no longer faced with deciding whether to use technology. For example, the QUT Teaching and Learning Plan 2002-2006 says: "*QUT will adopt a variety of strategies which extend its reach, using the latest technology where appropriate*"<sup>3</sup> and the QUT Faculty of Law Strategic Plan 2003-2007 provides for the "integration of information technology [and] teaching"<sup>4</sup>. The contemporary issue as to the use of technology in higher education, therefore, is to consider, as part of the instructional design process, which technology is

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<sup>1</sup> This paper uses the term 'powerpoint' generally to refer not only to Microsoft PowerPoint but also to its commercially available competitors offering presentation software with similar features.

<sup>2</sup> Laurillard D, 'Using Communications and Information Technology Effectively' in McKeachie W, *Teaching Tips: Strategies, Research, and Theory for College and University Teachers* (10<sup>th</sup> ed, Houghton Mifflin Company, Boston, 1999), p 183.

<sup>3</sup> Context Statement.

<sup>4</sup> Objective 6.

most effective in terms of achieving high quality learning outcomes<sup>5</sup>.

The most common theme in contemporary writing about the use of technology in teaching is that effective teaching is not simply about learning and implementing new technology. What is most important is that teachers understand how to use the technology and are guided by educational principles in the selection of appropriate technology.<sup>6</sup> The use of particular technologies in university education will therefore depend upon desired learning objectives<sup>7</sup>.

In order to make a decision as to the appropriate use of technology in a lecture, student characteristics (including background experience, prior knowledge and abilities, preferred methods of learning, and motivation for learning) should be determined and learning objectives clearly established. Appropriate technology should be selected after evaluating which can best achieve the learning objectives and facilitate student learning<sup>8</sup>. The actual learning outcomes as a result of implementation of technology in teaching should then be evaluated and reflected upon in order to improve teaching.<sup>9</sup>

### 3. Teaching and Learning Objectives

Effective university teaching should aim to improve the quality of student learning, enable students to develop the skills of lifelong learning, and enhance the capacity of graduates to contribute to the wellbeing of the society in which they live<sup>10</sup>. Universities generally set teaching and learning goals to accord with such ideals. For example, the teaching and learning goals of QUT are “to ensure that QUT graduates possess knowledge, professional competence, a sense of community responsibility, and a capacity to continue their professional and personal development throughout their lives<sup>11</sup>”.

Ramsden<sup>12</sup> has described effective teaching in higher education by reference to these key principles:

- An ability to make the subject matter interesting, organise and explain clearly using appropriate teaching aids;
- Showing concern and respect for students and student learning;

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<sup>5</sup> Ramsden P, *Learning to Teach in Higher Education*, (Routledge, London, 1991), (referred to below as Ramsden, *Learning to Teach*), p 125; Makin Slaughter T, *Teaching with Media*, (Centre for the Study of Higher Education, University of Melbourne, Melbourne, 1990), p 4.

<sup>6</sup> Ramsden, *Learning to Teach in Higher Education*, p 8.

<sup>7</sup> Stedman L, *Technology in Teaching: A Discussion Paper*, (Queensland University of Technology, Brisbane, 1995), p5.

<sup>8</sup> Le Brun M & Johnstone R, *The Quiet Revolution: Improving Student Learning in Law*, (The Law Book Company Limited, Sydney, 1994), p 231.

<sup>9</sup> Stedman, pp 3-4.

<sup>10</sup> CAUT *Recognising and Rewarding Good Teaching in Australian Higher Education*, (Griffith Institute of Higher Education, Griffith University, Brisbane, 1995), at 1.1.

<sup>11</sup> QUT's Mission and Goals available online at <http://www.qut.edu.au/services/aboutqut/mission.jsp> (viewed 30 August 2005)

<sup>12</sup> Ramsden, *Learning to Teach*, pp 89, 96 and 103; see also Cannon R, *Lecturing*, (HERDSA Green Guides No 7, Adelaide, 1992), p 2.

- Adopting appropriate assessment and providing quality feedback;
- Establishing clear goals and intellectual challenges;
- Encouraging student independence, control and active engagement by using teaching methods and academic tasks that require students to learn actively, responsibly, and co-operatively; and
- A desire to learn from students and other sources about the effects of teaching and how it can be improved.

In particular, the author supports Ramsden's final proposition. The effectiveness of teaching can be increased by understanding how students learn and endeavouring to facilitate more effective learning. There has been a great deal of research undertaken into student approaches to learning, that is, how students experience and organise the subject matter of a learning task rather than how much they actually remember.

Student approaches to learning are usually classified according to the intention ('surface/deep' approaches) and the process of studying ('atomistic/holistic' approaches). A student who adopts a deep/holistic approach actively tries to understand the topic (deep learning) and places it in a wider context by relating its components in a connected, structured, holistic approach. It is generally recognised that the most effective approach (in terms of quality outcomes and higher grades) to learning is the 'deep/holistic' approach. This approach is the most desirable to encourage in higher education. For example the QUT Teaching and Learning Strategic Plan provides that it is necessary to 'implement and improve teaching strategies and assessment procedures that promote deep learning, ensure learning outcomes consistent with course objectives and promote self-directed, lifelong learning<sup>13</sup>."

#### **4. Using visual aids to improve the effectiveness of teaching and learning in lectures**

The traditional lecture has been criticised as encouraging surface rather than deep learning as it may not necessarily stimulate thinking, may promote a view of learning as remembering masses of isolated detail and may encourage students to perceive the lecturer as an unapproachably remote authority concerned with getting information into students' memories.

The task the lecturer faces ... is paradoxically how to make 'lecturing' less like a lecture (passive, rigid, routine knowledge transmission) and more like an active communication between teacher and students. In short, a teacher faced with a series of classes with a large group of students should plan to do things that encourage deep approaches to learning; these things imply dialogue, structured goals, and activity<sup>14</sup>.

Where a lecturer is faced with teaching in the large group lecture format, to teach

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<sup>13</sup>Queensland University of Technology (QUT), *Strategic Plan 2003-2007*.

<sup>14</sup> Ramsden, *Learning to Teach*, p 167.

effectively and encourage deep learning approaches, he or she must ensure that the lecture involves something more than information transfer. However the lecturer chooses to achieve this, good communication skills are of paramount importance<sup>15</sup>.

One of the key principles of good-communication is that speech complimented by appropriate visual supporting aids is more likely to be remembered. A study by the Wharton Business School has claimed that people remember 10% of what they read; 20% of what they hear; 30% of what they see and 70% of what they see and hear<sup>16</sup>. Students will therefore follow a lecture more easily if they are using more than one of their senses. Visual cues can clarify a statement, eliminate ambiguity, add detail and are therefore powerful instructional aids<sup>17</sup>.

Visual aids can also improve communication in lectures because they:

- procure attention
- add variety,
- save time when explaining complicated points,
- introduce, summarise or integrate ideas,
- illustrate things which can only be explained graphically,
- facilitate communication with non-English speaking students,
- give the speaker something to do, and
- remind the speaker of what comes next<sup>18</sup>.

As research indicates that student attention declines after the first few minutes of a lecture and that students lose concentration after about 20 minutes<sup>19</sup>, it therefore makes sense to use visual aids to provide interest and variety in lectures. Technology such as powerpoint can improve communication in lectures by enabling information to be presented in interesting and stimulating ways and assist students to follow the lecture. The results of a recent survey of students bear this out.

The second named author, conducted a survey of undergraduate law students in order to illicit student opinion on the impact of powerpoint on their learning, specifically when it was used as a teaching tool in large group lectures. Two student bodies were surveyed. The first group surveyed were 75 third year students from the QUT Faculty of Built Environment attending the author's lecture on Fundamental Issues in Contract Law

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<sup>15</sup> Le Brun & Johnstone, p 103; Ramsden, *Learning to Teach*, pp 111-118; CAUT, *Recognising and Rewarding Good Teaching in Australian Higher Education*, (Griffith Institute of Higher Education Griffith University, Brisbane, 1995), at 9.0.

<sup>16</sup> McCarthy P & Hatcher C, *Speaking Persuasively: How to make the most of your presentations*, (Allen & Unwin Pty Ltd, Sydney, 1996), p 151.

<sup>17</sup> Makin Slaughter T, *Teaching with Media*, (Centre for the Study of Higher Education, University of Melbourne, Melbourne, 1990), p 1; Johnstone R, 'Rethinking the teaching of law', (1990) 3 *Legal Education Rev* 17-59 at 43.

<sup>18</sup> Turk C, *Effective Speaking: Communicating in Speech*, (JW Arrowsmith Ltd, Bristol, 1985), pp 181-185, 209; Charlesworth H & Johnstone R, 'Show and Tell: A Primer on the Use of Overhead Projections in the Law Class' (1990) 10 *University of Tasmania Law Review* 50 at 60-61; Makin Slaughter, pp 2-3; Cannon, p 15; Le Brun & Johnstone, p 230; Queensland University of Technology (QUT) Educational Television Facility and the Academic Staff Development Unit, *Presenting with Powerpoint*, (QUT Educational TV, Brisbane, 1996).

<sup>19</sup> Le Brun & Johnstone, p 260.

and Trade Practices. The second group surveyed were 139 final year law students from the QUT Faculty of Law<sup>20</sup>.

70% of all students surveyed considered that powerpoint presentations in lectures made lectures more interesting. Almost 75% of all students surveyed considered that powerpoint presentations added variety to lectures<sup>21</sup>. Further, the survey results reveal that the use of powerpoint in lectures helped 96.6% of all students surveyed to follow the content of the lecture. These results are illustrated in Table 1, below.

**Survey Responses – Table 1**  
(Ranked by strength of total affirmative response)

		Agree		Disagree		Uncertain	
		%	#	%	#	%	#
Powerpoint presentations in large group lectures help me to follow the content of the lecture	Law	97.3%	111	0.9%	1	1.8%	2
	Built	95.3%	61	0	0	4.7%	3
	<b>Total</b>	<b>96.6%</b>	<b>172</b>	<b>0.6%</b>	<b>1</b>	<b>2.8%</b>	<b>5</b>
Powerpoint presentations in large group lectures add variety to the lecture	Law	76.7%	89	6%	7	16.4%	19
	Built	74.2%	49	7.6%	5	18.2%	12
	<b>Total</b>	<b>75.8%</b>	<b>138</b>	<b>6.6%</b>	<b>12</b>	<b>17%</b>	<b>31</b>
Powerpoint presentations in large group lectures make lectures more interesting	Law	68.4%	78	11.4%	13	19.3%	22
	Built	72.8%	48	9.1%	6	18.2%	12
	<b>Total</b>	<b>70.0%</b>	<b>126</b>	<b>10.5%</b>	<b>19</b>	<b>18.9%</b>	<b>34</b>

In addition to the abovementioned benefits of better communication in lectures, it is also possible to use carefully designed visual aids to challenge and stimulate students to think and actively participate in lectures and engage in deep approaches to learning<sup>22</sup>. The basic aim of instructional material should be to provide students with a framework from which they can acquire well organised and structured knowledge by interacting with the information and making it their own, using similar processes of reasoning to practising professionals<sup>23</sup>. Lecture preparation should therefore involve a consideration of which teaching strategies to adopt to maximise student learning. This will invariably involve the preparation of suitable visual aids. The key to successful communication in lectures is using suitable visual aids and not merely preparing visual aids to give a good performance:

While sterile and lifeless teaching is hardly conducive to the development of

<sup>20</sup> In addition 10 final year law student participated in a focus group. The discussions held by this group entirely supported the findings of the student surveys.

<sup>21</sup> The survey incorporated two questions asking students whether powerpoint made lectures more interesting than those without powerpoint. The first question was posed in the affirmative. 70% of all students agreed that powerpoint presentations in lectures made lectures more interested. Later in the survey the question was again asked, but this time it was posed in the negative. 66% of all student surveyed disagreed when asked if powerpoint presentations in large group lectures made lectures less interesting.

<sup>22</sup> Charlesworth & Johnstone, at 59.

<sup>23</sup> Le Brun & Johnstone, p 249.

understanding, colourful presentation is by no means sufficient for effective student learning. A good performance is not necessarily good teaching. In fact, an entertaining lecturer may leave students with a sense of having been entertained, but with little advancement of their learning<sup>24</sup>.

Any technological teaching aids ultimately used should be carefully integrated into the lecture and its purpose explained to students so that it is perceived to be relevant to the teaching and learning process and not merely a distraction<sup>25</sup>. Lecturers who blindly adopt technology in their teaching will be open to a criticism that they are just using 'gimmicks' which add nothing to their teaching and are purely for entertainment<sup>26</sup>. As McCarthy and Hatcher<sup>27</sup> have said:

The dangers for us in all of this, is to allow these potentially helpful tools, the technologies available to us, to divert us from what we are trying to achieve - good communication. We must not allow the technology to drive our communication. It will undoubtedly support and probably even influence and shape some aspects of our communication. But an awareness of just how seductive these new technologies are should act as a brake to keep control of how we use them.

McCarthy and Hatcher's warning is highlighted by the results of the student survey which raise the issue of over-featuring powerpoint presentations in lectures.

## **5. Over-featuring powerpoint presentations in lectures**

It appears that the presentation features of powerpoint including inter alia, sound, movement, graphics and colour are popular with presenters and lecturers. These features have the potential to raise interest, to keep attention and to encourage active engagement with the lecture materials. However, the survey results suggest that law lecturers should be very careful not to over-feature their powerpoint presentations.

The law group identified the distraction caused by sound, graphics, colour, movement and slide transition as the features of powerpoint that detracted most from their learning. This type of distraction was nominated by 34.8% of the Law group as the feature of powerpoint having the most negative impact on their learning. This trend was also reflected in the survey responses from the Built Environment group. Table 2.1 illustrates the comparative strength of this student response. Table 2.1 summarises the top six features of powerpoint presentations identified by students as having the most negative impact on their learning. The full table of responses is contained in Table 2.2.

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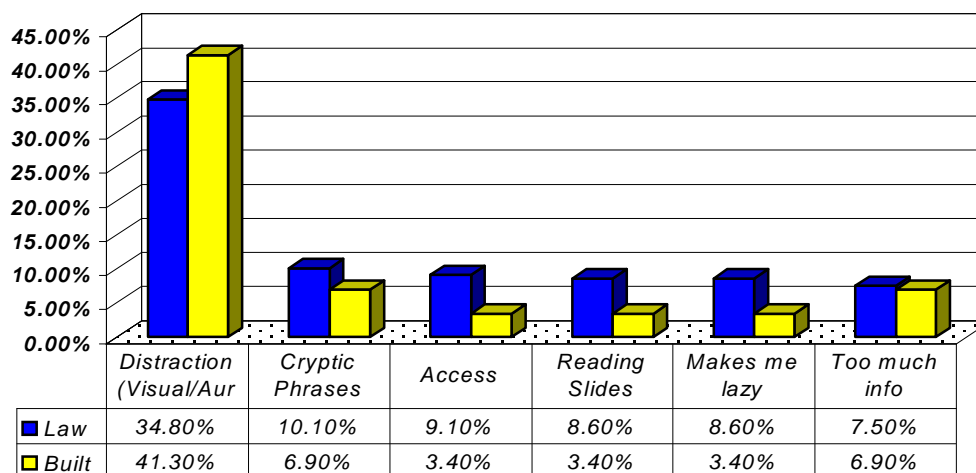
<sup>24</sup> Ramsden, *Learning to Teach*, p 74.

<sup>25</sup> Cannon, p 5; Le Brun & Johnstone, p 223.

<sup>26</sup> Le Brun & Johnstone, p 229.

<sup>27</sup> McCarthy & Hatcher, p 149.

**Table 2.1**  
**Top 6 Responses: Which features of powerpoint have the most negative impact on your learning?**  
 (Ranked by strength of Law response)



**Table 2.2**  
**Full Table of Responses**  
**Which features of powerpoint have the most negative impact on your learning?**  
 (Ranked by strength of Law response)

		Law 198 indications		Built 29 indications	
		%	#	%	#
1.	Visual/Aural distraction	34.8%	69	41.3%	12
2.	Too little information on slides or short 'cryptic' phrases	10.1%	20	6.9%	2
3.	When I can't access powerpoint slides before the lecture	9.1%	18	3.4%	1
4.	When lecturers read from the powerpoint slides without expanding much on the points in the slide	8.6%	17	3.4%	1
5.	Powerpoint makes me 'lazy'/'passive' in my learning	8.6%	17	3.4%	1
6.	Too much information on slides	7.5%	15	6.9%	2
7.	Powerpoint has no negative impact on my learning	3.5%	7	3.4%	1
8.	'Small font and lots of print'	3.0%	6	3.4%	1
9.	Powerpoint offers the temptation of 'getting by' without the lecture	3.0%	6	3.4%	1
10.	Powerpoint doesn't improve my note-taking skills/writing speed for exams	2.0%	4	0	0
11.	Slides can be misleading when the point appearing on the relevant slide does not actually explain the integral point of discussion	2.0%	4	3.4%	1
12.	Too many slides	1.5%	3	0	0

13.	When the speaker advances to a new idea that is not covered on the slides/clicks 'out of sync'.	1.5%	3	6.9%	2
14.	The dim lighting in the lecture theatre associated with powerpoint presentations	1.0%	2	0	0
15.	Boring	1.0%	2	3.4%	1
16.	Having to write, look and listen	1.0%	2	3.4%	1
17.	Set Agenda	0.5%	1	3.4%	1
18.	Reduces what I read	0.5%	1	0	0
19.	Annoying	0.5%	1	0	0
20.	Powerpoint inhibits open discussion	0	0	3.4%	1

Law students raised the following concerns of powerpoint's use in lectures:

- *Powerpoint is a distraction to what the lecturer is saying.*
- *Powerpoint directs my attention away from the speaker.*
- *Don't use sound effects; Don't have the next bullet point circling the screen prior to landing in it's spot.*
- *Delete the pictures.*
- *Turn off the slides every now and then so we can focus our attention on the lecturer.*
- *I seem to end up trying to tune out the lecturer so I can concentrate on the powerpoints.*
- *Irrelevant graphics are belittling – this is not kindergarten*
- *Less is best*

These results suggest that academics lecturing in law should carefully consider whether they are over-featuring their presentations. Powerpoint has the potential to be a powerful visual aid, but it may not have the desired effect on learning if the technical wizardry accompanying the visuals detracts from student learning.

Students were also asked to identify the features of powerpoint that had the most positive impact on their learning. 22.6% of the Built Environment group and just 7.4% of the Law group spontaneously identified the visual stimulation offered in powerpoint (by way of fonts, colours, graphics and movement) as having a positive impact on their learning. Clearly some students perceive that the visual stimulation of powerpoint enhances their learning although this was not a particularly strong indication from the Law group.

Student comments included:

- *I learn by looking and listening so powerpoint is very helpful*
- *Having a visual aid helps me to focus my attention*
- *Powerpoint is clear and easy to read*
- *The slides are clear and legible. Time is not spent trying to understand words. I can listen to the lecture more.*
- *Slides are visually interesting and make the lecture easier to follow*
- *Slides are visible and unobtrusive. There is less mucking around, no glare and clear information.*



This last comment was made by a student from the Built Environment group. It is clearly a comparison of overhead transparencies and powerpoint.

## 6. Powerpoint v. Overheads

Law lecturers debating whether powerpoint offers any more to their students than a good bundle of overheads may be interested in a further exploration of the Built Environment result on the visual features of powerpoint, as these students had very little experience with powerpoint. Most of their classes were conducted using overhead transparencies as a visual aid.

In Table 2.1, 41.3% of students from the Built Environment group identified the visual features of powerpoint as having the most negative impact on their learning. However, as we have seen 22.6% of this same group identified the visual features of powerpoint as having the most positive impact on their learning<sup>28</sup>. Further analysis of these responses revealed that this group was deeply divided into two camps: Students either liked these features of powerpoint or they found them an unnecessary distraction.

At the outset of the surveys it was anticipated that the Built Environment students would be receptive to the visual presentation features of powerpoint for two reasons:

1. These students came from three streams studied within the Faculty: Industrial Design, Interior Design and Architecture. Given this academic background, there was a greater likelihood of their being visual learners, and
2. Powerpoint technology was not frequently used in their usual classes. Some had not experienced powerpoint in lectures before. It emerged from their student survey responses that their teachers typically used overhead transparencies as they offered higher accuracy of image, which was often necessary when discussing particular dimensions and specifications.

There was a chance that these students were more likely to be initially dazzled by the presentation features of powerpoint which, when compared to black and white overheads, are quite striking.

A closer examination of these results is revealing. Regardless of whether or not they considered powerpoint a distraction, students from this group frequently commented that they favoured the use of powerpoint rather than overhead transparencies. They considered that the transition from slide to slide was far less disruptive to the lecture than changing overhead transparencies where the lecturer frequently has to shuffle through a bundle of overhead transparencies and then re-focus the projector on the next overhead. At the same time, many of these students found the background colour, graphics and transition through the point by point format unnecessary and distracting. Student comments included:

- *Powerpoint is very fluid; the technique of being able to cue to the next point is*

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<sup>28</sup> This was the highest category of response from the Built Environment group to this question.

- very user-friendly and engaging*
- *[Powerpoint] looks a lot better than reading normal overhead notes.*
  - *[Powerpoint] is more interesting, easier to understand, more interactive and faster.*
  - *With powerpoint there is no annoying glare or overhead projector in the way.*

## **7. Why choose powerpoint?**

Powerpoint allows a lecturer to take advantage of the educational benefits of using visual aids and technology in lectures in order to improve the effectiveness of teaching and learning. Teaching with powerpoint does not necessarily involve radical changes to teaching approaches, though it can if the lecturer so wishes. Even as a tool to create better designed black and white or colour transparencies, the default settings of the powerpoint software require a lecturer to abide by, or at least consider, basic principles of instructional design in the point sizes of text, bullet points, framing and layout of slides<sup>29</sup>. The results of the student survey suggest that lecturers should take particular care in designing their powerpoint presentations and to ensure that they are not so over-featured as to become distracting.

The powerpoint presentation software is particularly attractive as it is user friendly, easy to learn, requires limited planning, is very versatile, and, provided the appropriate software and hardware is available, enables supporting materials such as slides and handouts for lectures to be prepared relatively quickly and inexpensively<sup>30</sup>. Another recognised benefit of using powerpoint presentations in lectures is that preparing powerpoint slides encourages lecturer organisation as it is necessary to prepare the presentation and refine its content before class.

## **8. Evaluating the effectiveness of using powerpoint presentations in lectures**

The value of teaching technology such as powerpoint presentations depends on whether it is possible to demonstrate that the technology is able to deliver benefits for teaching and learning. This requires sound evaluation of its implementation<sup>31</sup>. In order to evaluate the effectiveness of using powerpoint presentations in lectures, we must consider whether the presentations help students to learn<sup>32</sup>. Therefore, it is worthwhile, especially when first using powerpoint, to ask the students for feedback as to whether they consider the presentation to be useful and whether it is enhancing the learning

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<sup>29</sup> Jackson SF, *Case Study: The Use of Powerpoint in Teaching Comparative Politics*, 1997, [<http://microsoft.com/education/hed/products.htm#comparative> <http://www.iup.edu/~f212sjackson/complex> (Accessed 11 March 2001)].

<sup>30</sup> Grandgenett D, Grandgenett N, Topp N & Benton J, 'Using Computer Assisted Presentations: Suggestions from the Audience' (1995) *Educational Technology Review* 19-22, at 19.

<sup>31</sup> Stedman, p 3.

<sup>32</sup> CAUT, pp 6-10

process. If it does not enhance student learning, it should not be used.

## **8.1 Student Feedback: How students perceive that powerpoint impacts on their learning**

Two student surveys studies of the impact of powerpoint presentations on teaching and student learning support an argument that both students and teachers generally consider that the use of powerpoint presentations may help enhance the effectiveness of teaching and learning in lectures.

### **8.1.1 The Pennsylvania Study**

The first survey was conducted by a lecturer in comparative politics at the Indiana University of Pennsylvania<sup>33</sup>. He asked students to respond to various statements on a scale ranging from strongly agree to strongly disagree. The results of his study can be summarised as follows:

1. 'Powerpoint presentations supported the content of the course'  
Strongly agree 68%  
Agree 32%  
Neutral 0%  
Disagree 0%  
Strongly disagree 0%
2. 'Presentations made lectures organised.' (or lecturers?)  
Strongly agree 68%  
Agree 32%  
Neutral 0%  
Disagree 0%  
Strongly disagree 0%
3. 'Presentations helped me take notes.'  
Strongly agree 47%  
Agree 40%  
Neutral 6%  
Disagree 4%  
Strongly disagree 2%
4. 'Presentations made lectures interesting.'  
Strongly agree 49%  
Agree 43%  
Neutral 6%  
Disagree 2%

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<sup>33</sup>Jackson SF, *Case Study: The Use of Powerpoint in Teaching Comparative Politics*, 1997, [<http://microsoft.com/education/hed/products.htm#comparative> <http://www.iup.edu/~f212sjackson/complex> (Accessed 11 March 2001)].

Strongly disagree-0%

5. 'Presentations helped me understand the material.'

Strongly agree 36%

Agree 51 %

Neutral 9%

Disagree 4%

Strongly disagree 0%

6. 'Graphics, photos and clipart are helpful.'

Strongly agree 36%

Agree 51 %

Neutral 9%

Disagree 4%

Strongly disagree 0%

Some of the comments made by students included:

- *'I am a visual learner and it helps me understand concepts better.'*
- *'[the presentation] allowed me to pay more attention to the lecture, instead of having to try to take detailed notes.'*
- *'I could concentrate on the discussion better and organise my notes more efficiently with the presentations.'*
- *'They made the classes lively; helped me concentrate all the time.'*
- *'They keep information organised and worded in a way that I can easily grasp the concepts.'*

The results of this survey tend to support the proposition that students generally perceive powerpoint as an effective tool to improve communication in lectures and assist their learning.

## The Survey of QUT Students

The survey of QUT students conducted by the co-author also supports that this does indeed appear to be the student perception. 94% of all students surveyed considered that powerpoint presentations in large group lectures helped them to learn<sup>34</sup>. Students were asked whether powerpoint presentations in lectures helped them to understand the topics better than they would without a powerpoint presentation. 75.6% of the Law group and 64% of the Built Environment Group agreed. Almost 77% of all students surveyed considered that powerpoint presentations in large group lectures helped to keep the lecturer focused on important points. Further 92% of all students surveyed considered that these powerpoint presentations helped keep their own attention focused on important points. These results are illustrated in Table 3, below.

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<sup>34</sup> These results were tested when the question was asked again in a negative fashion. 78.2% of all students surveyed disagreed with this statement: Powerpoint presentations in large group lectures do not aid my learning.

**Survey Responses – Table 3**  
(Ranked by strength of total affirmative response)

		Agree		Disagree		Uncertain	
		%	#	%	#	%	#
Powerpoint presentations in large group lectures help me to learn	Law	93.2%	109	1.7%	2	5.1%	6
	Built	95.5%	64	0	0	4.5%	3
	<b>Total</b>	<b>94.0%</b>	173	1.1%	2	4.9%	9
Powerpoint presentations in large group lectures help keep my attention focused on important points	Law	92.1%	104	2.7%	3	5.3%	6
	Built	92.3%	60	1.5%	1	6.2%	4
	<b>Total</b>	<b>92.1%</b>	164	2.3%	4	5.6%	10
Powerpoint presentations in large group lectures keep the lecturer focused on important points	Law	79.4%	89	2.7%	3	17%	19
	Built	71.9%	46	7.9%	5	18.8%	12
	<b>Total</b>	<b>76.7%</b>	125	4.5%	8	17.6%	31
Powerpoint presentations in large group lectures help me to understand topics better than I would without a powerpoint presentation	Law	75.6%	71	23.9%	8	16%	15
	Built	64.6%	42	12.3%	8	23.1%	15
	<b>Total</b>	<b>71.1%</b>	113	27.7%	16	18.9%	30

Students clearly felt that powerpoint helped them to learn. But how? Students were asked a number of questions designed to ascertain whether students perceived that powerpoint encouraged them to think about the subject of the lecture, stimulated their interest or helped them to relate the material being studied to their past experience. The results, set out in Table 4 below, suggest that although there was a broad base of support for these propositions, overwhelmingly students perceived that powerpoint helped them to remember the information being lectured.

**Survey Responses – Table 4**  
(Ranked by strength of total affirmative response)

		Agree		Disagree		Uncertain	
		%	#	%	#	%	#
Powerpoint presentations in large group lectures make it easier for me to remember what I am learning	Law	84.9%	79	4.3%	4	10.8%	10
	Built	84.6%	55	4.6%	3	10.8%	7
	<b>Total</b>	<b>84.8%</b>	134	4.4%	7	10.8%	17
Powerpoint presentations in large group lectures aid in encouraging me to think about the subject matter	Law	69.6%	78	11.6%	13	17.9%	20
	Built	51.6%	32	1.6%	6	37.1%	23
	<b>Total</b>	<b>63.1%</b>	110	10.9%	19	24.7%	43
Powerpoint presentations in large group lectures aid in stimulating my interest in the subject area	Law	59.3%	67	12.3%	14	27.4%	31
	Built	53.9%	35	1.5%	5	36.9%	24
	<b>Total</b>	<b>57.3%</b>	102	10.6%	19	30.9%	55
Powerpoint presentations in large group lectures help me relate what I am learning to my past experiences and knowledge	Law	53.2%	50	18.1%	17	27.7%	26
	Built	35.9%	23	21.9%	14	39.1%	25
	<b>Total</b>	<b>46.2%</b>	73	19.6%	31	32.3%	51

Both the Pennsylvania study and the survey of QUT students utilised questionnaires or

discussions with individual students or groups of students to obtain student feedback. However, it is not necessary to use formal questionnaires to evaluate the impact of teaching tools such as powerpoint.

Other simple methods of evaluation include peer review (where a colleague is invited to observe and provide constructive feedback) and self evaluation such as keeping a written record of observations, for example a reflective journal<sup>35</sup>.

The first named co-author pursued several of these methods of evaluation when reflecting on the effectiveness of teaching with powerpoint in her own lectures. What follows is a case study that is incorporated to demonstrate the usefulness of employing evaluation techniques to evaluate and improve teaching.

## **8.2 Powerpoint presentations in Equity and Trusts – A Case Study: the lecturer’s perspective**

The first named co-author has been Unit Coordinator of the core second year undergraduate law units, *Equity* LWB240 and *Trusts* LWB241, in which approximately 550 students are enrolled<sup>36</sup>, and is responsible for the delivery of a block of five – six weeks of lectures each semester. Each lecture is presented twice per week and powerpoint presentations are integrated into each lecture.

### **8.2.1 Designing the powerpoint presentation**

In designing the powerpoint presentations, key instructional design principles such as simplicity, clarity and relevance are kept in mind and the presentation is intended to be relevant to and supplementary to, the lecture content.

The same background is used for each slide in a presentation. Slides are mainly comprised of bullet point lists of major points using simple language. Courier font, 24 point size is mostly used except for headings which were generally larger. In most cases lower case text is used, which is capitalised at the beginning of sentences or points; italics are used for case names. As there is little clip art relevant to the subject matter, clip art is not often used.

### **8.2.2 Powerpoint presentation techniques**

The powerpoint presentation is integrated into the lecture in a variety of ways. Preliminary slides gave an overview of the structure of the lecture; slides containing headings identified when new topics are introduced; some slides are used to summarise facts of important cases; slides contain summaries of important points; while other slides contain problems for consideration by the class.

Powerpoint slides are made available on the unit’s online site for downloading by students prior to the lecture; students are encouraged to bring them to the lecture to

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<sup>35</sup> Cannon, pp 29-30; Ramsden, *Learning to Teach*, pp 217-248; Le Brun and Johnstone, pp 331-376.

<sup>36</sup> Including approximately 100 external students.

avoid the need to copy down slides during the lecture. Students are, however, allowed sufficient time to read and consider the contents of the slides in lectures.

In preparation for each semester, particularly in the early years of using powerpoints, the lecturer found it helpful to attend training sessions and refresher courses offered by the teaching and learning support services at QUT. In addition, a practice run of the presentation on her computer at home (taking the opportunity to mark-up notes as a prompt for display of particular slides), and early arrival at the lecture theatre in order to install the file and check that the equipment was properly working, have been found to be key aspects of a successful presentation. A hard copy of the help list of key powerpoint commands kept on the lectern with lecture notes has also proved useful. Despite these precautions, malfunctions occasionally arose; backups of printed copies of the slides for the visualiser and overhead transparencies (for lecture theatres without a visualiser) have proved invaluable and allowed lectures to proceed.

Feedback from students has indicated that they generally find it distracting to have superseded slides continuously projected, so the screen is sometimes blanked when a slide was not being referred to.

A hard copy of the handout containing all slides, with each slide numbered, was kept on the lectern during the lecture presentation and lecture notes were marked-up to indicate where particular slides fitted into the lecture structure. Numbering the slides and keeping a hard copy of them was useful as a quick reference if it was necessary to revisit slides.

### **8.2.3 Evaluation of powerpoint presentations**

The powerpoint presentations were evaluated in two ways. First, the lecturer self evaluated the presentations, using a reflective journal to record observations. Second, surveys of students were conducted, including by informal discussion with individual students and groups of students; a survey of students relating to the effectiveness of powerpoint presentations and a formal Student Evaluation of Teaching survey conducted under the supervision of the Academic Staff Development Unit of the University.

Entries in the journal related to all aspects of the lecturer's teaching and student learning, however a particular focus of the entries was the powerpoint presentation. A journal entry prior to the first lecture in which powerpoint was used reflected apprehension as to the use of the new technology 'Biggest fear - will powerpoint work? - First time I've used powerpoint!' Other entries throughout the journal reflect that the lecturer was generally pleased with the powerpoint presentations, although she found computer malfunction frustrating, especially as the difficulties could not have been overcome by improved technical skills or training. An entry in the journal indicates that the lecturer was thankful that she had a backup plan, even though it was tedious to prepare both overheads and slides (as one of the lecture theatres had an overhead projector whereas the other had a visualiser). There is a comment in the journal which indicates that although backup slides/transparencies enabled the lecture to proceed essentially as planned, this was 'a pain', as the presentations were not always suited to

direct translation to overheads or slides. For example the lecturer is inclined to use more powerpoint slides than she would overheads and overheads are slower and more tedious to use. Generally journal entries reflect that the lecturer found powerpoint easy to learn and use, flexible, and useful. It was important to allow ample time before the lecture to refine the lecture content, design the slides and print out handouts so that they could be available in the library prior to the lecture.

Informal discussions with students indicated that students were generally appreciative of the effort in giving a powerpoint presentation, particularly the structure and overview provided. They also considered that it was beneficial to have the slides available prior to the lecture. Other student comments related to colour combinations on slides sometimes being difficult to read - the lecturer subsequently amended the slides to use simpler backgrounds with contrasting colours and light colours on a dark background. Finally, some students commented that sometimes the effect of the powerpoint presentation was that the lecture was 'too slick' in the sense that the lecture proceeded too fast - again this is a factor the lecturer has been wary of in future presentations.

The first survey of students took the form of a request for non-compulsory anonymous written responses to a survey of the factors which increase and decrease the effectiveness of powerpoint presentations generally, without any particular focus on the lecturer's presentations. The intention was to obtain data as to students' experiences of powerpoint presentations in lectures in law generally. There were 34 valid responses to the survey, the results of which are summarised below, using the students' words.

**'Identify any features of the powerpoint presentation which increase its effectiveness':**

- *being there; it has been good so far - not too much, not too little; all good; keep up the good work more pictures; pretty pictures*
- *clear summary of area; its brevity; nutshell style is good; absence of blah blah blah is good; condensed; the fact that the information is summarised and you don't miss the important points; a good summary of the main points; useful summary and overview; puts lecture information in structure; clear concise statements of law and principles; important points of cases and issues on powerpoint; cases - main points; elements of issues set out*
- *good to take notes from; you don't have to write all the time and thus can understand things- better at the end of the lecture as you can absorb what is said; fact that info is set out and if you miss something said it is hopefully noted on screen*
- *on limited access; putting the OHT/slides in LAC is very useful; the fact that copies are in LAC in the library; availability of powerpoint summaries in library is good also*
- *clarity; clearer to read; big writing; clear; neater and more efficient than overheads or the visualiser; easier to read than overheads; clear easy to read;*



*it is big and easily seen; easy to read and understand better than normal overhead; easily visualised; information is well set out on the powerpoint*

- *pale colours on dark background; colour schemes*
- *can show one point at a time so students know what discussion is directed towards; points can be presented one at a time; step by step use*

**'Identify any features of the powerpoint presentation which decrease its effectiveness'**

- *none*
- *too brief to put the material in the context of the lecture although this is overcome by the lecturer; its lack of prolonged explanations; sometimes limited content; limited notes should be broadened*
- *too much information on the one slide; sometimes too much data presents reflection problems*
- *no sound ie pings when new point on board; should make a noise when a new point is on the board*
- *difficult to see an overall structure; difficult to know when we have moved on to a new section or main point*
- *too small*
- *occasional use of colours not conducive to easy reading; poor colour combinations that impair visibility*
- *(NB not in this particular case) lecturers should be taught how to use the equipment; some lecturer's ability in the area; sometimes lecturers have to spend ages fixing it and it wastes time but this will probably get better with time and staff experience; when the computer does not work or the lecturer cannot get it restarted; most of the lecturers don't know how to use it maybe it should come with instructions!; most of them don't know how to use it, the lack of training given to lecturers on how to use not only those but the lecture theatre lights when using the powerpoint presentations; time it takes for lecturers to work out how to use it*
- *flickering*
- *not left on long enough; slides run too quickly; speed can sometimes be a problem*
- *students don't concentrate on what is being said while copying; not having enough time to write it down*

- *hard copy should be part of study guide*
- *hard to find in limited access collection*

**‘Do you have any suggestions as to how a presenter giving a powerpoint presentation can be more effective?’** You may wish to classify your suggestions under the following headings: a) the presenter; b) the presentation structure; c) the environment (lecture theatre); d) the equipment.’

**a) the presenter**

- *Trouble shooter manual should be given to presenters; Nobody thanks a lecturer for technology that does not produce the goods; give them all a lesson how to work it*
- *Add oral ideas, background and other relevant material not on the powerpoint slides*
- *encourage use to students*
- *this lecture 1st time in course encouraged to get and are actually put in LAC before lecture. This is excellent. We are here to learn, not to learn how to paraphrase etc; accompanying handouts*
- *use the function that introduces one point at a time to the screen (I like that)*
- *use contrasting colours*

**b) the presentation structure**

- *make sure that point is visual on screen before general discussion about it so that notes remain structured*
- *refer back to overall structure before beginning the next main point - so we know where the lecture is up to*

The conclusions that can be drawn from this survey are that students generally believe that powerpoint presentations can improve communication in lectures, particularly due to clarity, structure and availability prior to the lecture. Student comments also indicate that powerpoint has the potential to facilitate deep learning as students can reflect on the lecture and work from the structure given to make the material their own. However the students did note that in some cases more care should be taken with the design of the slides, for example colour combinations and the amount of material on the slide. A common comment related to the technical competency (or lack thereof) of presenters. The students are not at all sympathetic towards lecturers who cannot use the equipment. Consider one student's response:

- *Nobody thanks a lecturer for technology that does not produce the goods.*

Finally in relation to the presentation, students noted that speed can be a problem and that it is important to state where particular slides fit into the overall structure.

The final survey of students was a formal student evaluation of teaching conducted in both the full-time day class and the part-time evening class. There were 145 valid responses. Responses to the survey questions relevant to the use of powerpoint in lectures can be summarised as follows:

1. 'The lecturer uses relevant audio/visual material to illustrate points made in lectures'

Strongly Agree 50%  
Agree 39%  
Neutral 10%  
Disagree 0%  
Strongly Disagree 0%  
No answer 1%

2. 'The lecturer is well organised and prepared for class'

Strongly Agree 49%  
Agree 43%  
Neutral 3%  
Disagree 4%  
Strongly Disagree 0%

3. 'The lecturer is enthusiastic about teaching'

Strongly Agree 48%  
Agree 46%  
Neutral 5%  
Disagree 1 %  
Strongly Disagree 0%  
No answer 1%

The results of this case study may support the argument that students perceived that the powerpoint presentations increased the effectiveness of teaching in lectures in law. A majority of the students considered that the audio visual materials were relevant to

illustrate points made in lectures. Furthermore it is possible that the use of powerpoint presentations may have been a factor influencing a majority of students to indicate that they considered that the lecturer was organised and prepared for class and enthusiastic about teaching.

## 9. Important considerations when considering the use of powerpoint in lectures

The following matters should be considered when deciding whether to use powerpoint presentations in law lectures:

- Is the subject matter of the lecture suitable to a visual approach?
- Is the necessary hardware and software available for use by the lecturer in preparing the presentation and in the lecture theatre for presenting it?
- Is the lecture theatre suitable for a powerpoint presentation. For example is lighting adjustable to allow the room to be sufficiently darkened for students to see the powerpoint presentation yet still provide sufficient light for students to be able to take notes and for the lecturer to see the students' faces?
- Is the lecturer willing to learn new technology and apply it to his or her teaching, bearing in mind that powerpoint is surprisingly easy to learn and use?
- Is the lecturer willing to spend time before class preparing the presentation and setting up the lecture theatre?
- Is the lecturer prepared for potential equipment problems?
- Most importantly, has the lecturer carefully considered the purpose and sequence of the displayed information to ensure that it directly contributes to the overall communication goal of the lecture? Impressive computer generated visual presentations are not always better in getting a particular message across. The presentation must be carefully integrated into the lecture otherwise communication of the message may actually be hindered.<sup>37</sup>

## 10. Designing the powerpoint presentation

It has been suggested that the principles of instructional design which apply to powerpoint presentations are essentially the same as those which apply to overhead transparencies. The primary purpose is to make communication more effective as good visual design facilitates communication.<sup>38</sup>

The key instructional design principles for effective projected visuals are: simplicity,

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<sup>37</sup> Grandgenett, Grandgenett, Topp & Benton, p 19; see generally, Jackson, *Case Study*.

<sup>38</sup> See generally, Bagdon K and Ryan Y, 'Using Teaching Technologies', in Ballantyne, Borthwick and Packer (eds), *QUT Enhancing Teaching and Learning Series*, Issue 9, (Queensland University of Technology Academic Staff Development Unit, Brisbane, 1996); Queensland University of Technology (QUT) Educational Television Facility and the Academic Staff Development Unit (ASDU), *Presenting with Powerpoint*, (QUT Educational TV, Brisbane, 1996).

clarity (including legibility and visibility), and relevance.<sup>39</sup> The powerpoint presentation should be relevant to and appropriate for what is being said and done in the lecture. The technology must support rather than determine the teaching methods.<sup>40</sup>

In particular, the literature<sup>41</sup> indicates that the following matters should be taken into account in the design of powerpoint presentations. The considerations are presented in the form of a checklist of matters to be considered in relation to various aspects of the powerpoint design.

## 10.1 Background

- The background should be uncluttered.
- The pattern and colours should enhance the main message of each visual and not be distracting.
- Ensure that there is consistency in screen layout in a presentation. Communication will be more effective if the audience can anticipate similarly structured screens using the same background and toning colours.

## 10.2 Colour

- Use appropriate colours for emphasis, differentiation, recognition and uniformity.
- Keep the use of different colours to a minimum and avoid clashing colours.
- Colour combinations and contrasts of lettering and background are critical for legibility. Some studies have indicated that the most legible colour combination is black on yellow; then blue on white; then black on white; then yellow on black; then white on black. Other studies indicate that on a dark background, green, white, yellow and cyan (pale blue) are the easiest to read, whereas on a light background black, dark blue and magenta are easiest to read. Avoid combinations of red and green because a small percentage of students are colour blind.

## 10.3 Text

- Use minimal text on the screen. Present a single message, idea or concept on each image using as few words as possible. The text should be comprised of no more than 6 words per line and 8 lines (6 lines if the class is large) per slide.
- Often numbered or bullet point lists of main headings are sufficient.

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<sup>39</sup> Turk , pp 186-195, 209; Makin Slaughter T, p 14; Charlesworth and Johnstone, p 62; Le Brun & Johnstone, p 238.

<sup>40</sup> Joughin G and Gardiner D, *A Framework for Teaching and Learning Law*, (Centre for Legal Education, Sydney, 1996), p46.

<sup>41</sup> See for example Bagdon K and Ryan Y, 'Using Teaching Technologies', in Ballantyne, Borthwick and Packer (eds), *QUT Enhancing Teaching and Learning Series*, Issue 9, (Queensland University of Technology Academic Staff Development Unit, Brisbane, 1996); Queensland University of Technology (QUT) Educational Television Facility and the Academic Staff Development Unit (ASDU), *Presenting with Powerpoint*, (QUT Educational TV, Brisbane, 1996); Turk , pp 186-195, 209; Makin Slaughter T, p 14; Charlesworth and Johnstone, p 62; Le Brun & Johnstone, p 238; Joughin G and Gardiner D, *A Framework for Teaching and Learning Law*, (Centre for Legal Education, Sydney, 1996), p46.

- Use clear language and avoid distracting, irrelevant detail.

## 10.4 Font

- Use simple, 'clean', easy to read font types, such as Courier, Times, Palatino, Roman or Helvetica and not cursive fonts. Keep the use of italics to a minimum (use italics for discipline specific terms only).
- Use a font size which is clearly and comfortably visible from all sections of the room such as 24 point bold, although font size does depend upon the class size.
- Make headings stand out by using a larger font size and bold type.
- Use the same font type and size for each slide in a presentation.

## 10.5 Case

- Use lower case with capitals where appropriate. Lower case letters are easier to read than capitals of the same size as they have more visual cues than capitals such as protruding tails, dots and extended strokes.

## 10.6 Graphics and Special Effects

- Avoid over-use of clip art and graphics to illustrate slides. This may look amateurish.
- Use gimmicks (such as flying text in or sprinkle down) sparingly. Text being presented on screen in a different order than we normally read (viz left to right) is often distracting and confusing.
- Images such as pictures, diagrams and sketches are often more effective on a slide than words, however every detail of an image must be immediately recognisable and all symbols and jargon used on images should be clearly identified.

# 11. Powerpoint presentation techniques

A successful powerpoint presentation in a lecture involves more than merely carefully designing the slides. The best prepared powerpoint presentation from an instructional design perspective may be ineffective if careful thought and planning is not given to the actual delivery of the presentation.

The physical environment should be suitable for a powerpoint presentation. Obviously it is critical to ensure that the appropriate hardware and software is available in the lecture theatre where the lecture is being delivered, and that it is working and correctly located in the room so that all students can see the presentation.<sup>42</sup> If time permits, a practice run through the presentation prior to the lecture in the actual lecture theatre will reveal any glitches in the presentation and any shortcomings in the lecturer's ability to use the

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<sup>42</sup> Cannon, pp 20-21; Le Brun and Johnstone, pp 232-233.

technology. Most students are used to seeing technology operated professionally and are therefore unlikely to have patience with a lecturer who cannot do so. As equipment failures may arise, it is important to have a contingency plan such as backup overhead transparencies or handouts.<sup>43</sup>

As to the actual delivery of the powerpoint presentation, it has been suggested that the following considerations may enhance communication and therefore the effectiveness of teaching and learning in the lecture:

- Lecture notes should be marked-up to indicate where particular slides fit in to the lecture structure.
- The students, not the projection screen, should be spoken to.
- The lecturer should be careful not to stand so as to obstruct the student's view of the screen.
- The screen should be blanked out at times when a slide is not being referred to. Leaving superseded slides on a screen can be distracting.
- Presentation techniques should be varied throughout the course of the lecture, for example the contents of the slides can be revealed gradually as class discussion progresses; a slide may be presented to summarise key points after a detailed discussion or slides may be used to present fact scenarios for discussion.
- A slide should be projected onto the screen for a sufficient time to allow students to read, study and absorb the image. If the slide requires some thought by students, the lecturer should say as little as possible while students are considering it, other than perhaps a basic explanation of what to look for. When appropriate, students should be given time to study illustrations, take notes, or make a copy.
- As students are often preoccupied with copying down slides, rather than thinking about their contents, it may be appropriate to distribute copies of important slides, make a bullet point list or a handout using the print function on the powerpoint software or allowing students to view, copy or download slides before the lecture, during breaks or after the lecture.
- Special arrangements should be made for students with visual or hearing impairments such as reading out material which has been displayed, giving partially sighted students a handout, or providing subtitles or summary notes to students with impaired hearing.
- The technology should not be over used otherwise the students may become drowsy, bored and disengaged.<sup>44</sup>

## 12. The Nebraska Study

A team of academics from the University of Nebraska at Omaha, Nebraska, have

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<sup>43</sup> Le Brun and Johnstone, pp 232-233.

<sup>44</sup> Turk, pp 186-195, 209; Charlesworth and Johnstone, pp 61-63; Le Brun and Johnstone, pp 232-233, 239-240.

surveyed teachers familiar with computer assisted presentations.<sup>45</sup> It is useful to note the comments made by designers and users of powerpoint presentations to a series of open ended questions. The results of the study can be summarised as follows:

**Elements increasing effectiveness of powerpoint presentations:**

- flexibility
- easy to modify
- ability to use graphics and sound.

**Elements decreasing effectiveness of powerpoint presentations:**

**a) the presenter**

- unprepared for equipment failure
- inability to talk to a presenter either before, during or after the presentation due to their considerable involvement in equipment related tasks

**b) the presentation**

- 'information overload': too much information given by presentation itself, or too much information on individual slides or frames of the presentation
- difficulty in hearing or seeing a presenter who was sitting down behind a mountain of computer equipment or who spent most of their time explaining the equipment or software, rather presenting the topic

**c) environment**

- presentation is made in a very dark room

**Suggestions for improvement of powerpoint presentations:**

**a) The presenter**

- allow and be available for interaction with the audience
- maintain eye contact with the audience

**b) The presentation**

- use a good presentation structure
- avoid 'information overload'
- use good pacing

**c) The environment**

- don't make the room too dark
- fill the screen with the projected display

**The equipment**

- be prepared for equipment failure
- double check equipment ahead of time
- focus on the message and not the equipment

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<sup>45</sup>Grandgenett, Grandgenett, Topp & Benton, pp 19-22, 37.



This study suggests that the effectiveness of a powerpoint presentation depends to a great extent on the presenter's consideration of key instructional design principles and the actual delivery of the presentation. Presenters should ensure that they are aware of the instructional design principles and presentation design considerations referred to earlier in this paper. The technology should not be allowed to drive the presentation. Equally the lecturer must know how to drive the technology.

## **13. Conclusion**

It is clear that teaching and learning in higher education are closely linked. Therefore in order to improve our teaching we must carefully reflect upon its impact upon student learning. If teaching results in enhanced student learning it is effective.

The difficulties involved in encouraging desirable approaches to learning, when teaching through lectures, may be overcome to some extent by the use of visual aids and technologies. It has been established that visual aids in lectures can improve communications, thus facilitating student learning. If the visual aids are carefully designed they may stimulate students to think, actively participate in lectures and engage with the lecture material, thus promoting deep/holistic approaches to learning. Conversely, over-featuring powerpoint presentations can significantly detract from the learning experience.

Technology may also increase the effectiveness of teaching and hence student learning in similar ways. However it is fundamental that careful consideration is given to the selection and use of the technology. Furthermore the use of the technology must be carefully integrated into the lecture in order to supplement teaching and enhance student learning. The use of the technology must be subordinated to teaching and learning goals rather than determining those goals.

Powerpoint allows a lecturer to take advantage of the educational benefits of using visual aids and technology in lectures in order to improve the effectiveness of teaching and learning. In the design of the powerpoint presentation, key instructional design principles such as simplicity, clarity and relevance must be considered and careful thought must be given to the actual delivery of the presentation.

As the validity of powerpoint presentations as a teaching strategy will depend upon whether it is possible to demonstrate that the technology is able to deliver benefits for teaching and learning, its implementation must be carefully evaluated. In order to evaluate the effectiveness of using powerpoint presentations in lectures to improve teaching, we must consider whether the presentations help students to learn. Accepted methods of evaluating the effectiveness of teaching and learning include student surveys, peer review and self evaluation. Studies using student evaluation and forms of peer evaluation have indicated that if the use of the presentation software is guided by educational principles and lecturers are familiar with operational aspects of the technology, the use of the powerpoint technology in lectures may have positive effects on student learning. However, in order to increase the effectiveness of teaching and

learning in lectures through the use of powerpoint presentations it is necessary to undergo an ongoing process of evaluation and reflection.

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