

PowerPoint and Pedagogy

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PowerPoint began as a business package which allowed for the seductive presentation of information to achieve particular objectives, usually to sell a product. Many of the features were thus designed to impress prospective customers and persuade them to purchase a particular product, and guidance in manuals seeks to serve that purpose.

This project grew out of a school staff development session where staff shared perceptions of PowerPoint and raised questions and concerns about pedagogy. Essentially the crucial question is how can a product designed for a different purpose assist us in the presentation of information in a teaching and learning situation?

Background and rationale

Research concerning electronic learning environments is included as a target area in the School of Humanities, Languages and Social Science (HLSS) learning and teaching strategy. Since the relocation of the school to the Millennium City Building most of the teaching occurs in rooms with PowerPoint and staff are encouraged to make full use of such facilities. Both authors are active users of PowerPoint, and the first author was among the contributors to the HLSS staff development session on PowerPoint during Learning and Teaching week. This session raised a number of key questions about the uses of PowerPoint and discussion revealed that staff were working on the basis of hunches rather than empirically based research findings in planning sessions with PowerPoint. A colleague's questions constituted an initial stimulus for the research:

1. Number of slides: how many is too many?
2. Are flashy backgrounds and animations a distraction or an aid?
3. What kind of information should we put on slides?
4. How much information is too much information on one slide?
5. How can we retain interaction in PowerPoint led sessions?
6. How can we satisfy ourselves that students are learning via PowerPoint-led sessions?

The research

The research project built on these questions to explore two key issues concerning PowerPoint, designing slides and retaining interaction. Pedagogically related studies on PowerPoint were very limited which made it necessary to draw upon learning and teaching material, particularly that related to ICT, and relate themes and findings to the study.

The first step was to explore student perceptions of PowerPoint and gather empirical data to discover if technical guidance on design is relevant in a teaching and learning situation.

The second area for exploration related specifically to criticisms about PowerPoint's negative impact on interaction in sessions. PowerPoint has received very bad press. It has been described by Creed as having 'dangerously inherent characteristics' (Creed, 1997), as 'of little or no value' and is a 'bad pedagogical tool' (Creed, 1997) Mason and Hlynka were critical of the control of information in presentations, particularly in the 'lockstep delivery

of information' and the use of 'cryptic, short phrases [that] communicate almost no detail.' (1998b,43 - 45) Keller and Cernerud (2003) drew attention to the 'darker side' of PowerPoint which altered one's way of thinking by reducing and squeezing ideas into bullet points.

The outcomes

Part One: Issues of design:

In order to gain some empirical evidence about student perceptions on the design of slides two questionnaires were used with Level One English students. The first explored their previous experiences with PowerPoint and the second asked them to assess the use made of PowerPoint in the first weeks of their course. The questions were designed to get feedback to see if the technical guidance on design was supported by student perceptions.

i. Number of slides: how many is too many?

The number of slides in a presentation does not seem to be a major issue for students. A specific question was asked on this and on a range of 5 to 30+ slides the majority response stated preference for twenty slides. Responses to other questions raised related issues about accessing the content on slides. These concerned the length of time each slide is visible for, indicating that students think they need to write down the content of each slide.

ii. Are flashy backgrounds and animations a distraction or an aid?

Although the question was badly phrased there was a strong response that animations were a distraction. This is worth following up and exploring slide transitions and any other features of PowerPoint which could disturb the train of thought.

iii. What kind of information should we put on slides?

There were clear indications that slides were useful for charts, images, quotes, references. Only one student used the option to add a suggestion, adding statistics. These responses were interesting as they did not include bullet points and general textual information.

iv. How much information is too much information on one slide?

The question asked about the amount of lines that should be taken up, less than five lines or more than five lines. The overwhelming response was for more than five lines. But students were concerned about the size of font used, particularly in lecture theatres.

Part Two: Interaction in PowerPoint sessions:

The second part of the research focused on some of the criticisms made of PowerPoint referred to earlier, particularly those which assert that PowerPoint cannot be used in a pedagogically sound manner. Appendix 1. provides an overview of student responses to the questions for each section. These questionnaires were completed by students in Media, Religious Studies and War Studies, who had experienced PowerPoint in their modules.

i. Communicates no detail:

This criticises the tendency to use bullet points which simplify content for ease of presentation. Guidance on the design of slides can tend to push designers to minimise the amount of content on slides and can result in complex matters being reduced to bulleted phrases. Whilst all students found bullet points useful, 80% felt it was necessary for further details to be given which went beyond bulleted summaries. This finding supports the criticism that PowerPoint may encourage lecturers to summarise details. The solution may be to marry the two together- to start with a summary bullet but then to expand each point in order to provide the in-depth information required for degree level work.

ii. Pre-determined- no spontaneity:

In one respect this is a valid criticism, as once a slide show is underway students are taken through slides in a sequential, linear order in order to introduce and explore material. This follows the pattern that would normally be used in lectures to work out the sequence of learning. Over 80% of students agreed that PowerPoint sessions were predetermined. Of these 17% felt this was a problem and 40% agreed that the predetermination could sometimes be a problem.

These responses suggest that students do not support the criticism, recognising that lectures needed to be predetermined. Indeed the fact that only a fifth of students wanted more involvement in sessions suggests that lecturers have an appropriate balance between input and activity.

iii. Learner passive:

Student feedback showed strong agreement (over 80%) with the assertion that sessions encourage passivity. The actual responses were 31% for Yes, 50% for sometimes and only 19% selected No. However, these responses do not provide support for passivity as a criticism of PowerPoint as the following questions showed that the assigning of tasks and asking questions were part of their session experience. Three quarters of students experienced asking questions in sessions and 70% experienced lecturers assigning tasks. However, 80% of responses indicated they would like more involvement in sessions. Thus there is a need to extend the good practice they experience with tasks and questions.

Benefits

The research outcomes add to the store of knowledge on electronic learning generally and PowerPoint specifically by providing some empirical data on student responses. At this stage the main benefit would be to remind us that as lecturers it is very easy to spend too much time on preparing flashy PowerPoint slides and not enough on the pedagogy for sessions.

Evaluation

The majority of the criticisms of PowerPoint can be answered by features within PowerPoint itself. The criticism that slides communicate no detail can be challenged, as slides can be used to deal with subject matter in depth and the solution to this problem is clearly in the hands of tutors. Rather than duplicate the minimalist content we have seen on PowerPoint slides, thought should be given to the content that is needed on slides for the purposes of learning. There will be times when the guidance on design restricts the amount of information that tutors would want to put on a slide, but there are ways round this. One solution is to link the slides to handouts which contain detailed content. This can work well in a lecture/ seminar situation and allow learners the opportunity to engage with material.

The criticism that sessions are predetermined raises the question whether we really have an alternative. If the point of lectures is to open up a topic to students, this is going to require a certain amount of transmission of knowledge. The common format is for this content to be explored interactively in seminars. But does that make such a session 'teacher-centred'? Sessions are obviously teacher-centred in the fact that the tutor is designing the presentation of material for students to engage with in the session. However, PowerPoint actually offers ways around pre-determination, if this is deemed to be a problem. The presenter can make use of the software to navigate different routes during a lecture and offer students choices when they access the material on-line.

Lectures can move around within a presentation rather than just follow the linear structure of the slide show. With an outline view print out which gives the numbers of slides, it is possible to move to any slide by typing in the number of the slide and pressing <enter>. Another way is to build in action buttons which allow you to move around the slide show by building in options which will lead to linked slides.

Perhaps the most important outcome of the project is to pose pedagogical questions about the use of PowerPoint. One of the major issues concerning the use of presentational packages is the tendency to get caught up in technicalities and lose sight of the pedagogical purpose. This research attempted to marry the two together in considering how technical features of PowerPoint could be used to overcome perceived shortcomings.

Research is divided as to whether new technologies are utilised to continue tried and tested methods of teaching or whether they lead to new ways of learning and teaching. Vrasidas and McIsaac recommend that “Old curricula and pedagogical approaches should be reformed, and if necessary replaced, to take advantage of the affordances of the new media.” (2001, 129)

There is clearly a need for research to explore the link between learning and the use of technology in sessions. For the most part is likely that findings will lead lecturers back to sound pedagogical practices that engage learners, as advised by Dwyer “Activities such as debates, that require the rapid analysis of information, and the need to hold key issues in memory help to develop working memory.” (2002, 267)

Future developments

At the start of this project it was clear that an infinite amount of time could be spent exploring the topic. Thus it was necessary to retain the original focus despite interest in spin off questions and issues. Despite our concern with pedagogical issues, the authors were constantly caught up in technological possibilities. To ensure that pedagogy features in our exploration of PowerPoint, the staff guide on PowerPoint which will be used for staff development sessions will have three sections: i. designing slides ii. using PowerPoint for interaction in sessions iii pedagogical discussions about the impact of PowerPoint on learning.

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Appendix 1. Interaction in PowerPoint sessions:

Section 1. Communicates no detail:	Yes	No	Sometimes
Do you find bullet points used in sessions useful?	66%	0	33%
Is it useful to have bullets to summarise the point?	89%	0	11%
Is it useful for slides to go beyond summary bullet points?	39%	11%	44%
Is it useful for slide to provide both a summary and full details?	47%	19%	25%
Do you want slides to include graphics as well as text?	47%	11%	42%
Are pictures useful in PowerPoint presentations?	50%	8%	42%
Are charts useful in PowerPoint presentations?	53%	6%	36%

Section 2. Encourages learners to be passive:	Yes	No	Sometimes
Do you agree that PowerPoint sessions encourage you to be passive?	31%	19%	50%
Does anyone ask questions during a PowerPoint session?	22%	25%	53%
If you didn't understand a point would you ask the lecturer to explain it again during a PowerPoint session?	47%	25%	28%
Does the lecturer assign tasks during the PowerPoint presentation?	25%	33%	42%
Would you like to be more involved in sessions?	22%	19%	59%
Does the use of animations (this term refers to step by step revealing of information on one slide) during sessions help your learning?	53%	19%	31%

Section 3. PowerPoint sessions are pre-determined and have no spontaneity:	Yes	No	Sometimes
Have you ever thought about PowerPoint sessions as pre-determined?	50%	17%	28%
Is there anything wrong with sessions that are pre-determined?	17%	44%	39%
Do you find the pre-determined sequence of PowerPoint led sessions limiting?	14%	33%	53%
Would you prefer sessions where lecturers can move between slides easily?	61%	8%	25%
Would you like to be given the option during session of choosing the sequence of certain points?	19%	39%	36%