



Journal of Hospitality, Leisure,
Sport & Tourism Education

Vol. 6, No. 1.

ISSN: 1473-8376

www.hlst.heacademy.ac.uk/johlste

PRACTICE PAPER

Importance of Visual Images in Lectures: Case Study on Tourism Management Students

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DOI:10.3794/johlste.61.147

© Journal of Hospitality, Leisure, Sport and Tourism Education

Abstract

Visual images are increasingly being used in learning and teaching resources, especially with access to quality digital images in web-based materials. This paper explores the effectiveness of including images in teaching materials in improving students' learning experiences in mass lectures. This study confirmed the importance of using images to assist students make visual associations and, more importantly, remain focused in lectures. The appropriateness of the images being utilised is crucial to enforce the effectiveness of this practice. Images can be used to promote positive learning experiences for students when used in ways that are consistent with the cognitive theory of visual learning.

Keywords: Images, Lectures, Visual Learning, Concentration Level

Introduction

In the past, lectures have often been criticised as a poor way of stimulating thought and changing attitudes (Bligh, 1998). Students, especially in advanced years of study, have also demonstrated their feelings against this mode of delivery by not attending them (Huxham, 2005). Despite the arguments against them, lectures remain a major part of traditional Higher Education (HE) as a result of the formidable forces of economic efficiency, institutional inertia or even just personal habits (Huxham, 2005).

Lectures are popular in academic departments as they reach a large number of students and convey a large amount of material in a short time. However, the main disadvantage with lectures is the passiveness of students and the lack of feedback regarding the understanding of the lecture (Reece and Walker, 2001). Even during these exciting times, where flexible, autonomous learning appears to be in the main agenda for Manchester Metropolitan University (MMU) (the setting for this study), traditional lectures still continue to provide the basic learning foundation for the learners, and complement the managed learning environments proposed by the Vice Chancellor. As lecturers who

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are dealing with subject areas with large cohort of students, we will continue to have to deliver lectures. Therefore, there is still a crucial need to address ways of improving the delivery of lectures. This study is based upon a review of the inclusion of images in a lecture on Human Resource Management for Tourism at MMU, with the aim of improving students' level of concentration and understanding. The importance of images as a tool for learning has been advocated by a number of studies in HE (e.g. Sims, *et al.*, 2002; de Souza, 2005) and the development of technology and media has led to a mushrooming of visual images appearing in learning and teaching resources. This is due in part to the wide availability of digital images, and access to technology and software that facilitates the creation and delivery of visual materials (Simms *et al.* 2002). My participation in the Image Enriched Learning in Tourism (IELIT) project (www.tourismimages.org.uk), (a joint project between University of Surrey and Buckinghamshire Chilterns University College) provided the main impetus for this study. As part of this project, a group of academics in the tourism field shared their experiences on how they have used images in teaching. I found the experience fascinating and energising, as various presenters demonstrated different ways of utilising images in teaching tourism management students. This study explores the effectiveness of using of images in lectures to enhance students' learning experiences and demonstrates how images can be used to stimulate student participation and interaction in lectures.

Theories of Learning from Visual Images

During the last 25 years, learning and understanding text has been investigated intensively, but research on examining the effectiveness of learning through visual images has received much less attention (Schnotz, 2002). However a number of studies, especially in the 1970s, have emphasised the strength of our brain to store and recall images as opposed to text (e.g. Haber, 1970; Standing, 1973; Paivio, 1975).

Illustrations have been part of our learning mechanism since our childhood, as images are used in storybooks to stimulate our imaginations. So, for students who are learning new subject areas or topics unfamiliar to them it is like being a child again, reinforcing the need for images and illustrations to help students visualise and relate to them. Paivio's (1986) dual coding theory is a good starting point for addressing the use of pictures on learning from text. According to this theory, "words and sentences are usually processed and encoded only in the verbal system, whereas pictures are processed and encoded both in the imagery system and in the verbal system" (Schnotz, 2002: 107). Therefore, pictures have an added advantage over text, as dual coding takes place in the memory, hence "it is easier for the learner to make cross connections between the two different codes and later retrieve information" (Schnotz, 2002: 107).

Studies undertaken as early as the 1970s highlighted the extraordinary capacity of the brain to imprint and recall images accurately, and at incredibly high speeds (Haber, 1970; Standing, 1973). Images can be stored in our long term-memory in terms of a coherent chunk or concept (Standing, 1973; Paivio, 1975, Erdelyi and Stein, 1981; Williams *et al.*, 1996), and there is no limit to the extent to which it can be stored and retrieved (Miller, 1956; Gage and Berliner, 1988; Williams *et al.*, 1996). This is because images provoke a range of responses, such as colour, dimension, texture, visual rhythm and imagination, in particular (Buzan, 1990; Williams, *et al.*, 1996). They are "generally more evocative than words, more precise and potent in triggering a wide range of associations, thereby enhancing creative thinking and memory" (Williams *et al.*, 1996: 5-6).

Research throughout the 1990s demonstrated that carefully constructed pictures as visual text adjuncts can not only have a decorative function, but also have functions of representation, organisation, interpretation and transformation (Carney and Levin, 2002). According to Levin and Mayer (1993, cited in Carney and Levin 2002: 9), this "suggests that pictures improve students' learning from text because they make the text more concentrated, compact/concise, concrete, coherent, comprehensible, correspondent and codeable". Cognitive theory also proposes "the idea that meaningful learning occurs when the learner engages in cognitive processes such as selecting relevant material, organising it into a coherent representation and integrating it with existing knowledge" (Wittrock 1974, cited in

Mayer and Moreno, 2002: 91). Therefore, carefully selected images can be used in promoting effective learning amongst students.

One of the most well known advocates of visual literacy is Dondis (1995) (cited in de Souza, 2005), who strongly emphasised that visual literacy (i.e. the ability to read and write through images) should not be limited to those who are trained in this, such as artists, designers or visual communicators, rather it should be accessible to everyone. Schnotz (2002) also supports this notion by advocating visual displays as powerful devices to support teaching and learning, since combining visuals and text are important to support comprehension among students. Incorporating images in lectures can be important in developing attitudes and perceptions of dimensions other than cognitive, but which are equally important for preparing any future educators (de Souza, 2005).

Methodology

This study adopted an 'Action Research' approach whereby action was taken to understand and improve existing practice (Cohen and Manion, 1994). Action research is applied research, carried out by practitioners who have identified a need for change or improvement (Bell, 2005). The aim of this exploratory research was to understand the role of images in teaching and to provide recommendations for enhancing students' learning experiences in large lectures.

Questionnaires, focus groups and observation of the lecture were used to collect primary data. The questionnaire was designed to capture students' views on the role of images in lectures. Focus groups were selected to complement the questionnaire survey for this study, "...making it possible to explore in greater detail some particular important aspects covered by the questionnaire" (Verma and Mallick, 1999: 122). It also "elicited substantive information about participants' thoughts and feelings on the topic of interest in relatively little time" (Vaughn *et al.* 1996: 16). This "research tool is also highly consistent with current trends in education and psychology that aim at understanding more about what key stakeholders think and feel" (Vaughn *et al.* 1996: 16). Therefore the results of the questionnaire, which provided data on a widespread sample, when complemented with focus group responses, provides a valuable insight, and a more complete picture regarding the importance of images in improving lectures.

Finally, simple observation techniques were used to evaluate the effectiveness of the lecture. Observation has the advantage of collecting first-hand information in a natural setting, and can be more accurate as it is independent of the respondents' unwillingness to provide information needed by the researcher (Ghauri and Grønhaug, 2002). However, in this study, only limited information could be obtained through this technique.

The sample selected for this research were all BA (Hons)/HND Tourism Management Level 2 students (N=45). The questionnaires were distributed to the students immediately after their Human Resource Management lecture. Unfortunately, due to a number absentees on the day the survey took place, only 32 completed questionnaires were collected, which gave a response rate of 71%. Two focus groups (five students in each group) were conducted half an hour after the lecture. The aim of the focus groups was to obtain more information regarding the student responses in the questionnaire.

The quantitative data obtained from the questionnaire survey was analysed by using SPSS Statistical Software, whereby the mean scores for the statements, which used a Likert scale in order to measure the strength of the responses to capture students' views, were calculated. Five Likert scales, ranging from 1 being 'strongly disagree' and 5 being 'strongly agree' were used. The qualitative data from the questionnaire and interviews were analysed using template analysis. The transcripts from the interviews and the qualitative comments from the questionnaires were searched for emerging common themes and patterns on various specified sub-topics. Where appropriate, these have been included in the analysis section with fuller reference to individual responses.

The methodology developed for this study paid attention to the validity and reliability of the study, by selecting the appropriate methodology for answering the research questions and selecting appropriate

research instruments for gathering the type of data required. The threats to the validity of the study at the design stages were minimised (Cohen *et al.* 2001). Triangulation was also used to demonstrate concurrent validity (Cohen *et al.* 2001) and multiple methods (questionnaire survey and group interviews) were utilised in addressing the research questions.

Evaluation of the New Practice

In total, 32 questionnaires were completed by students studying in the second year of the BA (Hons) Tourism Management Programmes. The majority of these students (81%) were female, only six of the students were male. Therefore, it was not possible to undertake any statistical analysis to investigate whether there were differences in the views according to gender. This is something that can be considered for further study.

Support for visual images in learning

An overwhelming majority (85%) of the respondents said they would like lecturers to use more visual images in teaching. The results in Table 1 clearly demonstrate that there is strong support for including images in a lecture as, according to the students, it makes the lecture more interesting and increases the concentration level amongst the students. There was also strong support for the notion that images helped them remember concepts, so serving as a trigger to a topic. This supports the findings of studies dating from the 1970s, which demonstrated that images could be stored in our long term-memory (Standing, 1973; Paivio, 1975, Erdelyi and Stein, 1981; Williams *et al.*, 1996). The following responses regarding lectures utilising images clearly demonstrated the role of images in improving learning retention:

“It becomes easier to understand and images are easier to refer back to and remember.”
(Case 12)

“It enforces the example and sticks it in your mind. I find them useful and more likely to remember certain points in the lecture for the exams and revision.”
(Case 20)

“If you remember pictures, you can relate them to the subject area, which helps you to remember them as pointers.”
(Case 25)

	Mean Score	Standard Deviation (σ)
Lecture was interesting because of the visual images incorporated into the lecture	4.1	0.759
Visual images in the lecture made me more alert, as a result I was able to concentrate for the whole lecture	4.0	0.782
I feel that I will be able to recall the main points made in the lecture better because of the visual images	3.9	0.588
Lecture was interesting as I was personally interested in the topic	3.9	0.689
The visual images being used did not relate to the discussion	1.7	0.937
The visual images distracted me from the main points being presented	1.7	0.902

1 = Strongly Disagree, 5 = Strongly Agree (n=32)

Table 1: Views on the lecture and images

One student however, pointed out that images do not automatically make you remember things, but can keep you more focused in a lecture. A significant number of the students also emphasised the role of images in making lectures more interesting and breaking the monotony of lectures:

“Breaks lecture slides up, doesn’t just look like a block of writing on screen, easier to take information.”

(Case 6)

“Maintains better attention than just full text as minds can wander.”

(Case 14)

“Makes the lecture more interesting and not all words on the screen.”

(Case 18)

Images and interaction

This is clearly important in a lecture as increasing the concentration level of students by making a lecture more interesting and visually more stimulating can help students understand topics rather than simply memorising them. It is not surprising that a number of studies have investigated the role of interactiveness in lectures in engaging and keeping students interested. Huxham (2005) found that interaction with students in a lecture improved student learning.

In the lecture reported on, images were used to promote interactiveness in the lecture. The students were asked to email images they associated with the topic a week before the lecture. Students were asked to look at the IELIT website for suitable pictures. The images were included in the lecture and 10 minutes was spent discussing issues related to the images. It was felt that this was effective, as students were raising important points regarding the topic by looking at the images.

The following comments from the focus groups also clearly demonstrated that they found this form of activity effective:

“I really liked today’s lecture as I paid more attention to it because of the pictures. When there is so much writing it can get boring, the pictures break it up, especially as we gave you some of the pictures, we felt that we were involved in the lecture. It is a nice change!”

(Case TW)

“I found today’s lecture good as you have asked us to email some pictures regarding the topic and this was included in the lecture. You feel that you are part of the lecture as we were involved in sending the pictures to you.”

(Case NW)

Appropriateness of images

The development of multimedia has encouraged lecturers to include images and decorations on their slides. According to Carney and Levin (2002: 20), decorative illustrations in lecture presentations “may help make the text more attractive or more marketable, but they are unlikely to enhance desired outcomes related to understanding, remembering, or applying the text context”. However, the following comments from the focus groups, clearly demonstrated that for some students, the decorative illustrations could assist in increasing the concentration level, which in turn could enhance the desired outcomes:

“I think decorative images still help, as you are more alert when there is a picture.”

(Case SK)

“Colour in the images makes you more awake, and increases concentration.”

(Case EC)

Therefore, decorative illustrations have a role to play, not merely in making text more attractive or marketable (Carney and Levin, 2002), but also in improving students’ motivation and concentration

level. The four key elements that need to be embodied in teaching to improve the quality of student learning are: motivational context; learner activity; interaction with others; and a well-structured knowledge base (Gibbs, 1988). Images and the presence of colour in a lecture presentation may not be essential or sufficient in motivating students to concentrate. However, the lack of images and colour in a presentation may have a negative effect on the students' motivation to concentrate in a lecture, hence they are useful.

However, this does not mean that images should be included without any thought, for every lecture. We need to closely monitor the images being used. One student in the questionnaire survey raised the point about the appropriateness of the images being used as crucial in determining the effectiveness of them:

“If the images are of great relevance, then it is useful in a lecture, but if they are not being referred to, they are pointless.”

(Case 16)

The focus group revealed similar views, with students emphasising the appropriateness of an image as important in deciding the effectiveness of a lecture. The following comments clearly identified that if an image is not used properly, it can be a distraction:

“If the image is not directly related to the point the lecturer is making, then the image is just a distraction. For example, when I was looking at the slide I was trying to figure out what the image had to do with the writing, rather than focusing on the writing.”

(Case LW)

“We have so many things in our head and the last thing we need is a picture which is not really related to the information.”

(Case EG)

“By the time you look at the pictures, try to understand it and then read the slide is gone!”

(Case DA)

Observation and reflection

The following comments from a colleague who observed the session also confirm the effectiveness of the lecture that included images. The comments provided from the peer observation have been divided according to the following themes: role and benefit of images; appropriateness of images being used; and student engagement prior to lecture.

Role and Benefit of images

“interest stimulated and sustained”

“images led to some interaction opportunities”

“images were not distracting”

“similar learning without images but ‘the pill was sugared’ by using image”

Appropriateness of Images

“appropriateness of some of the images is questioned – need for images from tourism specific, rather than historical or political figures, over reliance on the historical or political, insufficient emphasis on topical/industry relevance”

Student Engagement Prior to Lecture

“like the idea of asking students themselves to email you some images, which you then used in the lecture as part of your presentation. This seems to be fun, engaging, collaborative, but serious at the same time, could do more work like this in an e-learning area, where images could be downloaded, and discussion be held online”

(Comments from peer observation)

Personal reflections on this lecture were similar to those of the colleague who observed the session. Experience suggests that the students were more alert when there were images in the slides. The discussion resulting from one slide, which only had images on, was also relaxed and effective.

Implications for the Future

The study clearly reiterated the importance of images in teaching, and the findings confirmed the benefit of incorporating images in teaching and learning. If the images are selected and used appropriately, they can enhance and lead to a deep approach to learning amongst students. The activity of asking students to email pictures from the IELIT website also appeared to be successful and will be repeated next year. Therefore, the use of images will be further developed to encourage the interactiveness and engagement of students before, as well as during, the lectures.

Studies undertaken to improve students' learning experiences have been ongoing in HE. This is not surprising as the cohort of students constantly evolve and change, in terms of their background and the learning styles they possess. This will influence the appropriateness of the teaching methods utilised. In the 21st century, we are dealing with a completely new generation of students who are familiar and comfortable with ever-changing technological developments. According to Carney and Levin (2002: 23):

“cyberstudents of the new millennium will differ from the book learned liberstudents of the century past, in their ability to process picture and text information comprehensively and with comprehension”.

Therefore, as lecturers we need to embrace this and ensure that we are delivering in a format that is familiar to the present cyberstudents.

References

- Bell, J. (2005) *Doing your Research Project: A Guide for First-time Researchers in Education, Health and Social Science*. 4th edn., Maidenhead: Open University Press.
- Bligh, D. (1998) *What's the Use of Lectures?* 5th Ed. San Francisco: Jossey-Bass Publishers.
- Carney, R. and Levin, J. R. (2002) Pictorial illustrations still improve students learning from text. *Educational Psychology Review*, 14(1), 5- 26.
- Cohen, L. and Manion, L. (1994) *Research Methods in Education*. 4th edn. London: Routledge.
- Cohen, L. Manion, L. and Morrison, K. (2001) *Research Methods in Education*. 5th edn., London: Routledge.
- de Souza, R. (2005) Learning and teaching in higher education: the use of images as didactic resources. Paper presented at the European Conference on Educational Research, University College Dublin, 7-10 September 2005.
- Erdelyi, M. H. and Stein, J. B. (1981) Recognition hypermnnesia: the growth or recognition memory over time with repeated testing. *Cognition*, 9 (1), 21-33.
- Haber, R. N. (1970) How we remember what we see. *Scientific American*, 105.
- Huxham, M. (2005) Learning in lectures: do interactive windows help? *Active Learning in Higher Education*, 6(1), 17-31.
- Gage, N. L. and Berliner, D. C. (1988) *Education Psychology*. Boston: Houghton Mifflin Company.
- Ghuri, P and Grønhaug, K. (2002) *Research Methods in Business Studies*. 2nd ed. Harlow: Pearson Education Lmt.
- Gibbs, G. (1988) *Learning by Doing: a Guide to Teaching and Learning Methods*. London: FEU
- Mayer, R. E. and Moreno, R. (2002) Animation as an aid to multimedia learning. *Educational Psychology Review*, 14(1), 87-99.
- Miller, G. A. (1956) The magic number seven, plus or minus two. *Psychological Review*, 63, 81-97.
- Paivio, A. (1975) Imagery and long-term memory. In Studies. In A. Kennedy and A. Wilkes (eds.) *Long Term Memory*. London: John Wiley and Sons.

- Paivio, A. (1986) *Mental Representations: A Dual Coding Approach*. Oxford: Oxford University Press.
- Reece, I. and Walker, S. (2001) *Teaching, Training and Learning: A Practical Guide*, 4th ed. Business Education Publishers Limited: Sunderland.
- Schnotz, W. (2002) Towards an integrated view of learning from text and visual displays, *Educational Psychology Review*, 14, 1, 101-120.
- Sims, E., O'Leary, R., Cook, J. and Butland, G. (2002) *Visual Literacy: What is it and do we Need it to use Learning Technologies Effectively?* [online] University of Bristol. Available from: <http://chewbacca.ilrt.bris.ac.uk/journal/incoming/visuallitfinal.doc> [Accessed 10 May 2006].
- Standing, L. (1973) Learning 10,000 pictures, *Quarterly Journal of Experimental Psychology*, 27, 207-222.
- Vaughn, S., Schumm, J. S. and Sinagub, J. (1996) *Focus Group Interviews in Education and Psychology*, London: Sage Publications.
- Verma, G. K. and Mallick, K. (1999) *Researching Education: Perspectives and Techniques*, Philadelphia: Farmer Press.
- Williams, J., Lock, A. and Burnett, C. (1996) *Digital video for multimedia: considerations for capture, use and delivery*, Advisory Group of Computer Graphics [online]. University of Bristol. Available from: <http://www.agocg.ac.uk> [Accessed: 10 May 2006].