

Visual Learning Assessment in Employment Relations: Structure and Meaning

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There is a need for teaching innovation in industrial relations, which has relied almost exclusively on traditional written forms of assessment. The term 'text' is now defined much more widely to refer to 'multiple forms of communication including information on a digital screen, video, film and other media, oral speech, television, and works of art as well as print material' (Healy, 2000:156). Teaching and learning methods need to incorporate visual forms of communication and assessment to develop students' multi-literacies. This paper explores innovative assessment practices in a first year course in Employment Relations. The paper assesses student posters as a means of communicating understanding. This paper seeks to classify the range of approaches students used to produce their posters. It is through these different approaches to poster making that students demonstrate the structure of their thinking about the meaning of employment relations.

Introduction: Generic skills and higher education

In the last couple of decades there has been a change in the skill sets employers expect from employees, with less emphasis being placed on what graduates 'know' and more emphasis being placed on what they can 'do' (Bennett, Dunne and Carre, 2000:1). The origins of this shift in Australia can be traced back to earlier debates about the development of workplace competencies following the Carmichael and Mayer reports (Australian Vocational Certificate Training System, 1992.. A more recent shift has seen much greater emphasis placed on generic skills and attributes of employees as opposed to competencies. A good example of this more recent approach is the Australian Chamber of Commerce and Industry (ACCI) which produced a report in 2002 which argues '[e]nterprises are increasingly seeking a more highly skilled workforce where the generic and transferable skills are broadly distributed across the organisation' (ACCI, 2002:2) . The ACCI conducted research among employers and found that they were seeking employees with generic personal attributes (such as loyalty, commitment and enthusiasm) and generic skills (such as problem solving and team-working) in addition to technical and job-related skills.

While there is often a disparity between academics' and employers' perceptions of generic skills (Leveson, 2000), many universities have embraced this 'skills agenda' (Fallows and Steven, 2000) and developed statements of the generic and transferable attributes that their graduates should possess. These generic attributes represent the qualities, skills and understandings a university community anticipates its students should acquire at university and display as a graduate professional and citizen (Higher Education Council, 1992).

Communication ability is one area that is universally recognised as a core generic skill and is incorporated into many university statements of graduate attributes. Communication skills are generally taken to refer to written and oral skills, although the emphasis is often heavily on written skills. This is not surprising given the centrality of written communication in the form of essay writing and exams in the traditional university curricula. However, one form of communication which has received very little attention at all – outside areas like graphic design and the fine arts - has been the area of visual communication and literacy.

Visual modes of representation

Primary, secondary and tertiary education systems of instruction and assessment have been overwhelmingly based around print literacy and written communication. Russell (2000:205) contends that 'educational institutions have been dominated by a hegemonic print discourse'. As a corollary, the visual realm has mistakenly been viewed by some as a 'less legitimate form of reasoned communication than print, and more a medium for entertainment than for the serious message' (Healy, 2000:161, 162). Indeed, as George (2002:31) has observed, there has been a tendency to equate text with high culture and production whereas visual materials have been associated with low culture and consumption.

There has been emerging critique of the primacy of language as the main medium of communication in western societies (Thesen, 2001:133). New technologies and media, particularly in the form of computers and the Internet, increasingly employ visual and print text in an integrated way. The term 'text' is now defined much more widely to refer to 'multiple forms of communication including information on a digital screen, video, film and other media, oral speech, television, and works of art as well as print material' (Healy, 2000:156). These newer communication media or modes have increasingly become more widely diffused and used. For example, it is now commonly the case that younger children, prior to entering school, will have had much more experience with visual-based interactive and multimedia text, than with written print. Young people live in an aggressively visual culture (George, 2002). For example, an American youngster will view about half a million television advertisements (Christopherson, 1997:169).

Some would argue that students need to develop multiple literacies, with written communication representing only one form of communication (George, 2002). Cope and Kalantzis (2000:5) use the terms or 'multiliteracies' and contend that there is an 'increasing multiplicity and integration of significant modes' of meaning making including textual, visual, gestural, audio, spatial and multimodal. The term 'multiliteracies' is now employed to represent the process of making meaning through the interaction of these communicative modes (Duncum, 2004:253). Our focus for the present is to contrast visual and textual modes.

Visuals 'share language's burden in representing the world and our thought about it' (Lopes, 1996:7). Text and visuals are external representations which readers use to construct internal mental representation as a process of discerning meaning. But the visual and the textual realms are different and employ different sign systems. Texts are descriptive representations using symbols. Symbols are arbitrary designations that are associated with objects by convention. Visuals, on the other hand, are depictive representations using iconic signs. Icons are associated with the designated object by similarity. As Jean (1998:121) observes, symbols used in visual expression are the visual equivalent of metaphors or parables; images that represent large ideas in simple form. Text and pictures are processed cognitively in a different but complementary way (Schnotz, 2002:103-111).

Making sense of visual material is different from that of text. Analysis of text entails sequential and logical reasoning, a sense of order and purpose, and ability to detect abuses of logic and commonsense, capacity for judging the efficacy of relations between propositions and the sense of objectivity and detachment (Karl, 1994:195-197). This sense of linear and rational detachment is difficult to achieve with images which can evoke strong emotional responses (Thesen, 2001:138). While it is possible to acquire the critical skills to interrogate visuals, they are uniquely sensual (Duncum, 2004:257) and stimulate a sense of immediacy, of being close to the source (Thesen, 2001:138).

Visuals and the assessment of learning

In higher education, written assignments or exams have been the main methods of assessing students learning. Traditionally, outside of engineering and applied arts, the use of visual forms of assessment has been rare. However, experimentation with alternative forms of assessment is taking place with the growing interest in the multiliteracies and multimodality of meaning production (Duncum 2004; Thesen, 2001). Learning is a creative process (Sanders-Bustle, 2003:45) and the use of visual forms of assessment becomes another 'expression of our search for order in a complex world' (Sitz, 1997:84).

However, as Laurillard (1993:50) has explained, learning in an academic setting is a complex relational process. For students to learn they need to apprehend the structure of knowledge, for meaning is given through structure. Discerning structure is difficult. Students need to focus on the main ideas and concepts, relate and distinguish evidence and argument and organise the content into a cogent whole (Ramsden, 1992). For students to be able to discern and express knowledge, they need to be able to interpret and use symbols systems - whether they be linguistic, symbolic or pictorial – within some overall structure.

In the case of visual assignments, how do students apprehend and display the structure of their knowledge? While the conventions of constructing essays and using grammar and text syntax are well established, it is much less clear how students can display understanding within the open format of a visual poster. In the following section of this paper, we seek to explore the ways in which students in a business school sought to display the structure of their knowledge about employment relations using posters.

Method and poster assessment

The data gathered for this paper was drawn from a visual learning assessment item in a large first year course Employment Relations 101 IIRL taught at the Griffith Business School in 2004 on Nathan campus. As part of their assessment, students were required to produce a poster – or some other visual display - based on their findings from a group-work written report they had produced about an employment issue such as health and safety, training, recruitment and selection and performance management. The poster was produced one week after the groups submitted their written reports and before they received feedback from their tutor on their performance in the written report. In 2004, all students in the course gathered in a single venue to display their poster to their tutor and to one another. In 2005, students displayed their posters in tutorials.

The main learning objective of the poster was to develop students' ability to show key concepts and argument in a visual display. The poster assessment was designed to be a visual restatement of the main conclusion from their report expressed as an arrangement of images, text and numbers (such as graphs and tables). It was expected that there would be a strong connection between the conclusion of the students' written report and central message of the poster. Students were advised that it was simply not good enough to produce a pretty poster with lots of jumbled images on it. It was emphasised in the study guide that students were trying to communicate a message to the viewer with their poster and hence it was expected that the conclusion drawn from their report were to be translated into a clear statement in their poster. In many ways, students were effectively asked to develop a visual argument where the poster was used to make a reasoned claim with the aim of convincing the audience to accept that claim (George, 2002:29). Posters were assessed in terms of clarity of message, visual impact and creativity.

To help their tutors and other students understand the meaning of their poster, student were asked to write a short explanation about the poster. The written explanation entailed the following:

1. the main conclusion from the report;
2. the central message, narrative or story of the visual image;
3. the audience for the poster;
4. the context in which the poster was to be viewed;
5. the style or genre of visual image; and
6. the meaning of the main images/figures.

Students were given several pages of advice about how to address each of the above topics. This advice was based on the work of visual sociologists Emmison and Smith (2000), who developed a framework for analysing visual materials. The purpose of the poster explanation was partly to stimulate student thinking about poster design and partly to reinforce that it was expected that the message of the poster, based on the written report, was to be well thought through and clearly expressed.

The overarching aim of the poster (and the poster explanation) was to encourage students to distil a central conclusion or argument from their written report. Prior to the introduction of the poster assessment – first introduced in 2003 - student group reports commonly did not contain clear and obvious conclusions or an argument. By requiring student groups to present the main findings and conclusion from their written report in visual a manner – and in a public display – it was hoped that students would strive to draw firm a conclusion in their written report which could be expressed well in the poster. There is insufficient space in this paper to explore the contribution that the poster makes to the quality of learning from the assessment item. However, since the introduction of the poster, teaching staff have observed an increase in students' capacity to draw clear conclusions from their research. In addition, use of the posters to accompany students' explanation of their findings to their peers heightens the audience's attention, and makes it easier for the group to succinctly present their findings. We interviewed 12 student groups about their approaches to poster-making, and whether they felt it contributed to their learning. These results will be reported separately.

Student approaches to the posters

For this paper, we examined over one hundred posters and identified several distinct student approaches to communicating understanding through visual display. This project adopted a modified phenomenographic approach. Following Marton and Saljo (1997) the posters were analysed then grouped together on the basis of similarity. Posters were thus organised into particular categories or 'pools of meaning' (Marton and Saljo, 1997:42).

To help us with our classification of posters we examined existing frameworks such as the fivefold framework devised by Levin to characterise the role of pictures in text processing: decorational, representational, organisational, interpretational and transformational (cited in Carney and Levin, 2002). While this framework was useful – and we did draw on some aspects of it – the Levin framework was too narrow as it was devised to represent the ways in which pictures were used to complement text as an aid to learning to read. We also drew on the framework developed by film theorists Brodwell and Thompson (2004) of different film types: narrative, rhetorical, abstract, categorical and associational. While there was some overlap between the two schemas, we were able draw on both these different traditions to help

us devise categories that we felt captured the range of approaches students adopted to poster making. We then tried to link our framework with Biggs (1999) SOLO taxonomy of levels of learning. Once we had devised the schema, we asked two colleagues to apply the categories to some tens of posters. Our categories made sense to them and they were able to classify posters according to our schema. On the basis of our analysis we identified five main approaches: abstract, text-based, declarative, categorical and metaphorical.

We should note at the outset that not all of the students adopted a single approach to producing the poster. Sometimes students would combine elements from a number of these approaches into one poster. Often, these types of posters were visually very ‘busy’ and confusing and difficult to interpret. Students may have put a lot of effort into constructing them, but it was difficult to understand the central message. Nevertheless, we outline the key characteristics of each of these different approaches to posters below.

Abstract approach

Probably the least effective form of poster was the abstract approach. With this approach, images, words and phrases were randomly dispersed across the poster with no apparent pattern or structure. It was unclear how the floating signs related to one another. An example of this type of approach can be seen in Figure 1. The intention may have been to create a gestalt impression, but it is difficult to interpret the key message. Very few students adopted this approach and these posters were graded very poorly. The approach is similar to the prestructural category of Biggs’ (1999:46-48) SOLO taxonomy where student work is largely irrelevant or incorrect.

Text-based approach

Some posters were composed almost entirely of text. Commonly, this type of poster would contain text drawn directly from the written report. The text would be bracketed into a number of discrete chunks or sections. These sections would normally mirror and summarise the main sections of the written report. Often the students would type the text on their computers and then paste the printed text onto a sheet of cardboard, to be read as normal text from left to right and top to bottom. The posters may have contained minimal decoration such as borders around the textboxes or the edges of the poster. The posters would be titled with the main report topic and sub-headings would commonly be used to identify the content of the main textboxes.

Alternatively, rather than using large pieces of texts, some students summarised the main points into key phrases or paragraphs. Sometimes charts or tables were added to display the statistical findings of the research, often without any elaboration. Commonly these chunks of information would be loosely arranged on the poster, often without any apparent links between the different pieces of information.

Text based with decorative or representational visuals

Some students produced marginally more sophisticated posters that included some visual material to supplement the written text. An example of this approach is shown in Figure 2. These posters were still largely text-based but did include some additional visual material that was either decorative or representational. The decorative material may have included some small images of the topic dotted over the poster or around the edges and perhaps some other features such fancy borders, extensive colouring, hand-drawn headings and the like.

The visual material beautified the posters but was largely ornamental and added little to the overall message of the poster. Again, these posters showed a very low level of abstraction and were generally not graded highly.

Some students in this category of work were more thoughtful about their choice of visual material and were able to select images that represented or illustrated their topic rather than being just decorative. For example, students may have produced a poster dealing with the importance of equity at work and illustrated this topic by using images of people of different ethnic groups to represent diversity at work. Overall, the quality of these posters was not high and the text tended to dominate the visual material.

In sum, few students produced posters that were entirely text based – although many students used written text heavily. Given that students were expected to provide a strong statement of their key report conclusions, it is not surprising that many students relied on the familiar written text to describe their findings. The students were not shown many examples of posters and it is not surprising that many students in a business degree had difficulty depicting visually their findings and resorted instead to describing them in words.

This approach to poster construction involved a low level of abstraction and relied heavily on written text to impart meaning. These posters were generally not graded highly and did not show much creativity, effort or visual impact. It is difficult to classify these posters according to Biggs (1999) SOLO framework. This poster approach was prestructural to the extent that little visual material was used in the posters and hence students did not really engage with the assessment task. However, the predominant use of text enabled students to clearly convey their findings in summary form.

Declarative approach

Using a different approach, some students used the poster to make a simple, direct rhetorical or declarative statement. This approach included making exhortations such as ‘health and safety is important’ or ‘training is vital to success’. These posters were often simply constructed and communicated a direct and succinct message. Figure 3 gives an example. Little decoding of the poster was required by the viewer. In some cases the main message was displayed in written text with images used to represent the main idea. In other cases, students would use a strong visual image to depict the main idea and then use some text to clarify meaning. Sometimes these posters would contain several distinct statements on a single topic.

While these posters were very direct, a major weakness of this rhetorical approach was that the message was sometimes trivial. Students were studying health and safety and training and other topics precisely because they were important topics. Merely restating that health and safety was important conveyed little to the reader as to why such a topic was important, or what the students had concluded from their report. Thus, while this approach was an effective method of communicating a direct message, there was sometimes a lack of sophistication with the message which detracted from the overall standard of the posters of this type. This approach was similar to Biggs (1999) unistructural category in so far as students identified a single issue or concept of importance without really exploring the relationship between ideas.

Categorical approach

A further approach that some students used was to organise their ideas and concepts into categories. In a slightly different context, this approach has been described as ‘organisational’

by Carney and Levin (2002) and 'compartmental' by Tuft (1997). Visual material and text would be grouped in some manner, to signify the central ideas and how they were linked together. In most cases, text was used sparingly. This organisational approach was used by many groups of students. Students used this categorical approach in three different ways: diagrammatic, storytelling and dualism.

Diagrammatic organization

A sub-type of the categorical approach was the use of diagrams. Key words/phrases, symbols and images were grouped and related to impart meanings within a conventional narrative structure. With this type of poster, the students were seeking to communicate by using the familiar structure of written text where nouns signify key ideas and verbs indicate the relationship between ideas. As can be seen in Figure 4, pictures (or text boxes) were used as nouns to represent key ideas and arrows (or the like) were used as verbs to indicate direction of causation or influence. Some diagrams were simply arranged while others consisted of many ideas linked together, perhaps with feedback loops.

This was a common approach. This approach was similar to a concept map and allowed students to express their report findings in summary form. It also allowed them to experiment with the production of meaning using images and symbols. At the same time, though, it allowed students to retain a familiar narrative structure within which they could communicate their central message by using arrows, for example, to indicate sequencing where one idea leads to another and so on.

Storytelling approach

Another sub-type of the categorical approach was the use of storytelling. This approach was similar to the diagrammatic approach in that students attempted to develop a narrative of some sort. In the storytelling approach, the narrative was often communicated through a cartoon format. As a conventional form of visual communication, the cartoon approach allowed students to use images to depict key ideas and the text - either as first- or third-person commentary - to develop the narrative of the story. The main elements of the story are portrayed in a series of panels with the bulk of meaning derived from the visual material, supplemented by text. This type of approach was not common as it required the students to possess considerable drawing ability, or the capacity to use computer programs to create cartoons.

Dualist organization

A third sub-type of the categorical approach was the dualist organisation. This approach did not use a linear narrative approach to convey meaning. Instead, visual comparisons were used to illustrate a message through a juxtaposition of contrasts or oppositions. Common dichotomies included: right/wrong, good/bad, successful/unsuccessful, positive/negative, win/lose, safe/unsafe, past/present, and so on. Students often used this dualist approach to impart meaning by contrasting a desirable course of action or state of affairs with an undesirable one. The contrast highlighted not only the benefits of the former, but also the negative consequences of the latter. This communication approach therefore contained a strong normative message about how organisations should and should not conduct their employment relations affairs.

In some cases, colouring was used to signify good (white) versus bad or poor (black). Students sometimes used dramatic images to contrast strongly the positive from the negative attributes. This style of poster was not heavily dependent on text, although text was sometimes used to denote main ideas or to give additional meaning to the arrangement of images and symbols. In some cases students only highlighted one side of the binary opposition such as using 'ticks' to indicate the correct approach or solution while the opposite case was implied but not stated. Figure 5 is an example of the dualist approach.

In summary, the common characteristic of these three sub-types described above was that each approach grouped key ideas into distinct categories. The main difference between these sub-types was the way in which the categories were related to one another. In the diagrammatic approach, key ideas were linked by arrows, or the like, to indicate the sequence of ideas. In the story-telling approach, the cartoons format allowed the key category of ideas to be expressed in panels with the written text tying the narrative of the panels together. In the dualist approach, the construction of oppositional categories generated a contrast between two courses of action, views or state of affairs. This overall approach was akin to the multi-structural or relational categories in Biggs (1999) SOLO taxonomy in so far as students were exploring multiple concepts and the relations between them.

Metaphorical approach

Another approach was to use metaphors. These posters tended to be the most sophisticated posters both in terms of creativity of design and complexity of ideas. These posters were, in many ways 'imaged scenes' (Tuft, 1997:127). An example of this type of approach can be seen in Figure 6. In terms of Biggs taxonomy, this approach was either relational or extended abstract.

A common metaphor used by students was the staircase or ladder, which symbolised progress, advancement, elevation or improvement. Another common metaphor was the journey. For example, one group of students displayed the human resource performance appraisal cycle as a trip from Earth (where the goals were formed) via several planets (symbolising the steps of the cycle) to the destination, a distant star (symbolising performance improvement). Other journey metaphors included roads, railways and sea travel.

Other metaphors included: a barrier (obstacles or impediments to success), an umbrella (protective cover), a jigsaw (key ideas linked to form a solution), a scale (balancing the needs of competing groups/interests), a key (the secret to success), the blindfold (lack of awareness), the prison (a consequence of negligence), a sliced cake (shares for all), a contest (effort and the correct approach leads to victory), a recipe (ingredients for success) plus others.

Conclusion

In response to the growing need to develop and assess student multiple literacies, this paper has explored innovative assessment practices in a first year course entitled Employment Relations. The paper assessed the use of student posters as a means of communicating understanding. Our aim was to identify how students apprehend and display the structure of their knowledge of employment relations in a visual display. This paper identified five approaches to producing posters. It is through these different approaches to poster making that students demonstrated the structure and sophistication of their thinking about the meaning of employment relations.

The findings indicate that students can take five basic approaches to conveying a message visually: abstract, text-based, declarative, categorical and metaphorical. Categorical and metaphorical approaches sought to communicate multiple concepts and the relations between them. These approaches tended to be graded highly. The abstract, text-based, declarative approaches were less effective and showed lower levels of understanding. Examples of these kinds of posters will be used next time the course is run, to develop student understanding of how to communicate visually and effectively.

Is it worth using innovative approaches such as this in first year teaching? Our answer would be, overwhelmingly, 'yes'. In an increasingly visually-oriented world, where the technological capacity to create and manipulate images and image-based materials is increasing exponentially, students should be exposed to such exercises in order to understand that messages and meaning are created visually as well as aurally and by print. It is only by giving students the opportunity to 'have a go' themselves, that they can appreciate this process. We also owe it to the students to be explicit about the kinds of visual strategies that are likely to communicate with their audience most effectively (and hence result in higher marks). As teachers, we understand the various genres of writing, but have no or limited understanding of visual genres. Hence the classification scheme developed and explored in this paper should be of assistance to industrial relations teachers in developing visually-based assessment items in the future.

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Figure 1: Abstract Approach



Figure 2: Text Approach

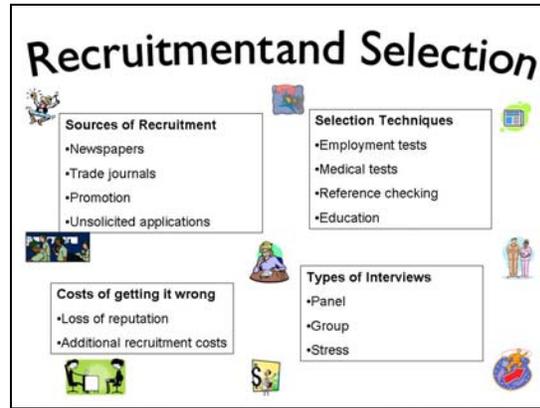


Figure 3: Declarative Approach



Figure 4: Categorical Approach (Diagrammatic)

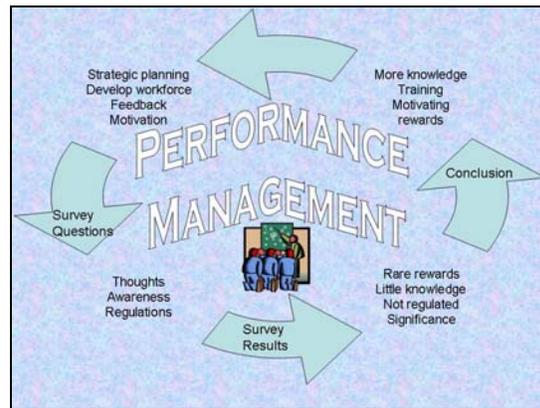


Figure 5: Categorical Approach (Dualist)

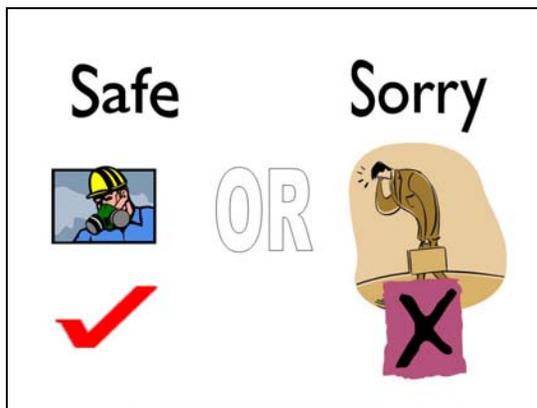


Figure 6: Metaphorical Approach

