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# A Multimodal Approach to Academic 'Literacies': Problematizing the Visual/ Verbal Divide

Arlene Archer

*Academic Development Programme, University of Cape Town, South Africa*

## **Abstract**

There has tended to be an overemphasis on the teaching and analysis of the mode of writing in 'academic literacies' studies, even though changes in the communication landscape have engendered an increasing recognition of the different semiotic dimensions of representation. This paper tackles the logocentrism of academic literacies and argues for an approach which recognises the interconnection between different modes, in other words, a 'multimodal' approach to pedagogy and to theorising communication. It explores multimodal ways of addressing unequal discourse resources within the university with its economically and culturally diverse student body. Utilising a range of modes is a way of harnessing the resources that the students bring with them. However, this paper does not posit multimodality as an alternative way of inducting students into academic writing practices. Rather, it explores what happens when different kinds of 'cultural capital' (Bourdieu, 1991) encounter a range of generic forms, modes and ways of presenting information. It examines how certain functions are distributed across modes in students' texts in a first year engineering course in a South African university (specifically scientific discourse and student affect) and begins to problematise the visual/verbal distinction.

**Keywords:** multimodality, access, academic literacy, social semiotic, scientific discourse

This paper is based on my PhD study which shows how a multimodal pedagogy enables engineering students to acquire the discursive, generic and linguistic competencies required by the discipline of engineering while at the same time remaining in dialogue with the discourses and modes of representation they bring with them (Archer, 2006a). My interest in this research began while teaching a Communication Course, focused on developing academic literacy practices, to first year engineering students in South Africa. The course focuses on rural development – the students have to research a particular area and make recommendations for specific interventions. Their proposals take the form of a written report and a poster. I became interested in multimodal approaches to academic literacy practices when I started to look more closely at the texts the students produced – particularly, the differences between the written reports and the visual genre of the poster. It seemed to me that the relation between engineering technologies and society was expressed to a greater extent in the students' posters than in the written reports. For instance, links were made

between the lack of technological advancement and certain social ills. These texts made me wonder whether different modes<sup>1</sup> and genres enable different discourses to emerge and different social relations to be established. It also struck me that there has tended to be an overemphasis on the teaching and analysis of the mode of writing in 'academic literacies' studies. In this paper, I argue for an approach which recognises the different semiotic dimensions of representation, in other words, a 'multimodal' approach to teaching and researching academic practices. I look at how certain academic functions are distributed across modes in students' texts and begin to problematise the visual/verbal distinction.

### **Complexity of the Term 'Academic Literacies'**

The common-sense understanding of the term 'literacy' refers to reading and writing. This is what Brian Street (1995) refers to as the 'autonomous' view of literacy, the claim that literacy has cognitive effects apart from the contexts in which it exists and is used. This understanding of the term is often used in conservative arguments about the 'literacy crisis', the poor state of the education system, and the decline of the English language. The term 'literacy' as seen in the autonomous way is construed as mode-specific. However, to counter this particular view of literacy, New Literacies Studies (NLS) attempts to give a social practices account of literacy where 'literacies' point to any form of social communication that requires a semiotic code and are not mode-specific. This view of literacy as social practice, argued by, among others, Baynham (1995), Barton and Hamilton (1998), Gee (1996), Heath (1983) and Street (1995) engages with diverse notions of reading and writing that are emerging from current social and technological changes. To be 'literate' then does not simply mean having acquired the technical skills to decode and encode signs, but having mastered a set of social practices related to a set of signs which are inevitably plural and diverse. It is clear that social, political and economic power is closely associated with access to and knowledge of certain literacies. Literacies are therefore understood as multiple, socially situated and contested. Lea and Street (2000) draw out the implications of this approach in the tertiary education context and outline what they call an 'academic literacies' approach to student writing. This approach takes into account student identity, institutional relationships of discourse and power and the contested nature of writing practices.

In contrast to this inclusive view of the term 'literacy', Gunther Kress, in his later theoretical work, moved away from the New Literacies Studies position to oppose the use of the term literacy to encompass all modes (2003: 23–5). He argues against extending metaphors from language to other forms of representation, and defines literacy as a label for 'lettered representation'. By using a homogenising term like 'literacy', he argues, the characteristics of one mode are extended across the others, precluding certain questions and tending to reify literacy into skills. Also, the use of the term often passes implicit value judgements where literacy is used as a metaphor for competence (as in 'emotional literacy' or 'cultural literacy').

In sum, there are three issues to be raised about the term 'literacy': its link to the verbal mode, its link to social practice, and its link to notions of competence. In this paper, I explore the complexities of the term further by looking at the

distribution of functions across modes. There is nothing inevitable about this distribution. My data unravelled and complicated my first impression of the students' multimodal texts, namely that a stronger link between society and technology is expressed through the visual mode. In fact, the data problematised a clear division of academic functions across visual and verbal modes. For instance, expressions of affect in the written mode may be more suppressed and implicit than in the visual mode.

### **Rationale for a Multimodal Approach to Teaching and Researching Academic Literacy Practices**

There has tended to be an overemphasis on the teaching and analysis of the mode of writing at the expense of other modes in academic literacies studies. Explorations have centred on student voice and plagiarism (Angelil-Carter, 2000), what students do with feedback (Clark & Ivanič, 1997; Lea & Street, 2000), student identity (Ivanic, 1998), debates around genre and process approaches to teaching writing (Cope & Kalantzis, 1993; Delpit, 1988). Although the emphasis in academic literacies studies has been placed on writing for sound pedagogical reasons, Kress (2000), Kress and Van Leeuwen (1996, 2001), the New London Group (1996), Stein (2003), and others have pointed out that the overemphasis on logocentricism has led to the neglect of other modes and their interconnect-edness. Since the mid-1990s, these theorists have argued that there has been a semiotic shift from the verbal to the visual globally, and there is an increasing multiplicity and integration of modes of meaning-making, including the audio, the spatial, and the behavioural (New London Group, 1996: 64). Part of this shifting semiotic landscape includes technological change and information technologies, which are altering the role and significance of the major media of dissemination, transforming the ways in which we communicate with each other, and transforming the ways in which information is produced, distributed and accessed (Costanzo, 1994; Kress, 2003; Selfe & Hilligoss, 1994; Snyder, 1997).

In order to deal with this changing semiotic landscape, multimodality is emerging as both a theory of communication and a particular approach to pedagogy. As a theory of communication, multimodality accounts for the multiplicity of modes of meaning-making, and contributes to the theorising of links between shifting semiotic landscapes, globalisation, re-localisation, and identity formation. As a particular approach to pedagogy, a multimodal pedagogy seeks to go beyond written and spoken language to value a range of modes through multimodal assessment practices.

There are a number of studies that explore the use of multimodality in different kinds of pedagogical settings. Kress et al. (2001) investigated the affordances of modes in the science classroom to see the potentials and limitations of each mode for representing. Pahl (2003) examined movement across modes in children's play as a way of expressing meaning, and looked at mode-switches when 'the affordances of one mode begin to lose their communicative possibility' (Pahl, 2003: 140).

Theorists in South Africa have looked to a multimodal approach to address equity and access issues. Producing text in the written mode can be a major

stumbling block to students in South Africa, especially as many have to write in a language that is not their own and have to adopt discipline-specific discourses and genres. Stein (2000, 2003) argues that multimodal approaches are theoretically more equitable than monomodal pedagogies. On the other hand, Thesen (2001) acknowledges that multimodal texts in the curriculum raise new questions about power and access, but may not necessarily open up access routes in a word-based field such as humanities. She argues that multimodality in the humanities requires students to engage with four 'layers' of language: the English language system, academic discourse, mode-specific language associated with the analysis of the visual, and a metalanguage of critical analysis. This can prove to be an extremely complex exercise.

I do not posit multimodality as an alternative way of inducting students into academic practices, nor as a step on the way to improved writing practices. Such a conception still valorises the mode of writing. Rather, I am interested in seeing what happens when different kinds of 'cultural capital' (Bourdieu, 1991) or knowledges and competencies encounter a range of generic forms, modes and ways of presenting information. I am interested in what resources students bring to academic and disciplinary genres, and the subsequent transformations of the genre. Theorising a multimodal pedagogy of diversity and unity is important in South Africa, but also globally, in contexts of multicultural and multilingual societies, technological change, globalised and re-localised media, and sub-cultural differences.

### **A Multimodal Look at an 'Academic Literacies' Course in Engineering**

As mentioned earlier, the site of this research is a Communication Course. This forms part of an academic development programme in an engineering faculty at a South African university. In South Africa and internationally, higher education has been undergoing a major transformation. Traditionally, universities presented specialist education to generally well-prepared and socially homogeneous students. However, curricular goals and practices have had to be reconsidered in response to social, economic and political change. There is now increasing diversity within the student population in terms of 'cultural capital' especially in relation to educational preparedness – linguistic competencies, numeracy, and visual and conceptual analytical competencies. The academic development programme attempts to address some of these realities of transformation. The programme structures the students' learning experience by extending the period of study and by including courses aimed at developing academic literacy practices. The students are all from academically disadvantaged backgrounds, notably, 'English as an additional language' students from ex-apartheid black<sub>2</sub> schools. The curriculum design of the Communication Course takes the students' backgrounds and schooling into consideration, as well as the new discourses and discourse communities they encounter in the tertiary environment. The course is designed around a particular project, the Rural Village project which introduces the idea of sustainability, seeing engineering as creating a more socially just and environmentally sustainable world for ourselves and for future generations. Diversity is used as a classroom resource, drawing on

students' home experiences, including the rural/urban divide which is a major source of difference in a developing country like South Africa.

In teams of four, the students investigate the infrastructural and developmental needs of a rural settlement of which they have personal knowledge. Aspects such as power, transportation, housing, water and sanitation are investigated. Their findings are presented in individual written reports and in a team-produced poster. Both genres are a common means of presenting research findings in the engineering academic community and in the workplace, and thus are taught explicitly on the course. The purpose of the written report is to evaluate – it outlines an issue, explores options to address that issue according to certain specified criteria, and makes certain recommendations. The format of the report has specified and defined sections: the terms of reference, synopsis, table of contents, introduction, findings, analysis and discussion, conclusions, recommendations, acknowledgements and bibliography. The purpose of the academic poster is to convey information, argue, or propose an idea in a succinct and compact way. The poster genre also conforms to a standard form in engineering with specific regulated conventions. This includes generic aspects, such as a title, introduction, conclusion, bibliography and the names of the producers. Although genre is about conventions at work in a domain of practice and discursive practices are ideological in the ways in which they serve to maintain existing relations of power (Fairclough, 1992; Gee, 1996), it is important to bear in mind that there is a constant tension between convention and change. This is the effect of the 'constantly transformative action of people acting in ever changing circumstances' (Kress, 2003: 102). What interests me in the texts that the students produced was the degree to which they conformed to academic conventions, whilst still incorporating a sense of individuality.

I will look at the written reports and the poster produced by one group of students in order to exemplify some points around multimodality. The group consisted of Mthoko, Mbongiseni and Thabang. The three students are male, come from rural areas (Limpopo Province, Mpumalanga Province, Free State), are aged between 18 and 22 and speak Sepedi, Ndebele and South Sotho respectively. The group called themselves 'Nobody and Co.' as they investigated a rural village with the rather otherworldly name of 'Nobody'. It is the hometown of one of the students, Mthoko, and is to be found in the Limpopo Province in South Africa. Mthoko explained that the village was named after one of the first white settlers in the area. Apparently, the last words uttered on this settler's solitary deathbed were 'Nobody is here'. The poster is an ordered scientific text (see Figure 1). The introduction provides important demographic detail on the area (such as types of employment and income), a clear listing of the problems of the area and the criteria for development. The poster is divided into infrastructural problems (notably electricity, roads, water and sanitation) and each of these is looked at separately. The written text is strongly framed by the use of borders to demarcate the different sections.

My reason for analysing these students' texts is that I see texts as sites of struggle over discourse, meaning, subjectivities and power (Chouliaraki & Fairclough, 1999; Fairclough, 1992), and therefore crucial sites for investigating access to academic literacy practices. One of the most significant properties of texts is their interdiscursivity and no text is ever monolithic without space for



I am aware that a textually based approach risks separating out and reifying the different modes and discourses in a text. Rather than seeing the meaning of the text as divisible into a number of separate semiotic modes, it is more generative to look at how the interactions of modes make meaning within particular texts and contexts. To this end, I advocate a social semiotic multimodal analysis of students' texts (Jewitt & Oyama, 2001; Kress & Van Leeuwen, 1996; Stein, 2000). This approach focuses on 'the relationship among texts, social contexts, and the social practices language and other modes realise' (Stein, 2000: 334). In looking at the students' texts, I look at the ways in which certain functions are distributed across both visual and verbal modes, specifically scientific discourse and affect.

### **Modal Realisation of Scientific Discourse**

The understanding of discourse that I work with is that developed within recent social theory, based on the work of Foucault (1970), to refer to the ways social institutions define and regulate the practices within those institutions. In other words, discourses are 'socially constructed knowledges of (some aspect of) reality which give expression to the meaning and values of an institution or social grouping' (Kress & Van Leeuwen, 2001: 4). According to this view, scientific discourse is a semiotic practice which has evolved functionally to do specialised kinds of theoretical and practical work within social institutions.

### **Modal distribution of domains of practice**

Scientific discourse serves to create a disjunction between everyday common-sense knowledge and the systematised knowledge of the discipline. What is interesting in the texts that the students produce is a coexistence of different domains of practice (the everyday and the technological) with varying degrees of seamlessness evident in different modes. The predominantly visual nature of the poster genre seems to enable a more comfortable mix of domains than the written report. The choice of images, namely photographs, colour and other features on the poster correspond closely to everyday perceptions of the world, whereas the written text is technologically oriented and is couched in impersonal, objective scientific discourse. This modal distribution of domains of practice allows different orientations to reality to coexist in a single text. On the other hand, in the written report, slippage between the everyday and the technological often manifests in lexico-grammatical awkwardness. An example of this is the following: 'Transportation is not an easy thing to do because roads are full of dongas and during rain they are muddy' (Mthoko's report). The first clause begins with a nominal form, 'transportation' – a grammatical choice reflecting notions of scientific technological discourse, where a clause is changed into a noun and an activity is transformed into an object. 'Transportation' is then referred to as a 'thing', reflecting this transformation. However, the choice of the word 'thing' indicates an orientation towards the everyday. Similarly, the lexical choices of 'road', 'full' and 'muddy' reflect on everyday experience. The mixture of these different orientations to reality, the naturalistic and the technological, results in some representational awkwardness in the predominantly written mode of the report. This slippage can be seen as an important stage in

the acquisition process of academic discourse. However, in the poster, the combination of the visual and verbal modes seem to enable a more comfortable mix of domains across modes.

### Linear and spatial design logics

There seem to be two different design logics at work on the Nobody Village poster: the linear sequential logic of written language (where font type, font size and consistent headings allow the eye to follow a linear path easily) and the non-linear logic of space (where different pathways are established through the text). The blocks of written language could be the organising design principle for the Nobody Village poster. They are placed in sequential order and the photographs are used to fill the spaces in between. Seen in this way, the overall design of the poster is firmly led by the written mode. However, in the poster, meaning is not necessarily derived from a linear logic, a particular sequence of reading, but from a spatial logic, a relation of parts to the whole. The whole is 'rural development' and the 'parts' are the different infrastructural aspects of the village (housing, water supply and sanitation, the environment, hydro power).

Slippage between linear and spatial design logics finds expression in the haphazard numbering of the captions of the photographs. The photographs are numbered 1.1, 2.1, 3.1, 3.4, 4.1. The numbers are spread around the poster in a non-sequential order with the first photo on the top left hand side of the poster labelled 3.1. The numbers are written by hand within the word-processed text which could point to an uneasiness between the written and the visual modes. Complex and careful reference is made to the visuals in the body of the written text and the numbers are written in red, perhaps indicating the important role of the visuals in understanding the written text.

Part of the visual display of the written mode on the Nobody Village is the use of point form. The binaries operating in the scientific discourse of the poster are separated out and reified into the 'advantages' and 'disadvantages' of particular technologies (hydroelectricity and quality concrete roads) which are listed in point form. The brevity of point form has provenance in scientific textbooks and in commercial genres where 'time is money'.<sup>4</sup> A point form structure enables a particular kind of knowledge to be produced, that which is able to be segmented and compartmentalised into discrete units. This is a different kind of affordance to that of argument, where the knowledge produced is about the connections between elements. Also, point form used without numbers tends to reduce hierarchies, acting as a leveller of categories. In this way, a list of advantages for loam-gravel road in Mthoko's report is not hierarchised:

- It is not expensive because its cost is lower than that of bitumen and quality concrete.
- It can resist hot and cold conditions because of its ceramic nature.
- It flattens the tyres after a long period because its surface has less friction with the tire.

Although the rhetorical purpose here is evaluation, the flattened hierarchy and the cryptic nature of the abbreviated point form result more in a list of equivalent facts than a progressive argument. Point form is also used on the

poster to break up a body of writing into sections (as in the 'water and sanitation' section of the poster). Point form used in this way tends to limit discursive writing. This is generally a desirable effect in a predominantly visual genre, where display is emphasised. However, the resulting flattening of conceptual hierarchies could also limit the analytical potential of the representation.

### **Degrees of authorial distance**

In both written and visual modes, scientific discourse is realised through degrees of authorial distance from and degrees of engagement with the subject matter. In the Nobody Village poster, the authorial voice is authoritative, distanced and neutral. In describing the village, the simple present tense is used to indicate a habitual state of being: 'The village experiences adequate rainfall during rainy seasons'. Authorial distance is created through the use of the agentless passive form: 'the suggested and studied sources were . . .'. The first and second person are not used on the poster, except in the captions which are markedly different in lexis to the rest of the written text. 'Dust leave me alone' is a very personal expression of what it is like to walk on the gravel roads of that area. The use of the generalised 'you' in 'Queue till you dry out' establishes a sense of collective experience of hardship. The captions have a different status to the blocks of written text. Students do not have to use extended argument and discussion in the captions. Also, they are based on a strong connection with the visual mode which, in this case, frees them up from distanced and neutral academic discourse.

In the reports, grammatical choices are made to represent evaluative qualities in a 'technologised' way, so the adjective 'efficient' becomes the abstraction, 'efficiency' in Mbongiseni's report. The term 'efficiency' points to the discursive provenance of economics: 'Technology has improved production efficiency'. Thus, evaluation becomes an abstraction and a timeless truth without context. Turning attitudes into abstract qualities is one way of sounding objective while still presenting a point of view.

The fact that scientific discourse seems to manifest more in the written than in the visual mode is not surprising considering that students encounter academic discourse more often in the verbal mode (in their readings or in lectures). In courses aimed at developing academic literacies, the verbal is often prioritised over the visual, and I argue that these courses should take cognisance of the different modal realisations of scientific discourse. I have attempted to demonstrate that in the written mode, scientific discourse is realised through lexical choice and particular grammatical constructions such as nominalisation. In the visual mode, scientific discourse is realised through diagrammatic representation, naming and labelling represented components and organising information into analytical hierarchies.

### **'Dust Leave Me Alone': Modal Realisation of Affect**

When thinking about modal specialisation, we need to consider what aspects of the world are represented in what mode. Although all modes can realise all functions, they are pushed in certain directions by particular texts and practices.

### Visual realisation

Thesen (2001) speaks of the affordances of the visual mode to express personal and affective aspects. According to her, the detachment that typically goes with linear, rational approaches to essay text literacy is difficult to achieve with the intense emotional involvement that often accompanies responses to image. In the particular context of the Communication Course in engineering, the visual mode does appear to be more conducive to the expression of affect than the written mode. In the Nobody Village poster affective dimensions are largely suppressed in the written mode and are realised through the visual mode, the photographs, together with the captions. The ordinary personal experience of the village roads as represented in the photograph entitled 'Dust leave me alone' is described in the written report as 'conditions of roads in Nobody are retarding the pace of business effectiveness' (Mthoko's written report). The everyday experience of queuing 'until you dry out' represented on the poster is described in the report as 'more water supply systems are required in the village' (Mbongiseni's written report). Here the genre of the poster (and the genre of the caption, which links the visual with the verbal) is able to accommodate humour, human values and the ordinary, whereas the technologically oriented discourse of the written reports is more impersonal, objective and humourless. Perhaps this is partly because the academic poster is a less regulated genre than genres dominated by the written mode and thus allows more scope for interpretation and expressions of affect.

Although the written text on the Nobody Village poster emphasises development, change and what 'could be', the visuals represent nostalgic timelessness – what 'is' and what has been for a long time. These are descriptive pictures representing an existing situation. In general, the photographs do not overtly explore any of the suggestions and possibilities for development of the village (except the 'Beat the thirst' picture representing underground water potential). The caption beneath the wide-angle photograph of the village reads: 'Peaceful winter. The spatial distribution of the houses in the village'. In this caption there is a clash of orientations, where the orientation of the engineer town-planner ('the spatial distribution of the houses in the village') coexists somewhat uncomfortably with the discursive provenance of nostalgia (indicated by the term 'peaceful'). Nostalgia is about yearning for a desired past which has been fictionalised and is perceived as absent in the present (Stewart, 1993: 23). Photography is an important representational choice which contributes to the semiotic realisation of nostalgia. I had given the student from the village, Mthoko, a disposable camera to take home during the vacation. The resultant photographs evoked 'home' for Mthoko and a way of representing that home to his classmates. These context-specific representations of the particular place were chosen above the images the students had used in their written reports which were mostly generic representations of a 'type' of technology (like a windmill) acquired from the Internet. The discourse of nostalgia I have described emanates from students' lifeworlds, as value systems are inextricably linked to what one feels nostalgic about. The discourse of nostalgia combines in interesting ways with the discourses of development and science and may be important in beginning to unpack the complex identity issues involved in living and working in a society like South Africa which is experiencing rapid transition. The tension between nostalgia for the past and an imperative to

change (and the semiotic realisation of this tension) can be highlighted and discussed as part of the curriculum.

### Verbal realisation

It is very interesting to observe that affective dimensions do also surface in complex ways in the written reports. In the reports, affect manifests in traces of other discourses within the dominant scientific discourse and is realised through lexicogrammatical constructions and typographical choices (for instance, bold face type and italics are often used for intensification). There are moments in Mthoko's report where a strong sense of engagement is evident. For example:

It is much difficult to accept how conditions of roads in Nobody are retarding the pace of business effectiveness . . . the condition of those dongas and muddy road is disturbing the pace of business. (emphasis added)

In a report that uses hardly any adverbs, the student uses a strong modal 'much' to emphasise the strength of the statement. Modality in both verbal and visual modes refers to the produced shared truth value or credibility of a representation. In using the modal 'much', the writer is aligning the reader to his own position and thus producing 'social affinity' with the reader (Kress & Van Leeuwen, 1996: 176). The use of the present continuous tense emphasises a sense of immediacy – these things are happening at the moment, not in some abstracted time frame. The words 'retarding' and 'disturbing' are adjectives with emotional valency, although these words as signs are more commonly employed in scientific discourse than a word like 'suffering'. In using a term with strong emotional import, like 'retarding', the case for non-acceptance of these conditions is strengthened. The notion of 'acceptance' here is an implied call for action to change the existing conditions of the roads. The use of the active form allows this statement to maintain a firm grip on the processes in the world described, which is a necessary basis for practical action. The strong modals, the present continuous tense, emotional lexis, and the active form contribute to the accumulated effect of this statement, which is largely a political one to bring about change to alleviate existing conditions. The strength of Mthoko's engagement could be due to the fact that he grew up in the village which he is investigating and has personally experienced the 'retarding' effect of the poor infrastructure.

To conclude this section, both the written and the visual mode are able to actualise affect through different mode-specific conventions. However, in this particular context, it does appear that the visual mode enabled easier expression of affect than the written mode. The reasons for this could be genre-specific or mode-related. Perhaps the poster genre is still a genre which has not yet been regulated to the same extent as the report genre in engineering. It could, however, be that the visual mode enabled degrees of affective involvement to be expressed in this particular context in engineering.

### Final Comments

It is clear that language, power and modalities are inextricably intertwined. A multimodal approach to teaching academic literacy practices could enable a

curriculum design which draws on the full range of students' semiotic resources and may also help to create less structured curriculum spaces (Archer, 2006b). The visual genre seemed to enable students to utilise discourses seldom used in engineering, such as the discourse of nostalgia. As opposed to the poster, these other discourses do not surface in any significant way in the students' written reports. It does seem that the visual mode (and the poster genre) can enable and accommodate mixed domains of practice more easily than the written mode for this particular group of students. Perhaps it is something about the visual mode or the combination of the visual and written modes that enables some kind of 'play' between standard Western scientific discourse and other discourses emanating from students' life worlds. For instance, nostalgia manifests in the interaction between the image and the written captions in the poster. This 'play' as movement between the visual and verbal is often evident in parodic forms, such as cartoons. Whether slippage of meaning occurs as a result of the visual/verbal nexus, or due to less overt regulation than in more mono-modal texts, it does appear that a semiotic space for different kinds of creativity emerges.

The potentials for realising affect in different modes can be discussed with students in terms of questioning the boundaries of scientific discourse and redefining the genres in engineering. Within a general awareness of the range of genres, of their shapes and their contexts, speakers and writers are able to newly make generic forms out of available resources. It is clear that the students' poster and reports did create space for the personal in these standard academic genres. Affect is not necessarily valued in the discipline of engineering in the same way it is in the humanities, yet it emerges in the students' texts, often in traces of other discourses within the dominant scientific discourse. Alerting students to these traces and their modal realisations could make them aware of how affect is a part of academic discourse, but often in a different form than in the domain of the everyday. The pedagogical aim would be to make students more aware of the ways in which they construct scientific academic discourse, and the ways in which they can, and already do, insert their own voice into their textual representations.

My analysis of the data has revealed that certain functions (like scientific discourse and affect) are developed in mode-specific realisations, and can straddle both the visual and the verbal modes. Exploring the affordances of modes and modal specialisation with students seems to be a vital part of a course aimed at developing academic literacies practices, particularly in the context of tertiary education where there is diversity of student experience and competencies. In assisting students to recognise academic literacy conventions, it is important to highlight that scientific discourse has both visual and verbal realisations, and to explore the dimensions of this in a discipline like engineering which has always been visual in orientation. Although drawing on a range of modes is not new in the genres of engineering, both in terms of problem solving and in the representation of information, this range needs to be valued through multimodal assessment practices.

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## Correspondence

Any correspondence should be directed to Dr Arlene Archer, University of Cape Town, Academic Development Programme, Hlanganani Building, Private Bag, Rondebosch 7700, South Africa (aarcher@ched.uct.ac.za).

## Notes

1. By 'mode' I mean the culturally shaped material available for representation, such as written language, spoken language, visual representation (Kress & Van Leeuwen, 2001: 25).
2. Given South Africa's past racial classification system under apartheid, it is necessary to explain the term 'black'. In this case, 'black' refers to African students, as well as those designated 'coloured' and 'Indian' under the previous regime. Under apartheid, the government schools were divided along the lines of racial classification, and black African students attended schools governed by the Department of Education and Training (DET).
3. 'Dongas' are furrows caused by soil erosion.
4. 'Provenance' refers to the importing of signs from other contexts (from another era, social group, text, domain of practice) into the context where we are making a new sign (Kress & Van Leeuwen, 2001: 10).

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