

# MULTIMODAL MAPPING: USING MIND MAPS TO NEGOTIATE EMERGING PROFESSIONAL COMMUNICATION PRACTICES AND IDENTITY IN HIGHER EDUCATION

**T. Grant\***

Professional Communication Unit  
e-mail: Terri.Grant@uct.ac.za

**A. Archer\***

Director of Writing Centre  
e-mail: Arlene.Archer@uct.ac.za

\*University of Cape Town  
Cape Town, South Africa

## ABSTRACT

Mind or concept maps have long been viewed as helpful tools to plan texts. The pedagogical focus is often focused on the end product as material artefact, with less pedagogical or assessment attention being paid to the process of mind mapping. A process-product approach to text and text-in-use can fulfil a variety of pedagogical goals that allow participants in a professional communication course to collaboratively negotiate meaning-making. By presenting mind maps in class and receiving immediate peer feedback, students have the opportunity to redesign their work to enhance understanding. This article uses a multimodal social semiotic approach as well as the notion of authorial stance (defined multimodally) to analyse a mind map, as both artefact and presentation. The analysis shows how a particular student transforms her work and thinking during in-class engagement. Besides turn-taking and experiential participation as communicator and audience, this negotiation of meaning-making contributes to graduate work-readiness. We argue that these scaffolding and scaffolded activities act to engage student identity formation as emerging professionals for the workplace.

**Keywords:** mind mapping, multimodal social semiotics, authorial stance, negotiated pedagogy, professional communication practices, identity

## INTRODUCTION

Using mind or concept maps as a creative planning device is not new in communication contexts (Buzan 1991; Theron 1994; Svantesson 1994; Fogler and Le Blanc 1995; Kress 2010; Grant 2012; 2015). There are also numerous software programs that help communicators, both writers and presenters, “[c]reate graphic representations of ideas or visualize data” (Oliu, Brusaw and Alred 2010, 170). This article explores the use of mind maps and mind mapping as

draft products and processes which university students use in the planning stages of their written and oral report assignments. Although draft practices such as mind maps and topic outlines are considered important building blocks of professional products (such as oral and written reports and proposals), they are seldom taken seriously in academic writing compared to the assessed final product (such as an essay). The process part is often omitted when academics assess academic writing and student deliverables. Professional writing, on the other hand, is often a collaborative team event, where the process is as important as the end product. As such, draft products such as mind maps and topic outlines are formally taught and assessed on professional communication courses at universities as a means of scaffolding learning and professional development (Grant 2008; 2012).

Since 2008, a sustainable business practices theme has been chosen at a particular university in South Africa in which to embed an entire senior commerce communication course. The particular focus, environmental governance, is an area which has suffered neglect in most corporate and industrial sectors, locally as well as globally. Within this vast and complex field, students are permitted to choose their own environmental topic to determine the permutations that appeal to them most. As a signatory of the Talloires Declaration on environmental sustainability (1990, 2002), and, more recently, the Gulf Campus Charter (2011), the university has undertaken to incorporate environmental literacy into its campus practices and academic curricula and to measure and limit its carbon footprint; involving students in the process aims to add value to their own education as well as contribute to a sustainable institution. There are plenty of choices related to this university's sustainability policies and practices such as water, waste, energy, transport management and green building design to engage their attention and interest. Having made a choice, students either individually or in small teams begin to work together and plan their way. At the end of the course, they present their final oral and written reports to a designated client.

## **METHODOLOGY**

The professional communication course in question runs over a semester. When it started in 2008, students worked individually as there were only about 12 students. Since then the course has grown to nearly 30 students and they now work in small teams of up to three students. An environmental consultant is invited as guest lecturer to provide background to environmental issues and selected topics after which students select their topic. Students then have approximately two weeks for exploratory research and brainstorming before presenting their mind maps on A5 size newsprint in class. As rough artefacts, these mind maps are hand drawn using coloured felt pens of their choice. Students are briefed that their mind maps will be

critiqued by the facilitator and their peers in turn.

In order to illustrate the negotiated nature of their verbal and visual designing activities, the processes and product of one particular student has been selected for analysis in this article. The realisation of collaborative pedagogical events into material semiotic artefacts allows us to shift the analytical focus between product and process. What follows therefore is neither a neat nor linear discussion, but an iterative analysis which aims to resemble the cyclical and hybrid nature of representation and communication. Our analytical gaze shifts from student product to pedagogical process in a cyclical and multi-layered configuration.

Whereas sign-makers' planning and processes of creation, prompted by their interest, may precede product display, much of this occurs out of class. In class, the audience as interpreters view the "finished" product, the physical and material artefact. They are first drawn to the choice of topic, medium and site of display before probing deeper to consider discursive, generic and modal semiotic practices and ensembles. Their "interest" (Kress 2010) determines how they engage with the product and its presenter. For this reason, the analysis focuses firstly on the mind map as semiotic text and secondly on the situated practice of classroom presentation and discussion. Both text and text-in-use are therefore foregrounded. A multimodal social semiotics approach is taken in the analysis of students' textual products (Jewitt 2006; Jewit 2009; Kress 2003; Kress 2010). Halliday's (1978; 1994) social semiotic metafunctions provide a useful lens for analysing ideational, interpersonal and textual meaning while the multiliteracies framework (Cope and Kalantzis 2000) and the concept of authorial stance (Hyland 1999; Hyland and Tse 2004) are helpful in illuminating the process text-in-use aspect of student presentations and negotiations.

The analysis of the selected mind map is informed by the researcher's personal observation of its presentation in class, notes and tape-recorded transcriptions of selected classroom moments. Interviews with the students (presenter and audience) augment the findings. A brief overview of the semiotic features of mind mapping is followed by a more specific analytical discussion of the mind map in question.

## **THEORETICAL FRAMEWORK: SEMIOTIC FEATURES OF A MIND MAP**

At the beginning of the course, the facilitator talks about ways of generating ideas and gathering information. Although most students are familiar with brainstorming activities, many may not consider using mind maps in gathering and negotiating information or planning assignments. In this particular communication course, mind mapping is regarded as a crucial part of the exploratory meaning-making process, a creative activity of design emerging as a material artefact. Thus, the mind map (re)presents both a visible and tangible object and the practices

that brought it into being. Within a multimodal social semiotic framework, we argue that the notions of discourse, medium, site of display, genre and mode intertwine to constitute meaning-making of the mind map in question. We now discuss each in turn.

## **Discourse**

Although the term discourse is used in many fields and contexts (Fairclough 1995; Kress and Van Leeuwen 2006 [1996]; Gee 2004; 2008), it is used here as the totality of communicative meanings within a given field. It encompasses both conceptual and narrative ways of organising knowledge that abound within a particular intellectual field or social practice. Conceptual approaches classify information in analytical and categorical ways such as comparison and contrast and cause and effect whereas chronological or story-telling approaches characterise narrative ordering.

Many disciplinary fields are blurred and overlap. Intertextuality and interdiscursivity characterise professional business genres in the 21<sup>st</sup> century (Fairclough 1995; Candlin and Hyland 1999; De Groot 2008; Grant 2012). Broadly, this means that business communication is not constituted of one “classical” discourse with discrete subject silos or fixed boundaries in a Bernsteinian (2000) sense but is an amalgamation of a number of discursive practices. Business communication inhabits a number of domains at once and thus proffers multiple voices, from marketing and accounting to information systems and finance. When a plethora of discourses are appropriately woven and mesh in business communication texts, the argument posited may be strengthened. On the other hand, blurring of discourses may give rise to inconsistent reasoning and poor connection, resulting in epistemological confusion and textual incoherence. This may, in turn, undermine interpersonal understanding, rapport and credibility with the audience (Hyland 1999; Hyland and Tse 2004).

A number of discourses – not always fully developed but emerging – were evident in the student mind map selected. A professional business discourse with a focus on commercial costs and financial feasibility is evident as is an environmental, “green” discourse reflecting the actual topic content. These two strands or discursive “regions” (Bernstein 2000) are often in tension, particularly in large institutional and corporate settings. These institutions regularly find themselves conflicted by having to satisfy primary stakeholders such as constituents, shareholders, investors or interest groups. Given the global mood since the financial meltdown and subsequent carbon emission scandals, attempts to maximise profits in socially and environmentally responsible ways has increased rather than diminished these tensions (Grant 2010; 2012). Secondly, another discourse which emerges is a legal one as this student engages with legislation and policy documents relating to various declarations and sustainability policies

and plans of this university and other institutions. Thirdly, environmental topics such as waste management and recycling lend themselves to a scientific discourse where hierarchy, categorical sub-division and classification of types are characteristic. There is less evidence of a formal and structured academic discourse at this stage. This is evident in the use of non-linear ordering principles, an informal register (both orally and in writing), overcrowding of sub-topics with “off the cuff” spatial arrangements, uneven lines and the anomaly of generally careless spelling errors and a mixture of “fonts”, all of which will be discussed in various sections below.

The various identified discourses are not mutually exclusive. However, it is useful to identify merges in and disjunctures between discourses during these draft product interventions in order to facilitate the communicative development of student teams. The ways that discourses are instantiated through the medium of the mind map [and through the site of display] are important for the analysis.

### **The medium and site of display**

As a physical and mental process, mind mapping affords participants opportunities to creatively generate, challenge and negotiate ideas, and then to compose these into meaningful arrangements on a medium of choice, in this case newsprint. The medium acts as the channel or vehicle of communication. How information is displayed on this medium is called the site of display (Jones 2009). What topic headings and subheadings to choose and how to arrange and display these visually are negotiated decisions and activities that follow. These process-product practices may be accompanied by argument and contestation, trial and error both out of class during planning and in class during presentation before consensus is reached. Thus, the process involves on-going discussion and feedback resulting in processes and products of negotiated design rather than solitary creations.

A mind map of the large newsprint size stipulated in the course affords a different medium and site of display to either the A4 page or computer screen. The generous space dimensions allow for multidirectional arrangements across the sheet with varying meaning potentials. As the sheet of paper or cardboard can be oriented in portrait or landscape, a non-linear “take” on things is encouraged, as seen in the example selected. Once mapped out within a particular frame, designers may consider how to communicate that which is represented on the mind map. What is the most appropriate medium for display and where/how should it be displayed in terms of appearance and location? A mind map is in and of itself a site of display but context and location – where displayed and whether on a board or flipchart stand, fixed or mobile, in a classroom or boardroom – allows the site to take on additional dimensions (Grant 2012).

## Affordances of genres and modes

Genre is closely related to medium. As an informal genre, a mind map provides opportunities for semiotic work of an interim and provisional nature. Genre is defined as the “emergence of social organization, practices and interactions [that are] recognizable [and] experienced as having relative regularity and stability” (Kress 2010, 113). According to Kress (2010, 113–114), genre “comes through participation in *events* formed of such actions experienced as recognizable *practices*” (his emphasis). This suggests ordered, expected, habituated ways of doing things. This view may be more suggestive of a formal, “classical” genre. Although mind maps have conventions which are socially constituted, they are not as legislated as other more regulated genres like the formal report, for example.

An informal genre such as a mind map affords a “what if”, either/or, trial and error practice approach which is neither certain nor predictable. Mind mappers may not consciously consider generic patterns or ordering principles although it could be argued that mind maps do share generic traits and a certain “look and feel”. According to Kress (2010, 95), mapping of this kind attempts to “‘fix’ meaning” in habitual ways and shape what viewers have come to recognise and expect of this type of visual-verbal display. He contends that a map is “organized through the affordances of image, using the semiotic logic of space and the modal affordance of spatial relations between simultaneously present entities”. In mind maps, everything can be viewed at once. Viewers expect a certain hierarchical display of main and sub-points, orchestrated in a particular and meaningful order. Although mind mappers may have the freedom to creatively plot and map uncertain terrain, as early cartographers might, they also aim to follow certain iconographic conventions in order to provide a sense of place and possible direction, a deictic function. Kress (2010, 17) defines deixis “as the term which names locations and directions within the semiotic object, which direct participants”. Besides the “signage” within a mind map such as lines or arrows, a mind map itself uses orientation and deixis to help participants locate themselves at the outset of their journey. The practice speaks to the question of design, framing and composition: the arrangement of visual and verbal data on a page, the spatial relationships between words and other design elements such as lines/arrows (vectors) and shapes such as text boxes and circles. Mind mapping accommodates various sizes of “font” (even if handwritten) as well as what’s up, centred or down, foregrounded or backgrounded and challenges the sequential or linear arrangement of data within the frame.

This broader inclusion of lexical and graphic resources and the spatial arrangement between them encourages a visual stance first and a “consider all factors” cognitive/affective engagement which, according to Theron (1994), may amplify creative brainstorming and

innovative meaning making. Elements in framed space such as shapes, colours, icons, lines and other visual semiotic resources add a richness which works to engage participants and “enables sign makers” to select modes “to do different kinds of semiotic work” (Bezemer and Kress 2008, 171).

Meaning is distributed across modes; each mode has a particular area of specialisation and carries a particular load (Jewitt 2009). Choices need to be considered and made. Important terms that illuminate these choices, relationships and connections are “ensemble” and “orchestrations” (Jewitt 2006; 2009; Kress 2010). Simply put, “ensemble” relates to what modes are selected from a repertoire of semiotic resources; how these combine and work together refers to “orchestration”. The musical connotation is apt relating as it does to choice, harmony, composition and practice. The more coherently modes resonate and work in concert, the greater the potential for effective representation, communication and mutual meaning making. As an embodied activity, the lines between the cognitive and affective are blurred and create multi-layered and multi-faceted meaning making opportunities for sign-makers and interpreters to engage as participants in mindful communication. According to Kress (2010, 83), the separation of “mind and body, of affect and cognition” is artificial at best. The different kinds of thinking enabled by this informal genre – besides broadening knowledge experientially – may also serve to build relationships, interest, attention and curiosity which may in turn engender a sense of fun and rapport in the classroom, a dialogical, interpersonal affordance, pertinent to both teaching and learning. Allowing students to create informal genres such as mind maps to explore professional communication practices in less regulated curriculum spaces aims to stimulate interest in these practices and to do so in an engaging and situated way (Grant 2012; Grant and Borchers 2015; Archer 2012).

We have argued that mind maps involve choices around discourse, medium, genre and mode. Through in-class instruction and out-of-class preparation followed by classroom presentation, discussion and feedback, sign-makers as designer-presenters consider what social norms and regulations govern their choices around these aspects. As each verbal and visual semiotic resource has its own affordances, logics and framing possibilities, it is up to designers, first, to discern which they consider most apt for purpose and audience and then to test their choices collaboratively in class. We will now proceed to analyse the selected mind map in terms of the choices made.

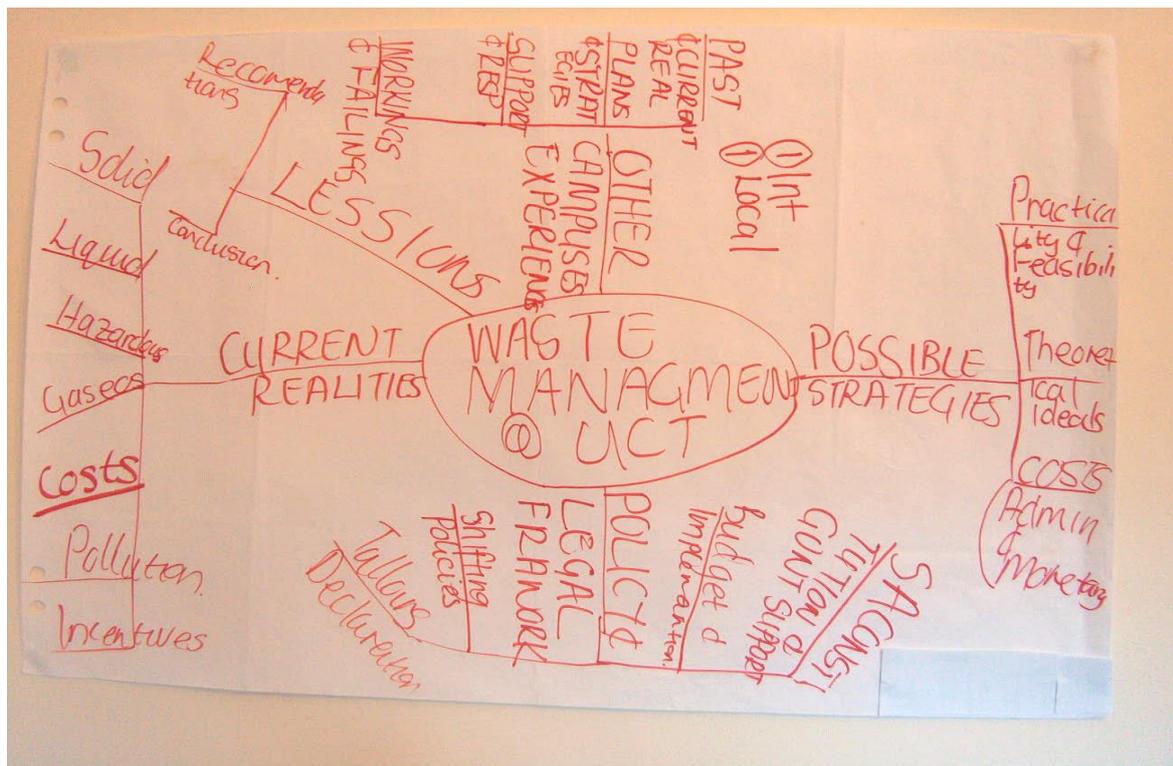
## **DIS/JUNCTURES IN DISCOURSES UTILIZED**

As an opportunity for creative design, the practice of mind mapping allows students to explore and construct a knowledge base by generating ideas that reflect and foreground their topic

interest and through arranging these into hierarchical relationships. How students use narrative and conceptual tools to portray these relationships and explore the tensions and disjunctures that arise as they grapple with choices around discourse, genre and modes. In the analysis of the mindmap below, we also look at evidence of shifts from student to professional identity and how these shifts – as minor as they may seem at this stage – may impact on identity formation. The underlying discourses can be revealed through the choice of labelling on the mind map: what words and phrases are used to name things and represent various topics and what are the effects of these choices? How do students privilege, label, order and frame certain information to enhance or weaken salience? De-contextualised mind maps, at first silently displayed, can manifest a number of discursive disjunctures through design and semiotic choices. However, these disjunctures have the potential for being ameliorated through students' verbal contextualisation and dialogue.

Portia,<sup>1</sup> a postgraduate accountancy student, chose the subject of *Waste Management* as her topic. A conceptual scientific classification of categories of waste management, as discursively itemised, seems to dominate. Portia's choice of topic was prompted by prior interest and background knowledge. As a motivated sign-maker, Portia selected a topic which bridged the gap between an undergraduate locus of expertise (science) and a new (and still strange) field of postgraduate study (accountancy). In the early stages of this communication course, she had approached the facilitator to request permission to involve both her old and new sites of study – which was granted. In one topic, waste management, she could combine the scientific known with the commercial unknown in an attempt to explore and consolidate both. During her interview, she admitted to feelings of tension about her choices and changes in direction but appreciated the freedom to discover and blend her voice within this conjoined environmental and commercial topic.

At first glance, the mind map in Figure 1 appears more apt as the underlying design of a scientific paper or policy document than an investigation report. Important report sections, particularly Conclusions and Recommendations, are not prominently displayed and one only becomes aware of them after much scrutiny and later through negotiated discussion. Compositionally, the mind map is "divided" into five sections but four major quadrants, more or less equal in size, are prominent. Although shapes are "balanced" and lines are used, the reading path is not clear as deictic participant directions such as numbering and arrows are missing. Reader expectation tends to the more "usual" left-right clockwise reading path in the West but this approach does not make sense. This initial viewer confusion affects textual coherence and this confusion was only clarified during Portia's anti-clockwise presentation where she dictated the reading path through voice and gesture and asserted her authorial stance.



**Figure 1:** Waste management mind map

As can be seen in the figure above, the circled topic in the largest writing takes centre stage with all other mind map elements emanating from it. The topic is further sub-divided into *Current Realities* on the left and *Possible Strategies* on the right. In terms of reading path and Kress's contention (Kress and Van Leeuwen 2006 [1996]; Kress 2010) that what is "given" is often on the left and what is new is on the right, this arrangement makes sense to a Western reader who, having read the centred topic, will appropriately move to the left side. This "start" seems to engage a scientific discourse which is borne out further by classification of four kinds of waste: *Solid*, *Liquid*, *Hazardous* and *Gaseous* although the category heading, *Types*, is assumed. This is an effective reader/viewer starting point as the list itemises the instances of waste management to be considered. Solid waste takes "first place" on the list with liquid and hazardous waste relegated to the middle and gaseous waste ending the list. As first and last positioning in a paragraph or list tend to receive a greater proportion of attention in terms of primacy and recency effects respectively, it seems that solid waste enjoys greater salience overall.

Alongside this scientific and environmental focus, business discourse also features prominently. Below the waste classification list in darker script and thicker pen strokes, the word *Costs* as category heading is not assumed and heads two seemingly "given" costs: *Pollution* and *Incentives*. On the righthand side, "new" costs relate to *Practicality & Feasibility*,

presumably of future strategies and ideals. Costs is further sub-divided into *Admin* and *Monetary*, the only underlined category sub-division on the right. Below the centre topic is another sub-heading relating to costs: *Budget & imple[menta]tion*, the third mention of money matters. The fact that costs are important enough to be listed in three quadrants of the mind map highlights the importance of the commercial business interests of students on the course and an institutional reality that cost-benefit analyses and feasibility are key givens that may preclude certain waste management measures as too expensive. The hard-nosed “corporate” message seems to be: it all depends on the price-tag.

The balanced juxtaposition of *Current Realities* with *Possible Strategies* on either side of the main topic puts them on “opposite sides”. It suggests a narrative of past action/inaction and consequences (pollution), the current status quo as well as future possibilities, a time line involving theoretical and practical considerations. This arrangement reinforces the tension between reality and possibility. Although there is a narrative “then-now” arrangement in terms of past and current realities and possible future strategies, a conceptual ordering of the text and underlying discourse seems more prominent. Besides waste classification, comparison and contrast between these categories as well as between universities is evident. Cause and effect in dealing with the consequences of poor policies (pollution) is another way of organising knowledge. Explanations of theoretical ideals versus practical strategies including costs are also evident. Each of these analytical tools for constructing knowledge reinforces the scientific appeal and heightens her authority within a scientific domain.

Above and below the centrally positioned scenario topic are two further sub-divisions. The classification below the line can, according to Kress and Van Leeuwen (2006 [1996]), represent the factually “real” situation based on empirical data. A legal discourse is evident with an emphasis on government legislation with some capitalised sections and larger writing (*Policy & Legal Fra[me]work* and *SA Constitution & Govt Support*). The focus on legal and constitutional matters and the *Talloor[e]s Declaration* adds a substantive evidence base and a sense of professional gravitas to the content. The above-the-line comparison with other universities represents more idealistic and generalised information (Kress and Van Leeuwen 1996). This makes sense in terms of Portia’s aim of explaining and comparing existing South African frameworks, policies and support, particularly government support, seen as real, but limited, with the more advanced situation abroad, seen as “ideal”. Although the legal framework below and comparative message above may seem important, the cramped, side-on writing is not easily accessible from a reader’s point of view. The reason for this is likely to be twofold. Firstly, these two sections are not centrally located along the topic continuum in terms of a left-right reading path and secondly, the side-on writing suggests that either the angle of reading

has to change or the page needs to be turned from a horizontal to a vertical plane. The physical difficulty of this above- and below-the-line reading path contributed initially to marginalising these topics somewhat and removing them from the forefront of her argument; however, during her presentation, she could physically turn the mind map, thus “righting” the message and giving each quadrant its due.

Despite the slightly confusing layout, the mind map content exhibits overall textual unity of theme and emphasis of certain key issues. This combines with a sense of neutrality and detachment, further realised through informative phrase headings and the lack of emotive or relative sentiments, sensationalism, rhetorical flourishes or interactional resources such as questions or exclamations (Hyland and Tse 2004). This detached authorial stance characterises a domain of facts and figures, a key characteristic of both a scientific past and a numerate future in accountancy. The interrelationship between the scientific, environmental, business and legal discursive ensemble and salience in terms of what is foregrounded, and in what order, heightens authorial credibility in professional and institutional domains and reinforces Portia’s claim to a certain expertise.

Besides topic salience, relational salience is heightened through colour (red), size of lettering, use of capitals and/or underlining for some headings and position on the page (centre, left/right; top/down) as well as vertical and horizontal writing. Although red is often associated with positive feelings, it can also carry connotations of danger, fire, anger and strife (Archer and Stent 2011). If Portia wanted to highlight the dangers of toxic waste and undesirable yet common hazardous waste management practices, the choice of red marker may not have been accidental. She may, consciously or unconsciously, have been drawing on representational conventions in circulation in broader society. Certainly, the deep, saturated red colour and the scrawled, graffiti-like writing crowding the frame, both vertically and horizontally, contribute to the “noise” on the page and an overall sense of urgency which may serve rather than hinder interpersonal salience.

Juxtaposed to relational salience, the informative epistemological stance as well as emerging professional identity as discursively displayed, is a contradictory “school” look to the mind map. The red handwriting is a messy mixture of uppercase and lowercase lettering – sometimes in the same word. The “font” at times resembles cursive script, which adds a softer, emotive element belied by the factual content. This, together with contractions, abbreviations, spelling errors and sloping lines, suggests a hurried, impromptu approach with minimal if any proofreading and little regard for register. This ontological tension between an emerging professional identity, formally suggested by content topics, sub-topics and “scientific” classification on the one hand and the “young”, untidy and seemingly linguistically uneducated

impression on the other, creates a semiotic disjuncture. This weakens professional identity and sets up an interesting paradox. As Portia seemed to be at a professional crossroads in terms of her career, these mixed messages and contradictory impressions may be a manifestation of her struggles. It took the oral presentation and feedback session to unravel some of these discrepancies and misconceptions.

## **TRANSFORMING THE MIND MAP TERRAIN THROUGH NEGOTIATED DESIGN**

### **From exhibition to presentation**

At the start of the presentation session, mind maps were hung up around the classroom on walls and boards so a number of mind maps were visible at the same time. The audience had the opportunity to move around and take a closer look before presentations started. Once the audience had surveyed various mind maps they gathered around while presenters talked them through the proposed report headings and investigative path.

The handwritten use of markers on a medium such as newsprint – in this case, created from recycled paper – suggests a draft stage, an interim “lo-tech” measure at once old-fashioned and outdated and yet apt in informal rehearsal phase. Equally apt for such an occasion is the flimsy, creased nature of the work, evident in the illustration above. No one expected a “finished” product, neither of the mind map nor presenters in terms of appearance or demeanour. As physical sites of display, presenters wore their everyday student wear; no instruction was given to “dress up” nor did anyone presume to do so. This, together with the fact that most students informally stood around the presenter, reinforced the “backroom” ethos of draft delivery. The affordance of a mind map presentation as a work in progress aims to provide a breathing space for participants to test ideas in a casual yet supportive and scaffolded environment in a Vygotskian sense (Gee 2004; 2008; Gallimore and Tharpe 2002).

The medium of communication, a “hard copy” mind map, comprised writing but also involved speech during the presentation. The interplay of verbal and visual modes during the interaction stimulated interest and aided comprehension on the page which was further enhanced, extended and elaborated by speech including tone, pitch and pausing, gesture, movement, posture, eye contact and overall delivery style during the presentation. Although the focus in a mind map may be visual, the interplay of several visual-verbal modes during the interactive presentation created a relational, informative and expressive orchestration of key focus points (Norris 2004). This orchestration proved necessary, particularly as the site of display and reading path/angle were fixed. As discussed above, the sideways writing and lack of numbering in Portia’s mind map meant that a quick uptake was well-nigh impossible.

However, her scientific “lesson” during her presentation not only helped viewers comprehend her complex topic but also instantiated her identity within a scientific domain. Gesture, particularly directional pointing and beat gestures, added a sense of authority which underscored the environmental situations and challenges that a university might face and need to overcome. These bodily modes contributed to meaning making and credibility.

Besides modal specialisation, Kress (2010, 83) (his italics) considers what a mode is good for, most apt to achieve and its modal reach. “[*I*]mage or *speech* or *writing* or *gesture*” all cover different (and partial) meanings, all of which are dependent on and influenced by social context and participant culture and identities. What one mode may communicate effectively in one situation may differ from another. Portia’s use of gesture and movement for spatial effect, particularly finger pointing to direct our attention to a particular topic and augment verbal modes, compensated for mind map confusion. Gestures were also aligned with the direction and length of gaze in that presenters often looked at the topic at which they were pointing thus using eye contact to and from the audience to accentuate and punctuate points being made. Speech, gesture and eye contact could act as simultaneous counterpoints, the one to the other, with all playing integral roles in the interaction (Norris 2004). Whereas speech was used “to *name*, to *lexicalize* ..., *gesture* [was used] to *locate* an entity in the relevant space, to *localize* it in a specific site” (Kress 2010, 166) (his italics).

Although some presenters were more verbally confident than others, projection and audibility were not an issue during this session purely because of the smallness of the group and the proximity to the mind map. Growing presenter confidence was also partly due to the informality of the process, audience participation and the visual-verbal modal repertoire which provided a feeling of security to those who needed it. In addition to semiotic work being distributed across modes, audience attention and focus were also distributed across modes, shifting the spotlight off presenters to the display with a change in eye contact and gesture. Portia also moved from one side of her mind map to the other when dealing with her vertical writing and “opposite” sides and this movement served to punctuate the binary “then-now” narrative, reinforce compositional divisions across space and speed up comprehension.

Comprehension can also be realised through verbal content, arrangement and pausing. Presenters made use of the opportunities afforded during their presentations to develop a metalanguage to explain their narrative or conceptual orders, define concepts, emphasise salient features of the mind map and point out relationships between concepts. A great deal of talk revolved around actions to follow. Presenters provided interactive topic overviews and definitions to flag their audience’s attention and frame the stages of their investigation before discussing interim plans.

“And then I will ...”

“If I can find someone to talk to ...”

“I want to interview ...”

“There’re four major parts ...”

“Our topic is broadly ...”

“Our purpose is to ...”

“We’ve divided into ...”

“The headings show how we’ll proceed”

“We’ll look at past policy first, what’s been done, then ...”

“We’ll compare what’s happening now with plans ...”

During the presentations, the ensemble of visual, written and spoken modes as well as the focus on this type of metadiscourse (Hyland 1999; Hyland and Tse 2004) to *guide* and *involve* the audience worked together to clarify content, sharpen focus and elaborate details such as possible alternatives/solutions/improvements not yet recorded or which faculty or institution to choose and why. Resources such as embodied speech combined with writing, layout and colour and various iconographic devices such as shapes, lines, size, spacing and font to create a summary of various practices, a précis of what was to come. The mind map ensemble of orchestrated modes, all doing different semiotic work, is thus necessary to amplify meaning.

### **From critical reflection to redesigning**

According to Jones (2009), a display of this kind whether on a stand, wall or board is like a canvas, allowing users, “social actors”, to participate in viewing the display. Viewer participation and feedback permit creator-presenters to ponder, add and amend. This is not a distant relationship. Unlike a newspaper or computer screen where the reader/viewer may have exclusive rights to the material and may have or choose to have a more distant, anonymous relationship, this mind map presentation is quite literally, open to all. Viewers play a very different role as they are not there to “consume” but to give feedback (Jones 2009). In collaborative meaning-making, particularly across a diverse group, load-sharing and shifting occurs as partial meanings are negotiated across participants’ interests, identities and social contexts. These varying interests and motivations prompt different reactions and responses during the feedback session. The mind map as artefact plus its face to face presentation and interpretation, ensured that meaning potentials had the capacity to become greater than the sum of their interwoven parts with each co-present mode doing different semiotic work at different times and in different ensembles and orchestrations. Collaborative activities assist designer-

presenters to ponder, interpret and critically review the various social and cultural contexts and perspectives evident in their work as well as the relevance and appropriateness of content, formats and semiotic resources. This enquiry-based session contributed to deepening understanding and knowledge construction, which was very evidently not all facilitator-led or explicit (Grant 2012). This reinforces the aim of a negotiated and experiential pedagogy which is to share intellectual productivity for collaborative and long-term meaning making. Teachers as learners and learners as teachers need to critically give and take instruction and feedback in many nuanced ways both in and out of the classroom.

Statements and questions from the audience provide examples of the guidance given and this feedback was instrumental in opening up a space for redesigning.

**Table 1:** Examples of feedback provided

Statements	Questions
"Some of your headings are helpful." "You talked about students." "The topic seems rather broad." "Decide what your real focus is and take it from there." "There is a nice balance."	"How big is your study?" "Will you also include staff?" "What about ...?" "Are you also going to ...?" "Can you not possibly see ...?" "You could possibly also ...?"

This kind of feedback provided direction to speakers of what to do next. Authorial stance emerged and shifted between participants collaboratively. Whereas statements seem more authoritative and emphatic, the questions are more probing and suggestive (Hyland 1999; Hyland and Tse 2004).

Role switching and turn-taking ensure an equitable distribution of control and management. At first, autonomy seemed vested in the individual or team as designers as they resolved, out of class, what they wanted to say and how to shape their material. The message was the message represented. In class, before presentations started, the autonomy shifted to the audience as the message now became the message received as they surveyed the mind maps. The affordances of text and layout as visually (but silently) displayed relied on their immediacy and simultaneity on the page as viewers controlled their own gaze patterns and interpretative behaviour as solitary activities. As soon as embodied speech was added during the mind map presentations, control and attention shifted back to presenters initially and then to all participants during collaborative discussions. The affordances of the ensemble of spatial and temporal semiotic resources came into play and multiplied shared and negotiated meaning in unique ways. The mind maps stayed on the board or wall throughout the session. According to Kress (2010, 165), this persistence provided a "stable background against which the constantly

changing orchestration” of meaning and of knowledge “can be [mutually] developed”.

Draft products such as these play uniquely transformative roles as developmental contributors, as safe harbours for participants to take stock. Mind maps are not seen as business products in their own right. They are regarded as educational and epistemological resources for designers to “gather their thoughts” and engage in and experiment with various visual-verbal practices. They are particularly fashioned to act as planning devices not meant for client eyes; abbreviations, contractions, errors, untidiness (lines and writing) as well as informal demeanours and conversational styles seem acceptable at this type of “behind closed doors” rehearsal stage. The casual to and fro movements of speakers and team members was often shared by the audience who sometimes exchanged places with the presenter “up front” as they engaged with the mind map, sought clarity or interrupted to provide advice, some accepted, some contested. The relaxed posture, more animated expressions and casual movements were indicative of increasing rapport during the session. Together participants co-created and transformed various mind map designs into (more) streamlined structures to take forward to the next classroom event which involved teams designing a topic outline, the second iterative draft product on their writing trajectory.

## **CONCLUSIONS**

This early developmental planning stage contributes to enhanced expertise, confidence and an emerging professional identity, here still characterised by certain tensions and disjunctures. On the one hand, these tensions relate to understanding what discourses, media, genres, modes and sites of display are at the students’ disposal and how they can select, orchestrate and transform these for meaning making that is fit for purpose and audience. At a macro level, these tensions signify how participants can attend to and engage with sustainable business practices and social responsibility. Environmental sustainability or corporate citizenship is not a state of being but rather a process of becoming. Every dialogical encounter, both in and out of the classroom, aims to foreground critical elements in ways that go beyond communicative competence to engage students in transformative thinking, feeling and behaving in the world.

Researchers, past and present, such as Vygotsky (1978), Lave and Wenger (1991), Gallimore and Tharpe (2002), Gee (2004; 2008), and Kress (2003; 2010), among others, talk in their work about “assisted” imitation as students set about learning new and relevant domain-specific or generic discourses. In this case, students taught and learnt together collaboratively under the support and guidance of the facilitator. Of interest, however, – despite initial difficulties and the early stage of the research – is the fact that all presenters knew more about their topics than either their peers or the facilitator. As they prepared for and then participated

in class, they taught/learnt tacitly by experiential learning-by-doing. In a post-course interview Portia claimed: “I have learned that it takes a lot of research and understanding of the topic to achieve good work. There’s a lot of reading, searching over the internet, having interviews, group consultations, etc. that is involved.” She *also* emphasised having to keep “many balls in the air” and the need for “good collaboration” to achieve this. This sentiment was echoed by others in their assessments and reflections.

All along this trajectory, users as designers enter into pedagogical dialogues to negotiate products and processes. The implications of multimodal mapping in higher education contexts are far-reaching. As one respondent noted: “[I]t is very rare that the mind map used in the beginning to plot the desired route remains the same throughout the process. Things change and therefore I think the mind map [should be seen] more as just an ‘idea route’ because I believe that one should never commit to only one route and be ready for changes and therefore learn to adapt as quickly as possible.” Terms such as “process”, “tool”, “instrument” and “idea route” convey notions of adaptability, flexibility and, a “path for change”, all very noteworthy concepts in a time of transformation in higher education contexts.

As product, the mind map plays a tangible, foundational role upon which to design and build further communicative products; as process, it can contribute to professional development and identity within any field of study in a way that is not only scaffolded and collaborative but also creative.

## NOTE

1. As confidentiality was assured, all students, who gave signed permission to be part of the study, were given pseudonyms.

## REFERENCES

- Archer, A. 2012. Writing as design: Enabling access to academic discourse in a multimodal Environment. *South African Journal of Higher Education* 26(3): 411–421.
- Archer, A. and S. Stent. 2011. Red socks and purple rain: The political uses of colour in late apartheid South Africa. *Visual Communication* 10(2): 1–14.
- Bernstein, B. 2000. *Pedagogy, symbolic control and identity: Theory, research and critique*. Revised ed. Lanham: Rowman and Littlefield.
- Bezemer, J. and G. Kress. 2008. Writing in multimodal texts: A social semiotic account of designs for learning. *Written Communication* 25(2): 166–195.
- Buzan, T. 1991. *Use both sides of your brain: New mind-mapping techniques to help you raise all levels of your intelligence and creativity, based on the latest discoveries of the human brain*. New York: Plume.
- Candlin, N. C. and K. Hyland. (Eds.). 1999. *Writing: Texts, processes and practices*. London and New York: Longman.
- Cope, B. and M. Kalantzis. (Eds.). 2000. *Multiliteracies: Literacy learning and design of social futures*. London and New York: Routledge.
- De Groot, E. B. 2008. English annual reports in Europe. A study on the identification and reception of

- genre characteristics in multimodal annual reports originating in the Netherlands and the United Kingdom. PhD dissertation. Radboud University Nijmegen.
- Fogler, H. S. and S. E. Le Blanc. 1995. *Strategies for creative problem solving*. New Jersey: Prentice-Hall.
- Fairclough, N. 1995. *Critical discourse analysis: The critical study of language*. London: Longman.
- Gallimore, R. and R. Tharpe. 2002. *Vygotsky and education*. Cambridge: Cambridge University Press.
- Gee, J. P. 2004. *Situated language and learning*. New York and London: Routledge (Taylor & Francis Group).
- Gee, J. P. 2008. *Social linguistics and literacies: Ideology in discourses*. 3<sup>rd</sup> Edition. London and New York: Routledge (Taylor & Francis Group).
- Grant, T. and R. Borchers. 2015. *Communicating @ Work: Boosting your spoken, written and visual impact when results matter*. 3<sup>rd</sup> Edition. Pretoria: Van Schaik.
- Grant, T. 2010. From the classroom to the boardroom – higher education strategies for enhancing professional communication practice and “graduateness” for a global workplace. Keynote address published in CPLA conference proceedings: *Enquiry, autonomy & graduateness: Achieving an outstanding student learning experience*, ed. C. Corker. Sheffield, UK: Alpha Books.
- Grant, T. 2012. Scenario pedagogy: A negotiated, multimodal approach to developing professional communication practices in higher education. Unpublished PhD thesis. University of Cape Town.
- Halliday, M. 1978. *Language as social semiotic: The social interpretation of language and meaning*. Great Britain: Edward Arnold.
- Halliday, M. 1994. *An introduction to functional grammar*. London: Edward Arnold.
- Hyland, K. 1999. Disciplinary discourses: Writer stance in research articles. In *Writing: Texts, processes and practices*, ed. C. N. Candlin and K. Hyland. London and New York: Longman.
- Hyland, K. and P. Tse. 2004. Metadiscourse in academic writing. A reappraisal. *Applied Linguistics* 25(2): 156–177.
- Jewitt, C. 2006. *Technology, literacy and learning. A multimodal approach*. Oxon: Routledge.
- Jewitt, C. (Ed.). 2009. *The Routledge handbook of multimodal analysis*. Oxon, New York: Routledge.
- Jones, R. H. 2009. Technology and sites of display. In *The Routledge handbook of multimodal analysis*, ed. C. Jewitt. Oxon, New York: Routledge.
- Kress, G. and T. Van Leeuwen. 2006. [1996]. *Reading images: The grammar of visual design*. London: Routledge.
- Kress, G. 2003. *Literacy in the new media age*. London and New York: Routledge.
- Kress, G. 2010. *Multimodality. A social semiotic approach to contemporary communication*. Routledge: London.
- Lave, J. and E. Wenger. 1991. *Situated learning: Legitimate peripheral participation*. London: Cambridge University Press.
- Norris, S. 2004. *Analyzing multimodal interaction: A methodological framework*. New York and London: Routledge.
- Oliu, W. E., C. T. Brusaw and G. J. Alred. 2010. *Writing that works*. 10<sup>th</sup> Edition. Boston: Bedford/St. Martin's.
- Svantesson, I. 1994. *Mind-mapping and memory: Powerful techniques and resources to help you make better use of your brain*. Guildford: Biddles.
- Theron, F. 1994. *Better English better business*. Cape Town: International Business Skills (ISB).
- Vygotsky, L. 1978. *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.