Work-Integrated Learning Research Unit

Publications 2004-2012
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Adapted from photos of Diego Riviera’s “The Worker” by Chris Carlson, San Fransisco Art Institute and Diego River’s”Detroit Industry.”
Introduction

The paper abstracts are in alphabetical order by author and within each authors’ section the abstracts are arranged chronologically. The papers are all available on the CPUT library e-journal site or you may contact the authors directly.

The abstracts cover the academic outputs of the unit over the past 8 years. The unit had two distinct streams – an integrated language stream in which language was integrated into professional/vocational course teaching and a stream focussed more on work and learning at the institution and beyond. The unit has also published a number of collaboratively researched and written.
**WILRU authors**

*Chris Winberg*
Work and learning and language in education and workplaces.

*Penelope Engel-Hills*
Professional education in Radiography

*Cecilia Jacobs*
Integrating language and content

*James Garraway*
Work and learning

*Jenny Wright*
Integrating language and content

*Terry Volbrecht*
Work and learning

*Bridget Wyrley Birch, Geraldine Philotheou*

*And Joyce Nduna* were involved in number of projects.
Learning from Integrated Tasks in Mechanical Engineering


The dual imperatives facing South African Higher Education are access and quality, particularly with regard to programmes and graduates with the potential to impact on the South African economy. The engineering disciplines have been recognised as ‘scare skills’ in the South African context (Department of Education, 2001); and it has also been recognised that traditional ways of teaching engineering have not met with great success; in fact the throughput rates for the engineering disciplines are around 25%. Rethinking engineering education is thus an imperative if we are to enhance the education and training of engineers. The National Commission on Higher Education (NCHE) advocates a softening of boundaries between higher education institutions and society. One suggested start to this process is through the development of appropriate programmes with a strong emphasis on generic skills, which support the ability of graduates to work flexibly and innovatively with new problems and organisations (2001: 29). This paper examines a curricular intervention intended to address these challenges by creating meaningful and integrated learning experiences for young mechanical engineers-in-training.
Radiographers at the heart of technology in Africa: a curricular response to contextual change


Radiography has experienced changes and challenges from a number of sources, which have involved academics and practitioners in an interrogation of the role and purpose of health provision in South Africa generally, and the place of radiography more specifically. Rapid technological changes in the fields of imaging and radiation treatment require radiographers to be lifelong learners. Changes to the professional context are such that radiographers now play important roles in integrated patient care teams. Post-apartheid ideology, policy and legislation with regard to both higher education and health provision have fundamentally altered the landscape in which academic and clinical work is accomplished. The social transformation of higher education has seen an increasingly diverse community of student radiographers; while the social transformation of state hospitals means there are more linguistically and culturally diverse patient populations. These technological, professional and social changes have had an impact on the shape and structure of the radiography curriculum. It too must change in order to equip graduates to work effectively in different technological, professional and social contexts. This paper broadly examines the
contexts affecting radiographic practice in 21\textsuperscript{st} century South Africa, and suggests an appropriate curricular response to these changes.

Key words: radiography education, clinical practice and theoretical learning, contexts of change and development

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**Reflections on life as a student from the position of employment**


The workplace is strongly present in Technikon/University of Technology (UT) programmes, both as a learning resource and as a site of knowledge production. Part of the traditional strength of UTs is that students are simultaneously acculturated into academic and workplace knowledge systems. But while there has been this acknowledgement of the role of the workplace in UT education, very little research has been done on work-based learning, or the development of curricula, and there has been practically no evaluative research to trace the impact of career-focused programmes.
The above provides a rationale for this paper, which reports on research done in investigating the relationship between changing workplaces and teaching and learning practices within tertiary institutions. We investigate the knowledge that students carry with them from the UT to the workplace and explore the UT curriculum from the perspective of past students, in a number of case studies. The sample subjects are drawn from recently qualified students who are currently working. The research design uses a life history research methodology. This methodology privileges in-depth accounting of experience from a participant’s point of view, engages participants in retrospectively assessing the present in relation to the past, and draws on their socio-historical contexts.

We identify common strengths and weaknesses in UT curricula across three fields. The strengths we identify include the practical and technical skills developed by students, while the weakness include strategic and critical thinking, as well as the communication skills for participation in the new, ‘flattened’ workplaces. The discussion on our findings is informed by concepts of knowledge movement between the institution and the world of work.
A core curriculum for RTTs (radiation therapists/radiotherapy radiographers) designed for developing countries under the auspices of the international atomic energy agency (IAEA).


The aims of the agreed core curriculum are to produce RTTs who are technically, and clinically competent, aware of radiation safety issues and the importance of quality assurance, understand the theoretical basis for evidence based practice, are effective members of the multidisciplinary team, are prepared to participate in or initiate research into practice and can move freely across the respective continents. All aspects of radiation therapy application have been considered and addressed in the development of this core curriculum together with the identification of the roles expected of an RTT in the development of a detailed syllabus.
Professional expertise for radiation therapists in Africa


The radiation therapist (RTT) is a practitioner who must learn to take responsibility as an autonomous professional within a collaborative multi-professional team. A case study of international students on fellowship studies to a South African Higher Education Institution was used as the lens to explore the development of professional expertise in RTTs. Documents and semi-structured interviews generated textual data that was semantically analysed. The findings are presented as a discussion of the themes that emerged from the text data; (1) autonomy in a team, (2) collaboration facilitates learning, (3) the need for professional competence, (4) reflective practice and (5) participatory learning. The paper offers the interpretation of professional competence as a practitioner who has applicable knowledge, clinical and generic competence as well as appropriate behaviour and attitudes. It is proposed that a collaborative, integrated curriculum meets the need for the education of RTTs on the African continent. In such an environment optimised learning is facilitated by access to good clinical role models, the development of skills toward reflective practice and student participation in the learning environment.
Key words: professional education, radiation therapy, professional competence.

Radiation therapist research in Africa: overcoming the barriers to reap the rewards


Radiation therapy is recognized throughout the world as an essential modality in the treatment of many malignant diseases. A quality treatment process requires highly competent health care professionals and high-technology equipment. In the majority of countries in Africa there is a desperate need for equipment and skilled therapists and in many countries there is no access to radiation therapy to relieve the suffering of cancer patients. As a region Africa can therefore be considered as ‘under resourced’ in terms of radiation oncology services. In this context both service and research are challenged by a lack of equipment, poor maintenance, inadequate funding, inconsistent consumable supplies, a scarcity of competent professionals to ensure optimal
use of what is available and excessive workload. Africa therefore has many examples of the situation, where low-income countries generally have a poor research infrastructure. Radiation therapist (RTT) research in Africa has to develop where the barriers to research can in most instances be traced back to a lack of resources and any initiatives to overcome these barriers are frequently blocked by the limitations of a resource-poor environment. To locate the discussion on the research environment of RTTs in Africa, barriers to and benefits of research are integrated with brief information under the following headings: the macro environment, the RTT environment and the RTT research environment. The latter includes insights from interviews and discussions covering the following topics: research now, research priorities, research opportunities and strategies for future research.

Key words: radiation oncology, resource-poor environment, research agenda, technologist.
An Integrated Curriculum in Medical Imaging


This chapter argues that a shift in educational practice is needed to adequately prepare practitioners for practice in medical imaging. Radiology is a rapidly changing, technology-driven field, requiring new forms of multidisciplinary practice. The content-based syllabus was effective as a guide for education programs that prepared novice practitioners to adapt their practice in a slowly changing environment. The challenge of professional education in this discipline today is to develop practitioners with entry-level competence for immediate practice and with the ability for continuous self-directed learning to deal with constant, rapid development. In the current environment, an integrated curriculum is an appropriate pedagogy to equip practitioners to enter this complex, changing workplace.
Position paper on work-integrated learning (WIL) in the new HEQF


This position paper responds to the guidelines on WIL in the recently promulgated Higher Education Qualifications Framework (DoE 2007). The paper argues that the HEQF document conflates WIL and Workplace Learning and that the way in which Workplace Learning will become a “structured part of a qualification” (DoE 2007, 9) will depend on how workplace realities inform the design of the curriculum as a whole, as well as all related teaching and learning activities within it. In the absence of guidelines from the DoE or the HEQC, the paper draws largely on international research and practice in the field of WIL, noting that the field is under-researched in the South African context. The paper proceeds to elaborate on some of the definitional issues regarding WIL in an international context, characterised by growing concerns with the “employability” of graduates. Terms familiar in the South African context, such as “Cooperative Education” and “Experiential Learning” are briefly discussed in relation to other commonly used terms in the literature, such as “workplace learning”, “work-based learning” and WIL as defined by the Work-Integrated Learning Research Unit (WILRU) at the Cape Peninsula University of Technology.
(CPUT). WILRU’s definition is then elaborated in a typology of four different forms or aspects of WIL: Work-Directed Theoretical Learning (WDTL), Problem-based Learning (PBL), Project-based Learning (PjBL) and Workplace Learning (WPL).

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**Working for a degree: Work- Integrated learning in the Higher education qualifications framework.**


This paper responds to the guidelines on work integrated learning (WIL) in the recently promulgated Higher education Qualifications Framework (HEQF) (Department of Education, 2007. The paper elaborates on some of the definitional issues regarding WIL in an international context, characterised by growing concerns with the employability of Graduates. Term familiar in the South African context, such as “cooperative education” and “experiential
learning”, are briefly discussed in relation to other commonly used terms in the literature, such as “workplace learning”, “work based learning” and WIL as the Cape Peninsula University of Technology (CPUT). A typology of four different approaches to WIL is developed: work directed theoretical learning (WDTL), problem based learning (PBL), project- based learning (PJBL) and workplace learning (WPL). The key theoretical constructs underpinning the notion of WIL are discussed, these include constructs that seek to theorise the transfer and recontextualisation of knowledge as it moves in complex ways between university and workplace settings. Different ways of integrating the different forms of knowledge are then discussed and theorised. Finally, the planning and implementing of WIL is addressed. Each of the learning, assessment and workplace involvement considerations. Illustrative case studies describe instances of planning and implementing, the resources, and the HEQF level of the particular case.
Transfer of knowledge between university and work


The paper examines Science intern students’ perceptions of knowledge transfer from university to work. Compared to research on learning at work, the field of transfer between university and workplaces is less well explored. Students were briefed on transfer at their workplaces then asked to submit an account of their own experiences of knowledge transfer. The briefing sessions and the accounts were then examined for emergent trends that may shed light on the extent to which students’ perceived transfer to be occurring. In short, students may recognize some transfer of knowledge and procedures with limited learning or they may extend and develop more general learning into specific learning at work, often providing original, innovative contributions to work practice. Contributions to work were seen as ideal transfer tools or boundary objects.

Key words: Activity theory, boundary object, internship, transfer.
Theorising experiential learning


The paper focuses on the transfer of knowledge learnt by students in the classroom to their experiential learning contexts. It is argued that transfer is not a simple process of application but rather one of recontextualisation of previously learnt knowledge. In order for students to perform this recontextualisation, some form of reflection on experience and previous learning is necessary. Michael Barnett’s theorisation of the structure of the vocational curriculum, involving different types of recontextualisation, is used as a theoretical frame to examine knowledge transfer between university and work.

Key words: Experiential learning; knowledge transfer; recontextualisation
University and work: curriculum inquiry from an activity theory perspective


The field of curriculum enquiry in more applied/professional fields in South African universities has in the recent past been mostly dominated by Bernsteinian-derived approaches to different forms of knowledge. More socio-cultural systems approaches to curriculum enquiry are less well known. This chapter examines activity theory as a curriculum enquiry tool and suggests how it may be used at different levels of analysis. In short, it can be used descriptively as well as to expose and develop points of difficulty between the different elements that together contribute to curriculum development. Current research using activity theory to examine the relationship between work and university knowledge is also put forward.
Knowledge boundaries and boundary-crossing in the design of work-responsive university curricula


Knowledge at work and knowledge in the university are recognised as being, broadly, differently structured, differently acquired and used for different purposes (Eraut, 2004; Bernstein, 2000). The idea of difference creates boundaries which delineate the two knowledge domains, in general, as distinct communities of practice. The question raised here is how the boundary can successfully be crossed such that the emergent curriculum knowledge looks both ways, satisfying both work and academic requirements.

To answer this question the article analyses examples of work/academic curriculum interactions through a socio-cultural learning theory, and in particular activity theory (Engestrom, 2001), lens. Conditions for successful interactions, involving raising and brokering differences and mobilising other boundary-crossing devices, are then proposed.
Key words: University-work responsiveness; curriculum; boundary-crossing; activity theory

The role of difference in the creation of work-responsive curriculum units.


Academic curriculum and curricular units which are responsive to work necessarily involve the interaction of knowledge from two different communities. In this paper a number of cases of responsive curriculum are analysed in order to answer the following questions: Can general differences between work and academic knowledge be ascribed to the nature of the relevant knowledge fields? Were some fields of academic knowledge more amenable to interaction and hybridisation with work than others? We find that difference does indeed play a part in hybridisation. Where difference is too large or too small hybridisation may be less successful than where difference is optimal. But other contingencies also come into play which involve the actions of actors in pushing difference in a particular direction.
Key words: Activity theory; Academic disciplines; Difference; Hybridisation; Responsiveness to work

Higher education and the world of work


The concept of different social groups separated by boundaries derives from work done by Wenger (1998) and Star and Griesemer (1986). The concepts of difference and boundary are nowhere more apparent than in South African society today. Notwithstanding the 1994 democratic elections issues of race, culture and language, for example, still act as significant boundary markers in our society. The continued presence, and often further development, of these boundaries, serves to make social integration difficult. Boundary is also apparent where new students with their own histories of learning are confronted with academic knowledge fields derived from quite different histories. Such difference and resultant boundary creates a very real barrier
to student learning (Steinberg and Slonimsky, 2004). What is less apparent, however, is that boundaries also exist between the institutions of Work and the university. Such boundaries make both the insertion of Work knowledge into the academic curriculum and the transfer of academic knowledge to Work more complex than our policy makers originally imagined.

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**Cooperative task design and delivery (Integrated projects): Moving staff and students.**


This paper is concerned with curriculum renewal in departments at a South African higher education and training institution with a career orientated focus. The driving forces for curriculum change derive, firstly, from government documentation which itself draws on aspects of the need for new knowledge workers in industry described by Gibbons et al in 1994. The features of such workers would be their ability to apply transdisciplinary knowledge in flexible ways to solve problems. Secondly, there is a
need to retain students in the system and to help scaffold their learning through providing a workplace focus and fostering learning to learn skills. In an attempt to meet these needs co-operative staff groups were set up to design interdisciplinary, work-related tasks with associated explanatory and guiding criteria. In observing and talking to staff developing these tasks, difficulties were detected in working co-operatively, moving from evaluative to learner-support criteria, integration and allowing for more learner-centred control in assessment.

In praise of difference: Analysing work/academic negotiations in designing university curricula.


This paper reports on attempts to develop vocational curricula within higher education institutions which reflect professional
needs. The paper focuses on an empirical investigation of knowledge movement as academics discuss curricular issues with work representatives. The meetings were taped and transcribed then coded according to boundary crossing moves by the participants as they put forward proposals. A tentative model for a mutually satisfactory recontextualisation of work knowledge involving initial difference, boundary crossing and knowledge hybridisation based on an analysis of the coded transcripts is put forward and expanded upon.

In being recontextualised academic knowledge becomes something different from its origins. As the professions change new outside knowledge needs to be moved into the academic curriculum often at the level of face-to-face interactions between representatives from work and from the academy. At this grounded level representatives draw on a number of resources and behaviours to operationalise recontextualisation. Social constructivist theories such as actor-network, activity and situated learning theory can now be mobilised to describe and explain the grounded inter-personal/inter-group activities which lead to recontextualisation.

Key words: Responsiveness; boundary crossing; degree of difference
Creating productive interactions between work and the academy


Policy in higher education suggests that curriculum should be more responsive to economist arguments than was the case in the past. Although some guidance has been given as to how to develop more work-integrated curricula, little attention has been given to interactions in meetings between workplace and academic representatives in which issues of curriculum development are discussed. As such there appears to be a gap in current curriculum theory. The author suggests that such interactions may be fruitfully examined using concepts derived from studies in the sociology of science and organizational dynamics. Such analyses may contribute to understanding what conditions enable productive interactions, which may be the development of hybrid objects and languages which speak to both groupings.

Key words: Actor-network theory; boundary crossing activities; curriculum theory; communities of practice; discourse analysis; interactions between work and academics; sociology of science
The codification of local knowledge into learnerships


There is a need to improve the delivery of services in the water and sanitation field to many parts of South Africa. In order to do this not only money but also requisite structures and systems of training are required. This paper examines the initial development of training courses consisting of qualification statements which derive from work being currently done on the ground in rural areas. The question raised is how and to what extent this local knowledge is changed as it becomes incorporated into these statements, and whether or not it still serves the constituency from which it was derived. Theory from the field of science and technology is mobilized to examine knowledge change, and its potential effectiveness in the field is examined using concepts derived from activity theory.
Recontextualizing work into academic practices


Globalisation and the related changes in social and economic practices have impacted strongly on teaching and learning in higher education; 'Education is being set up as a critical element in economic well-being and competitiveness'. The particular economic practices examined here are those codified as the so-called new work order practices. However, what happens in the workplace is qualitatively different from what happens in higher education classrooms, and there are inherent difficulties in integrating the two in any productive way. Some of the responses to workplace integration into the academy are examined and I argue for the recontextualisation of work into the academy.

Keywords: Higher education; work integrated learning; new work order competencies; recontextualisation; globalisation
Collaboration as pedagogy: consequences and implications for partnerships between communication and disciplinary specialists


This paper explores the notion of ‘collaboration as pedagogy’ from a literacy-as-social practice approach, drawing on theorists who have applied social theories of learning to the development of literacies. These theorists speak to the need for interaction between communication and disciplinary specialists in an effort to locate the teaching of disciplinary literacies within disciplines. However, there is a gap in the literature as to how such interaction might happen and what the nature of it should be. This paper explores this gap by examining a case study where such interaction took place. The case study found that both communication and disciplinary specialists needed to re-examine their notions of pedagogy as they explored new collaborative ways of teaching disciplinary literacies. It was through the interaction of disciplinary and communication specialists that the explicit teaching of disciplinary literacies could be explored. This collaborative pedagogy required disciplinary specialists to work
within their role as a disciplinary expert, while simultaneously having a critical overview of this ‘insider’ role, from outside of it. It was in engaging with communication/academic literacy lecturers, who were ‘outsiders’ to their disciplinary communities, that disciplinary specialists found themselves at the margins of their own fields, and were able to view themselves as insiders from the outside, as it were. This perspective appeared to enable the explicit teaching of disciplinary literacies.

Transgressing disciplinary boundaries: constructing alternate academic identities through collaboration with ‘the other’


Much of the literature around the notions of discourse and identity explores how education (particularly higher education)
might develop academic discourses and identities in students. There is however a dearth of work relating to what the development of academic discourses and identities in students might mean for the lecturers who teach them. The identities of lecturers, especially those in applied science/engineering fields, are generally framed in terms of their disciplinary affiliation rather than their role as professional educators. This construction of a science/engineering-based identity in many ways militates against the incorporation of an identity as a professional educator. Using narrative methodology, life history approaches and discourse analysis to trace twenty lecturers’ perceptions of their changing roles and identities as academics, this paper argues that the incorporation of a professional educator identity would enable the explicit teaching of academic discourses. The findings show that the identity of professional educator can be developed in science/engineering lecturers through their interaction with academic developers from ‘other’ disciplines such as Education and Language/Linguistics. Bringing academic developers and science/engineering lecturers into dialogue with each other facilitated the development of an alternate identity, that of professional educator, in science/engineering lecturers. The paper concludes that academic developers, through the generic academic literacy courses offered at most tertiary institutions, occupy a space that science/engineering lecturers should be filling, that of inducting students into the discourses of science and engineering. Finally the paper recommends that sustained interaction between academic developers and science/engineering lecturers facilitates a shift in the academic identities of the science/engineering lecturers, towards incorporating an ‘otherness’ as discourse teachers.
Teaching explicitly that which is tacit - the challenge of disciplinary discourses


This chapter focuses on how lecturers of first-year students can better bring the tacit knowledge and understandings they have of the workings of discourse within their disciplines, into the realm of overt and explicit teaching, for the benefit of the first-year students they are teaching. In this chapter I use the term ‘discourse’ to mean ways of combining words, deeds, thoughts, values, bodies, objects, tools and technologies, so as to enact and recognize specific socially situated identities and activities (Gee 2001). Throughout his work Gee cites academic disciplines as particularly good examples of discourses, and refers to the need for lecturers (the experts) to induct students, especially at the first year level, into these discourses through a process of participation in the disciplinary discourse community. It is through participation in the disciplinary discourse community, over the period of their studies, that students increasingly take on the discourse and develop the identity of being a member of that community.

This view is supported by a growing body of knowledge, emanating from both New Literacy Studies (Gee 1990, 1996,
1998, 2003; Street 1984, 1993, 1997, 1999, 2003) and Rhetorical Studies (Bazerman 1989, 1991, 1994; Geisler 1994a, 1994b) literature, which suggests that while lecturers ‘know’ the discourses of their disciplines, that knowledge has a tacit dimension, making it difficult for these lecturers to teach it explicitly, and therefore difficult for students to learn. This difficulty is especially evident in the first year of study, as students at this level are complete novices to the discipline of study they have chosen to enter. The need for lecturers to make the hidden disciplinary discourses explicit to students at the first year level is therefore greater than at subsequent levels of study.

In search of discursive spaces in higher education


“There’s something interesting going on here, when you mix people from different backgrounds, different disciplines together, there’s something interesting that goes on”. These words, from one of the participants in my study, reflect what interested me as
a researcher. What “interesting things” happen when you mix academics from different disciplinary backgrounds? More specifically, what “interesting things” happen when you get such a group to think together, write together and teach together? Fullan (2001) claims that educational change of any significance comes about through a process of personal development of individual educators, within a broader social context that enables such individuals to engage with colleagues about the meaning of change. The research reported in this chapter supports Fullan’s claim and identifies the absence of such a “social context” and discursive space at higher education institutions as a problem of change. While the post-1994 policy framework governing higher education would appear to enable the formation of such discursive spaces on the one hand, there is simultaneously a disabling tension across these state policies. This tension is evident in key policy documents such as the 1996 report of the NCHE (National Commission on Higher Education – a commission appointed by the government to provide policies to fundamentally restructure the higher education sector), the 2001 National Plan for Higher Education (which provides a framework and mechanisms for implementing and realising the policy goal of a single, nationally co-ordinated higher education system), as well as a range of policy documents issued by the South African Qualifications Authority (a statutory body which came into being through the promulgation of the 1995 SAQA Act, and is responsible for overseeing the development and implementation of the National Qualifications Framework).

For example, the NCHE report (1996, p. 6) calls for “a shift from closed knowledge systems to more open knowledge systems” and SAQA promotes a shift in focus from subject disciplines to
programmes, which would appear to support the collaboration of academics across disciplinary boundaries in transdisciplinary discursive spaces. However, there is a managerialist discourse that runs through these same policies and others such as the National Plan for Higher Education, calling for efficiency and productivity. This managerialist discourse of “clients, consumers, individualism, benchmarks and accountability” would appear to support individualist practices and fragmented approaches, resulting in alienation among academics, rather than collegiality across disciplines. In responding to policy imperatives, academics find themselves at the centre of these competing policy tensions. These contradictions play themselves out in the findings presented in this chapter. The findings from this research suggest that sustained interaction among academics, about the meaning of change, is an important process in reshaping how they construct their roles and academic identities within higher education, a necessary element in shifting mindsets regarding practice. Some important factors in bringing about this shift are presented in this chapter. These factors, and the processes linking them, represent important considerations for change in higher education practices. The data suggest that higher education should actively seek out “communities of practice” of academics which transcend the narrow confines of disciplinary boundaries and in this way reshape the compartmentalised nature of higher education academic departments. Higher education institutions need to mobilise towards the creation of such institutional discursive spaces, where academics can engage both individually and collectively with the nature and meaning of change.
Mainstreaming academic literacy teaching: implications for how AD understands its work in HE


This article draws on research into the role of academic literacies within a range of disciplines and its implications for academic literacy teaching in Higher Education. The study explored ways of transforming current academic literacy teaching practices with a view to developing better synergy between the academic literacies that are taught and the disciplinary knowledge that students are accessing. The study examined how academic literacy practitioners and subject lecturers at a university of technology constructed their understandings of an integrated approach to the teaching of academic literacies. With a focus on the changing role of lecturers and academic literacy practitioners, the article briefly contextualises the study by sketching some of the background and outlining the methodology. The nature of disciplinary discourses is then theorised in relation to the findings from the study. Finally the article presents a theoretical model for the teaching of disciplinary discourses, and considers the implications of the theoretical model for academic development work generally, and for higher education broadly.
Towards a critical understanding of the teaching of discipline-specific academic literacies: Making the tacit explicit


This paper explores the process that occurred among a group of academics at a tertiary institution, as they worked collaboratively over a three-year period in an attempt to situate the teaching of academic literacies within the mainstream curricula of various disciplines of study. The study draws on interview and focus group data, which were produced, using narrative methods such as stimulated recall, free writing and visual representations. Framed by New Literacy Studies and Rhetorical Studies theory, and drawing on the data from participating academics, the paper explicates a model for the process of integrating academic literacies into disciplines. The unfolding model presents factors to be considered when designing integrated approaches to the teaching of academic literacies, and the findings suggest that higher education needs to create discursive spaces for the collaboration of language lecturers and disciplinary specialists. The paper concludes that it is through sustained interaction with language lecturers that disciplinary specialists are able to make their tacit knowledge of the literacy practices and discourse patterns of their disciplines, explicit. Such collaboration enables both language lecturers and disciplinary specialists to shift towards
a critical understanding of the teaching of discipline-specific academic literacies.

Teaching students to be literate in Engineering: whose job is it anyway?


This paper examines the role of academic literacies within the context of an Engineering Faculty at a University of Technology and examines its implications for academic literacy teaching in higher education. The research reported on in the paper investigates institutional practices that continue to separate the academic literacies that are taught at higher education level and the disciplinary knowledge that students are accessing. Such practices are challenged by the New Literacy Studies, which see literacy as social practices embedded in context. Literature emphasises the need to focus on integrated approaches that embed academic literacies in disciplines of study, rather than approaches which decontextualise academic literacies. The paper
explores such an integrated approach where language and engineering lecturers worked collaboratively to integrate academic literacy teaching into various sub-disciplines of Engineering. The findings suggest that higher education needs to create discursive spaces for the collaboration of language and engineering lecturers, as well as an expanded role for language lecturers, to facilitate the embedding of academic literacy teaching into disciplines of study.

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**On being an insider on the outside: new spaces for integrating academic literacies**


Currently most academic literacy (AL) courses in South Africa are decontextualized and generic, suggesting an autonomous view of literacy. This view is challenged by the new literacy studies, which see literacy as social practices embedded in context. Recent developments in AL research emphasize the need to focus on discipline-specific strategies that embed ALs in disciplines of
study, rather than approaches which decontextualize AL. At a tertiary institution in SA, a literacy-as-social-practice approach to ALs was implemented through an institution-wide project focusing on integrating language and content in an attempt to transgress the narrow disciplinary boundaries that characterize the tertiary curriculum. This paper explores how 20 AL practitioners and disciplinary specialists integrated AL teaching into various disciplines. The findings suggest that higher education needs to create discursive spaces for the collaboration of AL practitioners and disciplinary specialists, to facilitate the embedding of AL teaching into disciplines of study.
New courses for Trojan horses: rethinking RPL in a South African teacher education curriculum


This article reflects on some of the findings of a research project which investigated the practice of Recognition of Prior Learning (RPL) within a major national teacher upgrading project in South Africa _ the National Professional Diploma in Education (NPDE). The article analyses the ways in which a range of contextual factors have positioned RPL within the NPDE curriculum. Rather than support evaluations of RPL in the NPDE which have argued that RPL should be prior to rather than within the curriculum, the article uses and critically examines a theorized typology which characterizes RPL as ‘credit-exchange’, ‘developmental’, ‘radical’ and/or ‘Trojan horse’ to show how RPL in the NPDE has combined elements of these approaches in a distinctive way. The article suggests that the ‘Trojan horse’ model may provide the best framework for the use of RPL in linking qualifications-led professional development of practising teachers with other forms of continuing professional development. In conclusion the article reflects on how Trojan horse RPL could be included in critical engagement with the new national framework for teacher education and professional development.
Language, content and context in the education of architects


Architecture is a productive site for investigating how the teaching of content and language can be integrated. Although its practices have changed in response to changing conditions and technologies, the architectural profession has remained much the same since its origins in the guilds of the 16th century (Cuff, 1992). The traditions associated with the education and enculturation of architectural students have similarly stabilised (Dutton, 1998). A design problem is assigned to students, is carefully developed under the close tutelage of a studio master, and is then presented for critique by academic architects. This process, which moves between facilitated enculturation and ‘gate keeping’, remains the central teaching, learning and assessment strategy in the education of architects. This paper investigates how architectural
students are acculturated into the practices and languages of the profession through staged interactions with academic and professional architects in a variety of teaching and learning contexts.

Key words: academic literacies, technical communication, architectural education.

Continuities and discontinuities in the journey from Technikon to University of Technology


This paper offers a ‘genealogy’ (Foucault 1984) of technical higher education in South Africa. Key concepts in technological education and research, namely career-focused education and applied research, were investigated through a study of documents and through interviews with lecturers and researchers in universities of technology. The genealogy describes how these concepts and their associated practices developed, changed and persisted across the period 1967-2004. The genealogy identifies
three ‘chronotopes’ (Bakhtin 1981) in the development of technical higher education: in the first chronotope Colleges of Advanced Technical Education (as they were known) positioned themselves to serve the needs of industry; in the second chronotope, the technikons find themselves in a state of ‘academic drift’ away from the practices of education for the needs of industry; in the third chronotope the universities of technology engage in processes of reinvention, realignment and enhancement, as the original mission of technical higher education is reconsidered in the light of changing contexts and changing needs.

Key words: universities of technology, technical education, academic drift
Activity Theory and Genre Ecology: conceptual tools for understanding technical communication


This paper reports on a year long project in an architectural technology department that studied students’ oral language development in plenary discussions in a first year History and Appreciation of Architecture course. Data was obtained by videotaping classroom activities, and by interviewing the lecturer and students who were participants in the course. The data was analysed, using categories suggested by Activity Theory. The category of ‘rules’ was selected from the activity system for further analysis, using a Genre Ecology approach. The findings of the study show how technical communication is managed within a classroom based activity system comprising lecturer and students, and graphic and verbal texts, in a context of learning. Learning, teaching, and expert discourses of the architectural review genre interact and are negotiated by participants. Through participation in plenary discussion, students from diverse backgrounds contribute to one another’s experience of architectural design, and by valuing and responding to students’ contributions, the lecturer facilitates students’ understanding of the ‘rules’ of architectural communication, and enables students
to access an expanded repertoire of the genre of architectural review.

Key words: technical communication, architectural education, Activity Theory, Genre Ecology

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**Editorial: Higher Education and Work**


The articles included in this special edition of *Perspectives in Education* represent some of the forms and sites of potentially productive relationships between higher education and work: professional, occupational and vocational education, university/industry research networks, learnerships, and service learning. The authors’ work presented here critically examines assumptions about the desirability of integrating work and learning. Their research findings show how policies are being implemented, explore the benefits and difficulties of innovative practices involving higher education and workplace partnerships, and study the impact that partnerships have had on curriculum
development, and on teaching, learning and assessment practices.

Key words: relationships between higher education and work, partnerships, theory and practice.

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**Editorial: Engineering, technology and design education**


This special educational issue of the *Journal of Engineering, Technology and Design* celebrates excellence in education. The authors in this volume demonstrate that excellence in engineering, technology and design education is achievable through a research-based approach to meeting students’ needs and evaluating educational innovation. It is only by researching what we do that our endeavours in teaching, learning, assessment and curriculum are likely to meet with success. Developing a research base for teaching and learning is particularly important for the emergent professions of Architectural Technology and Radiography. Stephen Emmitt, in
the introductory article in this volume, argues the case for Architectural Technology lecturers to become researchers, and demonstrates how research in the profession inevitably leads to innovation in educational practice. Emmitt reports on the development of a model that supports student learning in the technical field of architectural detailing, thereby significantly contributing to the new profession, and providing a useful tool for the enhancement of student learning in the new field.

Key words: Engineering, technology and design education, higher education and work.

Undisciplining knowledge production: development-driven higher education


South African higher education institutions are increasingly under scrutiny to produce knowledge that is more relevant to South Africa’s social and economic needs, more representative of the diversity of its knowledge producers, and more inclusive of the variety of the sites where knowledge is produced. Only a small
percentage of South Africans are graduates of universities or technology institutes, and these graduates are not representative of the diversity of the South African population. As a result there is a shortage of skills to address the country’s reconstruction and developmental needs. This places a burden on higher education institutions to expand access to their programmes, and to ensure that their programmes are relevant to the developmental context. Policy makers have found in the Gibbons [Gibbons, M., et al. (1994). The New Production of Knowledge. The Dynamics of Science and Research in Contemporary Societies. London: Sage Publishers] thesis on ‘Mode 2 knowledge production’ a rationale for the transformation of higher education through the inclusion of practices which are less abstract, less discipline bound and closer to those processes which characterise the diversity and distribution of knowledge production in the wider society. Nowotny et al. [Nowtony et al. (2001). Re-thinking Science. Knowledge and the Public in an Age of Uncertainty. Cambridge: Polity Press.] have taken Gibbons’ thesis further and have described society itself as becoming increasingly ‘Mode 2’. In a Mode 2 society, differentiation is replaced with integration, and networks of knowledge producers conduct their work in transdisciplinary teams across widely distributed sites. Such ‘transgressivity’ both pushes knowledge production systems forward and distributes and diffuses knowledge more widely throughout society. In this paper, it is argued that there is a need for higher education practitioners to engage critically – and constructively – with the knowledge bases of policy directives to ensure that the new teaching and learning processes and systems adequately prepare students for the complexity and diversity of
South African society, and enable them to contribute meaningfully to its reconstruction and development.

Key words: disciplinarily, interdisciplinary, transdisciplinary

Knowledge production in an architectural practice and a university architectural department


Processes of knowledge production by professional architects and architects-in-training were studied and compared. Both professionals and students were involved in the production of knowledge about the architectural heritage of historical buildings in Cape Town. In a study of the artefacts produced, observations of the processes by means of which these came to be produced, and interviews with the participants, it was found that the professional architects and the students produced different kinds of architectural knowledge.
The professional architects drew on a wide range of knowledge bases, and were proficient in the integration of ‘vertical’ and ‘horizontal’ forms of knowledge (Bernstein, 1996). In contrast, the students’ knowledge bases were more limited, and their knowledge production methods did not promote the integration of ‘vertical’ and ‘horizontal’ knowledge forms. The article offers a typology of the different kinds of knowledge produced, and makes recommendations for the productive alignment of higher education knowledge bases and knowledge production methods, with those of the profession.

Key words: ‘vertical’ and ‘horizontal knowledge, architectural education, architectural professional practice

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**Work-based higher degrees: responding to the knowledge needs of chemical engineers**


University–workplace partnerships are strategies increasingly called for in higher education. This article reports on collaborative
knowledge production between employed professional chemical engineers (registered for higher degrees) and their university-based supervisors (researchers in the field of chemical engineering). The study draws on a language of description, developed by Basil Bernstein, for understanding knowledge discourses and structures, the movement or ‘recontextualisation’ of knowledge from one domain to another and the role of knowledge in potential and actual practice. These concepts are used to analyse the ways in which knowledge production in partnerships between academic and professional engineers was enabled or constrained.

Key words: ‘vertical’ and ‘horizontal knowledge, recontextualisation, chemical engineering.

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**Communication practices in workplaces and higher education**


Communication practices in workplace and related higher education sites in the fields of architecture, mechanical engineering, and radiography were studied and compared. A wide
variety of communication practices was found in workplaces, each with specific purposes, audiences and contexts; a more limited range of communication practices was found in higher education departments, with less clarity with regard to the intended purpose, audience and context of the communication. The study showed that in their workplaces architects, engineers, and radiographers do not normally write for other architects, engineers or radiographers, but for related professionals; architects would, for example, prepare drawings and documents for structural engineers, mechanical engineers would prepare layout diagrams and instructions for electrical engineers, and radio-therapists would prepare and update patient records for oncologists. The clear sense of purpose, audience, and context that is apparent in workplace writing is related to the inter-professional, inter-disciplinary focus of professional writing. In contrast, the communication practices in career-focused (undergraduate) higher education tend to be intra-professional, and intra-disciplinary; this causes students to experience confusion in terms of the purpose, audience and context of their writing.

Key words: technical and professional communication, architecture, mechanical engineering, and radiography
Teaching engineering/engineering teaching: interdisciplinary collaboration and the construction of academic identities


Academics in higher education institutions are members of disciplinary communities by virtue of their qualifications and research activities, and as teachers of particular disciplines (or professions) they are (or need to become) members of a community of educational practitioners. In this paper, I analyse the ways in which a small group of lecturers in a professional engineering discipline negotiated their academic identities in the process of attaining a Masters degree in Engineering Education. A series of narrative interviews was used to track shifts in the lecturers’ identity trajectories during the Masters programme. The findings indicate that academic identities, even within a single engineering discipline, are flexible, multi-layered, and susceptible to different degrees of change. Despite these differences, all participants experienced similar stages in the process of shifting from engineering to engineering educator identities.

Key words: engineering education, interdisciplinary collaboration
Engineers are from Mars and educators are from Venus: research supervision in engineering and educational collaboration


This article reports on a research project that investigated the supervisory practices in Masters level interdisciplinary research projects that were undertaken in engineering education. The projects usually entailed an interdisciplinary thesis that addressed an educational issue within a specific engineering discipline, such as problem-based learning in chemical engineering, the work-readiness of civil engineering students, or curriculum reform in mechanical engineering. In practice, such projects involved collaboration between supervisors appointed from the broad field of ‘higher education studies’ to oversee the educational aspects of the thesis and engineering discipline specific supervisors with an interest in education. The findings include data which indicate both the difficulties of working across the disciplines, and the promise of new, interdisciplinary practices in research supervision.
Key words: interdisciplinary research supervision, post-graduate engineering education.

Day jobs/night work: academic staff studying towards higher degrees


Universities of Technology (UTs) offer career-focused education in a wide variety of disciplines and fields. Traditionally, UTs recruited academic staff with relevant workplace experience, rather than academic qualifications. The result of this strategy was, while many lecturers possessed professional qualifications in their field, they did not have Masters or Doctoral degrees. Much has changed over the past years. For example, most UTs now have requirements that, in order to be appointed as a lecturer, new staff should already be in possession of a Masters degree (although in several programmes this is not a viable requirement). Existing members of staff (appointed before the Masters degree
was required) are encouraged to study towards higher degrees. The attainment of a Masters (and preferably a Doctoral) degree, followed by research outputs, are important considerations for promotion and notch increases. Trying to study while working full-time has many challenges, and busy lecturers undertaking this journey need various forms of support. They need teaching relief, research assistance and financial support for their research activities as well as access to resources and equipment and the support of experienced and knowledgeable supervisors and mentors. Academic staff members’ perceptions and reflections on the experience of studying towards Masters and Doctoral degrees were canvassed through an institution-wide survey. In this article, we discuss the findings of the survey, and recommend ways in which institutions could support academic staff who are engaged in studying towards higher degrees.

Key words: working and studying, part-time higher degrees.
Teaching technical writing in multilingual contexts: a meta-analysis


Teachers of technical and professional writing in Science, Engineering and Technology (SET) Programmes need to understand the particular needs and social contexts of students for whom English is not a first language. The focus of this paper is on technical writing, and the paper presents the findings from four broad areas surveyed in a meta-analysis of research articles on curricular, teaching, learning and assessment practices for university-level English technical communication in multilingual contexts. Communication teachers in the SET professions are faced with decisions regarding the kind of language forms, topics and purposes to address when teaching, developing materials, or designing assessment tasks for a multilingual technical communication class. It is hoped that this meta-analysis will provide communication lecturers, who work within SET fields, with information for effective and inclusive practice.

Key words: technical communication, English as an additional language, applied science, engineering and technology programmes.
Many postgraduate interdisciplinary research (IDR) candidates in the applied disciplines work across two or more traditional areas of study. Such candidates often spend considerable time on knowledge-building activities outside their home (or undergraduate) disciplines; IDR candidates venture into new fields and are exposed to the cultures and values of different disciplines. In this study, IDR candidates, from different applied disciplines, were selected as case studies. The study was delimited to a range of interdisciplinary permutations across the ‘hard’ and ‘soft’ applied disciplines (e.g., engineering management, health informatics). The focus of this article is postgraduate students’ experiences in doing an IDR study for a Master’s thesis. In the article we explore the challenges faced by candidates, with a view to minimising these, given the contribution that IDR can make to a developing society.

Key words: interdisciplinary research, applied disciplines, postgraduate supervision
Work-integrated learning: Good Practice Guide


There is considerable interest, both in South Africa and internationally, in curricular and pedagogical reform that will both support students from diverse backgrounds and prepare them for the challenges of the global economy and responsible citizenship. Governments around the world are concerned that universities make the highest possible contribution to students’ ‘graduateness’ in various forms. Programmes that promote graduates’ successful integration into the world of work and that enable graduates to make meaningful contributions in contexts of development, require innovative curricular, teaching, learning and assessment practices. South African universities’ commitment to positive graduate outcomes, global citizenship and community engagement add extra dimensions to the importance of WIL in curriculum design and development, as a process of reciprocal involvement that can benefit students, professions, workplaces and communities. This guide to work-integrated learning (WIL) was produced to assist academic staff to address these issues in their different programmes and disciplines.

The guide was produced in the context of the promulgation of the Higher Education Qualifications Framework (HEQF) and processes
of national curriculum review. The HEQF proposes six higher education levels (Levels 5 – 10), with different qualifications requiring appropriate credits at different levels. Thus the guide also intends to assist academic staff, particularly those where existing programmes are undergoing revision, in developing appropriate forms of WIL for different levels of the HEQF. It is thus the purpose of this ITL resource to provide university teachers with a guide to planning, implementing and managing good WIL practice. To this end the guide is divided into seven sections: 1) Introduction to WIL, 2) A conceptual framework for WIL, 3) Curriculum design and development for WIL, 4) Teaching and Learning for WIL, 5) Assessment for/of WIL, 6) Partnerships for WIL, and 7) The management of WIL. These sections include case studies of innovative practice in WIL. There is a glossary of terms that includes hyperlinks to a number of resources which are useful for the implementation of WIL, as well as a WIL bibliography.

Key words: Work-integrated learning, professional education, higher education and work.
Communication practices in workplaces and higher education


Communication practices in the workplace and related higher education sites in the fields of architecture, mechanical engineering and radiography were studied and compared. A wide variety of communication practices was found in workplaces, each with specific purposes, audiences and contexts; a more limited range of communication practices was found in higher education departments, with less clarity with regard to the intended purpose, audience and context of the communication. The study showed that in their workplaces, architects, engineers and radiographers do not normally write for other architects, engineers or radiographers, but for related professionals; architects would, for example, prepare drawings and documents for structural engineers, mechanical engineers would prepare layout diagrams and instructions for electrical engineers, and radiotherapists would prepare and update patient records for oncologists. The clear sense of purpose, audience and context that is apparent in workplace writing is related to the inter-professional, interdisciplinary focus of professional writing. In contrast, the communication practices in career-focused (undergraduate) higher education tend to be intra-professional, and intra-disciplinary; this causes students to experience
confusion in terms of the purpose, audience and context of their writing.

Key words: technical and professional communication, architecture, mechanical engineering and radiography

Collaborating for Content and Language integrated learning: the situated character of faculty collaboration and student learning


Globalisation, internationalization, and widening participation are trends in higher education that require efforts to foster a culture of cooperation, reflexivity and learning among lecturers as well as among students. These central forces in education call for curriculum change to respond not only to workforce and student
mobility but also to indirect effects like changing requirements for teamwork in the professional world and by extension also in education. These requirements might involve an emphasis on transdisciplinary teams, an increasing amount of information distribution, and greater cultural and disciplinary variety in student or co-worker profiles. One curricular approach exploring and problematizing this 'culture of cooperation' is Integrating Content and Language (ICL), where a disciplinary focus (content) is combined with a concurrent emphasis on the corresponding communication dimensions (language). This special issue of ATD investigates understandings of Integrating Content and Language (ICL) through the exchange of knowledge and experience regarding collaboration between content (discipline-based) and language (communication/academic literacies) lecturers in higher education contexts. To date, it seems that this type of collaboration can be challenging to students and faculty alike for infrastructural, institutional, epistemological, disciplinary, rhetorical, and other reasons. The papers in this issue help us address some of these challenges and improve our understanding of ICL-collaboration.

Key words: integrating language and content, disciplinarity, interdisciplinarity, transdisciplinarity
In this paper we argue that a common-sense understanding of the purpose of professionally-oriented higher education can have unintended consequences. We draw on accounts of the distinctiveness of disciplinary and situated knowledge (e.g., Bernstein, 1999; Barnett, 2006; Gamble, 2006; Muller, 2009) to describe knowledge resources for professional programmes, to analyse the relationship between knowledge types and to show how they are represented in curricula. We draw on empirical studies in the education of health professionals, engineers, designers, information technologists, and office managers in universities of technology. Much work has been done on the nature of disciplinary knowledge and its selection and recontextualisation in curricula. We have, however, found that it is insufficient to provide a principled account of situated knowledge equipped only with a theory of knowledge difference. Without a theoretical conception of practice-based knowledge (e.g., Chaiklin & Lave, 1993/2003; Engeström, 1999) there is a danger that situated knowledge will be undervalued in relation to disciplinary knowledge. We thus found it necessary to draw on a
variety of resources to theorise key issues in both disciplinary and situated knowledge. The first section of the paper problematises common-sense understandings of professional education and provides a historical overview of the complex and difficult relationship between higher education and the world of work. The second section addresses the representation of disciplinary and situated knowledge forms in curricula, highlights the importance of epistemological access to professional knowledge, and provides a model of professional knowledge for curricular selection. The third section deals with the logic of professionally-oriented curricula and ‘recontextualisation’ (Bernstein, 1999; Van Oers, 1998). The conclusion returns to a consideration of the purpose of professionally-oriented higher education, in the light of the arguments developed. Our aim in this paper is to contribute towards an understanding of the relationship between disciplinary and situated knowledge in professionally-oriented education, and thereby to offer a theoretically consistent position on the purpose of professionally-oriented higher education.

Key words: purpose of higher education, professional education, academic and situated knowledge
‘We’re engaged’: mechanical engineering in the community


Mechanical engineering programmes, like other professional fields of study, have long been expected to be relevant to the needs of their related industries. In a context like South Africa, university programmes are also expected to contribute to the country’s development needs. In an effort to address these new requirements, the coordinator of a mechanical engineering programme invited community-based clients and organisations to set briefs for final year (4th year) engineering students’ projects. The community-based clients consulted with students during the process of project development, and were part of an assessment panel that awarded marks for students’ work. The data for this study was obtained from a series of pre-programme, mid-programme and post-programme interviews with lecturers, tutors, clients, and students. The chapter offers an analysis of how new, and potentially disruptive practices, were ‘tamed’ by the dominant disciplinary practices of the mechanical engineering department.

Key words: community engagement, mechanical engineering, vertical and horizontal knowledge.
Reflections on process writing


This paper reviews collaboration between a Communication lecturer and two Science lecturers to improve underprepared students' scientific writing, using a process writing approach. Findings suggest that undertaking process writing is worthwhile as part of a deep learning approach in higher education; however, such an endeavour requires careful planning and constant coordination within the constraints of highly structured, time-pressured academic programmes. The author concludes that increasing the quality and quantity of students' scientific writing requires commitment and active collaboration by those involved at all levels of study in the discipline. Only with sustained, explicit and appropriate guidance by all lecturers concerned are science students likely to develop and value the appropriate scientific discourse that will mark them as fully-fledged members of the scientific community.

Keywords: process writing; academic writing; disciplinary discourse; situated learning; content and language integration
Lecturers’ perceptions of integration: a study of textual typologies


A two-year pilot project involving the collaboration of ten language lecturers with content partners was guided by the participants’ broad definition of integration as ‘the provision of linguistic access to content knowledge’. The project intended to assist non-English speaking learners to acquire not only a better grasp of the medium of instruction, but to facilitate their understanding of the concepts of their discipline embedded in that medium.

The development of ten published books of integrated materials for various disciplines was one of the outcomes of the project. Drawing on studies of integration typologies, this research identifies three typologies of integrated text and explores the authors’ apparent understandings of integration as reflected in these materials. The nature of ‘language’ is explored, and factors for integrating language and content are considered.
The paper concludes by summarising factors that appear to facilitate content and language integration, and by considering possible new roles for content and language lecturers which may improve future integration efforts.

Key words: content and language integration; co-authoring; textual typologies

Causal mechanisms generating writing competency discourses in a radiography curriculum in higher education: A critical realist perspective


When education is jointly managed by a workplace and academia, causal mechanisms in the culture, structure and agency of these two contexts may unintentionally generate discourse that
conveys conflicting messages for learners regarding some of the priorities of the profession. Using the concepts of culture, structure and agency as they are used in critical realism to analyse the discourse generated in two teaching and learning contexts (a radiography division in a university and a radiography workplace in a large state tertiary academic hospital), this paper attempts (i) to identify possible causal mechanisms that generated discourse concerning the role and value of writing competency for radiographers, such that this discourse possibly influenced learners not to be motivated to improve their writing competency to their lecturers’ satisfaction; and (ii) to suggest what practices and influences might successfully generate an alternative emancipatory discourse. Drawing on Margaret Archer’s (1995) morphogenetic approach, the paper argues that the radiography lecturers have the primary agency to address this unsatisfactory situation, as it is through their interaction – both as a team and with other relevant stakeholders – that an alternative emancipatory discourse may be generated.

Key words: emergence; morphogenetic approach; ontology; workplace integrated learning.
Critical realism as a ‘methodology’ for exploring discourse in technical fields.


Applied linguistic research has tended to draw on the work of various postmodern theorists, such as Gee (1999) and others of the New Literacy Studies movement. Critical realism is a relatively new approach for social scientists working in the arena of academic development, at least in South Africa, and thus the perspectives that it can offer are either unknown or not well understood. This paper offers a theoretical perspective on discourse-based research practice, with concepts drawn from my experience of using critical realism as a philosophical framework and an analytical lens during a case study. Critical realism not only guided my research methodology but illuminated the perspective of other social theories. The focus of the research was the role of discourse in the constitution of radiographic knowledge in a higher education teaching and learning context embedded in a large state training hospital.

Key words: critical realism; ontology; methodology; workplace integrated learning
Facilitating co-authoring: reflections of content and language lecturers.


During a content and language project at a University of Technology (UoT) in Cape Town, South Africa, pairs of language and content lecturers, whose broad definition of integration was ‘the provision of linguistic access to content knowledge’, co-authored ten integrated textbooks. Their intention was to assist first year learners with their academic work. I previously reported on a study during which I identified – and pondered reasons for – three types of content and language integration that were evident in these textbooks (Wright 2004). Now, in this article, I draw on findings from subsequent interviews with two pairs of the co-authors who focus on factors that impacted on their attempts to integrate content and language in the textbooks. The article concludes that, in preparation for collaborative partnerships between content and language specialists, attention should be paid to factors that have the potential to affect collaborative efforts to integrate content and language, namely access to the disciplinary discourse, roles and responsibilities, and the manner in which conflict is managed.
Key words: content and language integration, co-authoring; interdisciplinary collaboration; disciplinary discourse

‘Talking technical’: Learning how to communicate as a health care professional.


The focus of this paper is on the oral communication practices of radiotherapists as clinical practitioners and as university lecturers. A case study approach was chosen as the most appropriate research strategy for capturing authentic communication practices in clinical and educational settings. The communication practices of the participants were observed and videotaped in academic classrooms and clinical workplaces. The research participants were asked to watch the video-recording and to reflect on their communication practices. The data obtained from the research processes, which included observation schedules, video footage, and transcriptions of interviews, were thematically
analysed. A model of radiotherapy communication evolved, consisting of three main oral professional communication genres, namely intra-, inter- and extra-professional communication. Analysis showed that the different genres contained both formal and informal registers, and that technical registers dominated in intra- and inter-professional oral communication. It was concluded that health science professionals use a continuum of communication practices, which includes formal and informal registers, as well as technical and non-technical lexae. Mastery of oral communication practices plays an important role in radiotherapists’ professional identity and expertise, and enables novices to discover a ‘professional voice’.

The multilingual radiography classroom and the world of clinical practice.


Enabling students to access the discourse of their chosen discipline is to open the door to the content knowledge of that
discipline. The medium of instruction (MOI) at Cape Peninsula University of Technology (CPUT) is officially English. Consequently, the student primarily experiences English in the classroom. However, in experiential practice in the workplace, the student experiences a multilingual work environment. In the health care environment of the Western Cape, the student will experience interchanging use of the regional languages, English, Xhosa or Afrikaans, when communicating with the patients. Students not fluent in the languages used may misunderstand some of the transactions occurring between the supervising member of staff and the patient. Appropriate multilingual translations need to occur between the supervising member of staff, the patients and students. Students experiencing those transactions with the patient may also require more informal terminology to ensure common understanding among all role-players. This article reports on the language and cultural diversity within the student body and the language requirements of the clinical workplace. In the light of these requirements, the article repositions the tertiary healthcare educator's required expertise in terms of language and disciplinary content.
Language and content: Components of expertise in Higher Education practice.


Lecturers of content-based disciplines have long faced the challenges of helping students acquire the discourse of their chosen discipline/s. Helping students to understand the discourse of a particular discipline is one way of enabling students’ access to the content knowledge of the discipline. This process can be complicated by various factors: for example, the medium of instruction at Peninsula Technikon is English. However, approximately 80% of the learners are English second or third language speakers. Furthermore, many learners at the Technikon are underprepared for higher education because of the legacy of an unequal school system. Thus lecturers have the challenge of a further dimension in the language of learning of the students.

This institution’s policy has been to place language lecturers within the various faculties for the purpose of assisting content lecturers with language development within their courses. Thus the institution has “mainstreamed” language development in that
the content lecturers are encouraged to take responsibility for integrating the language of learning within their content-based discipline with the assistance of the faculty language lecturer. They are also encouraged to assess student needs in this respect. Newly appointed lecturers at Peninsula Technikon are encouraged to attend weekly training sessions in order to induct them into the teaching, learning and assessment practices of the institution. Certain of these training sessions are concerned with language development, teaching theory and practice.

This paper explores the experiences and perceptions of a newly appointed group of content lecturers at Peninsula Technikon, on being introduced to the concepts of language and content integration, and their subsequent application of the ideas and methodologies outlined. It also seeks to explore the groups’ philosophies and attitudes towards the integration of content and language within their own teaching practice. This paper develops a model to illustrate the development of professional expertise of disciplinary lecturers using Geisler’s definition of professional expertise which constitutes the two-fold domain content and rhetorical process. The paper discusses the “expert space” and the 4-fold nature of expertise in terms of the domain content of disciplinary knowledge and the rhetorical process of disciplinary discourse; and likewise that of pedagogical domain content and the rhetorical process of pedagogic discourse.