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DENMARK

## Practice Theory and Methodology

*(De)centring Leaders in Work and Learning?*

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*Published in:*

10th International Conference on Researching Work & Learning

*Publication date:*  
2017

*Document Version*  
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

*Citation for published version (APA):*

Buch, A., & Bach, S. B. (2017). Practice Theory and Methodology: (De)centring Leaders in Work and Learning? In *10th International Conference on Researching Work & Learning: Transitions, Transformations and Transgressions in Work and Learning & Work and Learning Research* (1 ed., Vol. 1). [ID008]

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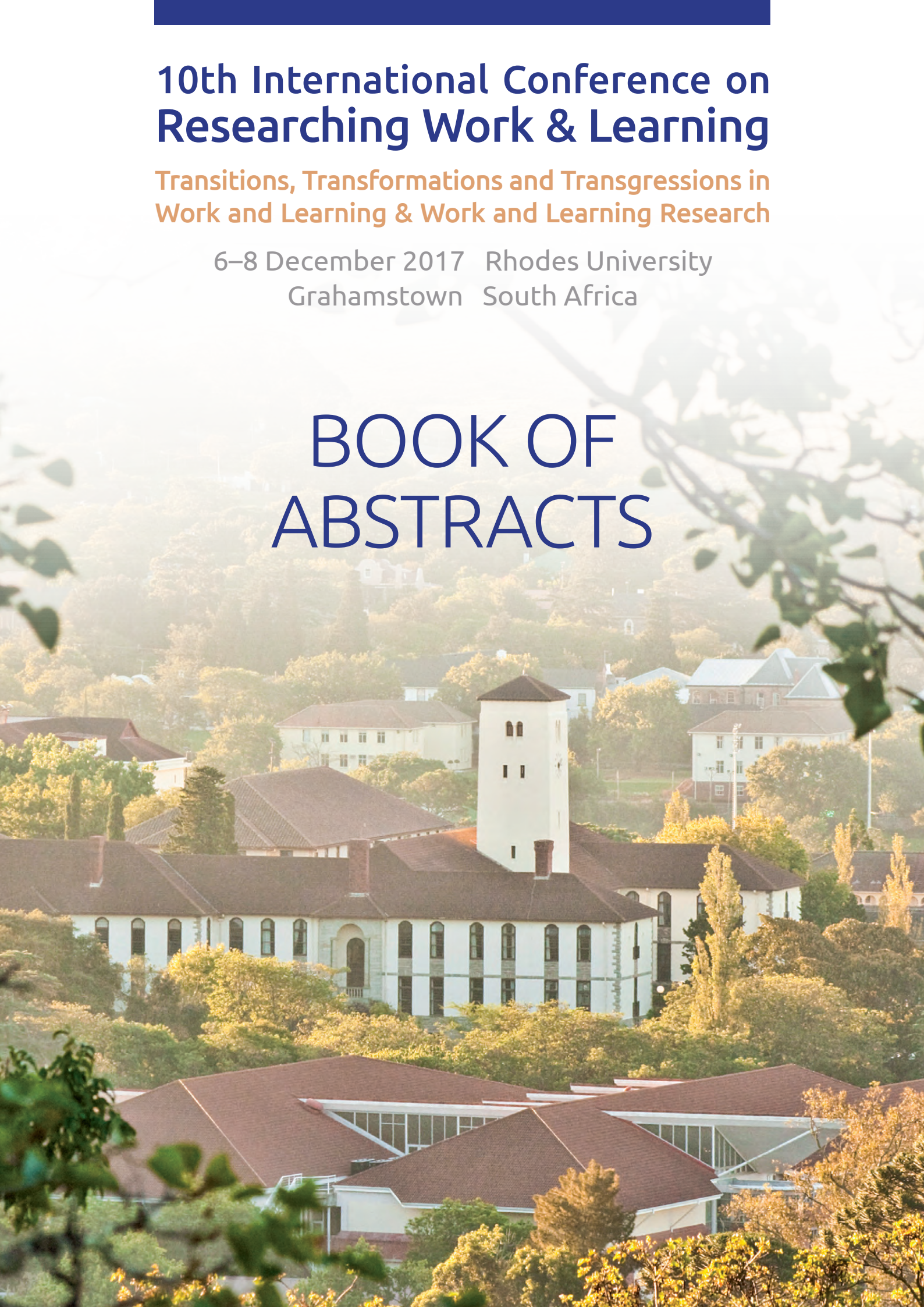
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# 10th International Conference on Researching Work & Learning

Transitions, Transformations and Transgressions in  
Work and Learning & Work and Learning Research

6–8 December 2017 Rhodes University  
Grahamstown South Africa

## BOOK OF ABSTRACTS





centre for researching  
education and labour

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This publication was funded by BANK SETA



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## **BOOK OF ABSTRACTS**





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# Welcome

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The Local Organising Committee welcomes you to RWL10.

The Environmental Learning Research Centre (ELRC) at Rhodes University has the privilege of hosting the 2017 Researching Work and Learning Conference. The theme for RWL10 is

*Transitions, Transformations and Transgressions in Work and Learning & Work and Learning Research*

The Researching Work and Learning (RWL) conference is the leading international research conference series in the field of work and learning. Established in 1999 by researchers at Leeds University, it is convened every two years. It is a critical platform for researchers and professionals to share research in work and learning, engage in dialogue with colleagues and experts from around the world, deepen their knowledge and advance the field. The conference series is organised through the leadership of the RWL International Advisory Committee, in association with the *Journal of Workplace Learning*.

While the organisers have considered a variety of contributions, RWL10 seeks to encourage deliberative engagement around these questions in particular:

- What transitions, transformations or transgressions are influencing work and learning, as societies confront socio-ecological risks like climate change, economic stagnation, social insecurity and inequalities?
- What are the implications of these transitions, transformations and transgressions for the nature of work, worker identity and agency, careers and career guidance, and work-based learning, among other areas of interest?
- Does a focus on broader transitions, transformations and transgressions challenge traditional boundaries and framings of work and learning, and the relationship between society, economy, education and work? What is transformative (or not) in RWL research?

In this book you will find all the abstracts of papers to be presented. They are arranged alphabetically according to the first authors' surnames. They can also be identified by their individual ID numbers (see top right or left of each page). You can use this ID to locate the full paper (if 'Paper available' is printed below the ID) on the USB flash drive which you should collect during registration. Papers that have been submitted already can be found here, as submitted by the authors. Some of them have been reviewed and edited, others have not. Additional papers will be collected and will be made available on the conference website ([www.rwl10.co.za](http://www.rwl10.co.za)) as soon as possible.

We wish you an enjoyable stay in Grahamstown and a stimulating conference! May it inspire us all as we go forward in our work around the world in *Work and Learning Research*.

# Plenary Keynote Speakers

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## **Annalisa Sannino**

works at the Centre for Research on Activity, Development and Learning (CRADLE) in the Faculty of Education at University of Helsinki where she is currently completing a five-year Finnish Academy research fellowship. She is visiting professor at Rhodes University, South Africa and at University West, Sweden. Her research is primarily focused on developing an activity-centred educational theory of transformative agency. Her work demonstrates how transformative agency can be discursively identified, supported and enhanced within communities, educational and work activities by means of formative interventions.

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## **Researching Work and Learning for Enacted Utopias: The Struggle to Overcome Homelessness**

There are numerous examples of research on work and learning engaged in locally-initiated transformative efforts for social justice. The field, however, still lacks coherent and robust frameworks to understand the dynamics of learning and agency involved in these efforts and to concretely support them. This keynote presents a conceptual framework to push forward an activity-theoretical agenda toward this direction, focused on the central idea of learning for enacted utopias. The paper explores, in particular, the participatory processes of expansive learning and transformative agency that led to and are still stemming from the Finnish national homelessness strategy.

In affluent cities around the world homelessness is spreading rampantly. Every country in Europe has a crisis with homelessness, except, in recent years, Finland. This is the only nation in Europe that has been able to significantly reduce homelessness. Long-term homelessness in Finland has reduced by 36% since 2008 with 82% of former homeless people maintaining their new homes. The aim of the Finnish homeless strategy is not a modest one: the strategy aims at ending homelessness, at eradicating it – an aim that can be easily perceived as unrealistic, even utopian. A recent study states that “by international standards, Finland is actually close to eradicating homelessness” (Pleace & Knutagard, 2016: 437).

My conceptual framework positions itself within the perspective of a fourth generation activity theory, suggesting a unit of analysis able to grasp long-term remedies to pressing societal challenges, shared experimentation with alternatives to capitalism, and heterogeneous work coalitions operating across local, regional, national and global levels. The conceptual framework builds on the rationale of contradictions to grasp tension-driven processes and relations through which learning and agency emerge and develop.

Undialectical views of learning and agency nourish the already widespread belief, especially in economically developed countries, that alternatives to capitalism entail starting from scratch. In fact alternatives to capitalism already exist in capitalism. Without mobilising dialectical thinking, however, these alternatives can hardly be detected as “alternatives”. Due to the pervasive lack of dialectical culture, research on work and learning has not yet recognised the relevance of these alternatives for the development of the field, even though all these alternatives involve strong, more or less explicitly defined, informal or formal educational components.

The learning and agency displayed within the Finnish strategy are strongly facilitated with material affordances which have kept the enactment of the strategy in movement for a period of ten years. Understanding how this learning and agency emerged and are sustained is a crucial challenge to meet the global demands of equity in contemporary societies. In contrast to critical studies on the phenomenon of homelessness, which document wrongdoing and scenarios of despair, the approach proposed here prioritises the documentation of how effective utopian solutions may come about by collectively working through multiple interdependent cycles of expansive learning and transformative agency by double stimulation. This approach is an alternative to stabilised views of *impossibility* that feed stereotypes and prejudices, such as those contributing to the stigma of poverty which frequently hampers initiatives for the homeless.



### Guy Standing

is a Professorial Research Associate, SOAS University of London; Fellow of the Academy of Social Sciences; and Co-founder and Honorary Co-President of BIEN, the Basic Income Earth Network. He has been involved in labour research in over 25 countries and has an extensive publications record. His research work has focused on insecurities faced by workers; labour regulation and social protection; social and economic security; labour economics; labour, work and occupation; economic rights and globalisation and social protection policy. His comprehensive analysis of the global transformation of work and labour will provide useful insights into the conference theme.

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## The Growing Precariat under Rentier Capitalism

We live in paradoxical times, when the free market rhetoric is triumphant, yet when more of the income and power are going to those who use or benefit from non-market devices.

Contrary to Keynes' prediction of "the euthanasia of the rentier" during the 20th century, rentier capitalism has flourished in the neo-liberal phase of the Global Transformation. In the name of promoting liberalised markets, governments and international agencies have constructed a system that has resulted in a rising share of income going in forms of rent, linked to the possession of assets and their contrived scarcity, rather than the production of goods and services. The resultant inequality is not due to improved brilliance by the winners but to changes in the rules. It is neither morally nor economically defensible.

Three trends highlight an impending crisis. First, a global intellectual property regime has been constructed, with patents now worth over \$16 trillion and rising remorselessly. In a beggar-my-neighbour competition in fiscal policy, Governments are boosting the rewards going to holders of intellectual property. Second, they are providing more regressive subsidies to attract or retain foreign investment. Third, globally the share of income going to labour is shrinking.

Drawing on a trilogy of recent books, this presentation will describe how rentier capitalism is being strengthened, how more income is going to the plutocracy and plutocratic corporations, and how the precariat is being disadvantaged in favour of rentiers.<sup>1</sup>

The spotlight will be on the precariat, the definition and the reasons for its growth. It is the only 'class' that has a direct interest in opposing rentier capitalism. So far, its revolt has been populist and mostly fanned by the political right. The final part will sketch policies for reducing inequality and economic insecurity, drawing on the second book, *A Precariat Charter*.

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<sup>1</sup> G.Standing, *Corruption of Capitalism: Why rentiers thrive and work does not pay* (London: Biteback, 2016); *The Precariat: The New Dangerous Class* (London, Bloomsbury, 2011); *A Precariat Charter: From Denizens to Citizens* (London, Bloomsbury, 2014). *The Precariat* has been translated into 20 languages, including Korean. The latest book takes forward a theme in the trilogy: *Basic Income.....And how we can make it happen* (London, Pelican, 2017).



### Johnny Sung

is the head of the Centre for Skills, Performance and Productivity at the Institute for Adult Learning in Singapore. He is an international expert in workforce development, focusing specifically on training effectiveness and the link between skills policy and business performance. He is currently leading skills research in Singapore focused on skills utilisation and job quality; the sectoral approach to skills and performance in key industry sectors; and adult competencies and job performance. He is also an Honorary Professor at the University of Cardiff (UK) and Visiting Professor at the University College London (UK).

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## Skills Policy, Business Model and Job Quality for Inclusive Society

This presentation is concerned with linking skills policy to social progress. It challenges the established view that the supply-driven skills policy is 'good enough'. Instead, skills policy needs to understand what goes on within the workplace and in particular what influences job quality, skill utilisation and discretionary effort. These factors are important in organisational performance and workers' employment outcomes. This understanding can lead to policy innovation. Policy examples as well as empirical data form part of the presentation.



### Edward Webster

is a Research Professor in the Society, Work and Development Institute (SWOP) at the University of the Witwatersrand. He is the author of seven books and over one hundred academic articles. He pioneered the academic study of labour in South Africa and has contributed to the development of many key industrial relations actors in South Africa. His most recent co-authored book *Grounding Globalisation: Labour in the Age of Insecurity* was awarded the prestigious American Sociological Association award for the best scholarly monograph published on labour.

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## The Future of Work: Its Implications for the World of Learning

The English historian EH Carr used to say that what you see depends on which side of the mountain you stand. I stand on the southern tip of Africa, in Johannesburg, a city built on gold. But now that the owners feel these gold mines are no longer profitable, they have abandoned them, leaving behind unprotected holes in the open fields. Today desperate men and women go deep into these abandoned tunnels in search of gold. They risk their lives in these dangerous and dark places to search for a livelihood.

I see a changing world of work which shares certain similarities with the "advanced" industrial world but I also see important differences. I would argue that the history and legacy of colonialism, as well as the policies of liberalisation, are impacting on Africa in ways that are quite different from workers' experiences in the North. It is not only that there has never been a 'golden age' of decent work in the colonial workplace. When one goes beyond the workplace into society – the household, the squatter camps, the rural areas – these differences become clear. In Africa the crisis is not simply over jobs; it is a crisis over the very reproduction of society itself.

The future of work looks bleak: either you are drawn into the new world of hyper-competition, working long hours in increasingly demanding conditions, or you join the growing numbers of unemployed who struggle to survive in the urban and rural slums of the world. But an alternative is emerging: a combination of policy innovations from above and new forms of organising amongst precarious workers could challenge the idea that bad jobs are inevitable. This will be the focus of my paper: these innovations and their implications for learning.



# Pre-conference Workshops

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## **Workshop 1**

### ***Tracer Studies: Methodologies and Reflections***

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Convenors: **Dr Angelique Wildschut**, **Dr Michael Rogan** and **Dr Hersheela Narsee**

This 3-hour workshop will explore tracer studies as a research methodology and the associated design and conceptual challenges, and reflect on their limitations but also the insights and analyses these studies allow. Dr Narsee will share the Department of Higher Education and Training's view and experience in the move towards institutionalising tracer studies across South Africa's post-school education and training system.

## **Workshop 2**

### ***Activity-Theoretical Analyses of Change Laboratory Interventions***

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Convenors: **Prof Yrjö Engeström** and **Associate Prof Annalisa Sannino**

This 3-hour workshop aims at acquiring knowledge and competences for analysing data from Change Laboratory interventions with the help of conceptual tools from cultural-historical activity theory and the theory of expansive learning. The Change Laboratory is a formative intervention method based on collaboration between researchers and practitioners in communities, workplaces and educational settings.

## **Workshop 3**

### ***Vocational Pedagogy***

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Convenors: **Prof Volker Wedekind** and **Prof Joy Papier**

This 3-hour workshop aims to explore the concept of vocational pedagogy, whether it is distinct from general pedagogy, and the implications for vocational teaching and the preparation of teachers. It explores the tension of vocational teachers who have to face both the disciplinary knowledge base on which skilled work relies and the world of work, which requires them to be embedded in the work processes and identity of the workers, often with highly context-specific or situated knowledge. This tension sits at the heart of the work of a vocational teacher, who needs to be able to induct students into specific work knowledge and practices, and give them epistemic access to the disciplinary knowledge that underpins the work.

# Site Visits

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## Site Visit 1

### **Bathurst Art Collective** (full day tour)

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A comfortable one-hour bus drive through the rural Eastern Cape takes us to the village of Bathurst, where artists, academics and amaXhosa families seek a good quality of life amid the ever-present threat of poverty. From this tranquil haven, artists create products for national high-end chain stores and boutiques, in the process also creating markets for locally produced fabrics and opportunities for others to make a living through arts and crafts. Meet the women who seized the opportunity to make a novel kind of living where unemployment is rife. Enjoy the scenery, the creativity and the local produce while contemplating how work and learning can be enhanced through global connections and well-used technology in countryside pockets.

## Site Visit 2

### **Eastern Cape Midlands College, Volkswagen plant and Addo National Park** (full day tour)

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Our bus will take us 135 km south of Grahamstown to the industrial area of Uitenhage, to visit the Volkswagen automobile production plant and the Eastern Cape Midlands College, which serves among other roles as a training academy for the Eastern Cape province's motor manufacturing industry. The college is challenged to provide for the needs of an advanced industrial economy, on the one hand, and a widespread rural area with high rates of unemployment and poverty on the other, along with the low educational achievement in many of the region's schools. At the Volkswagen manufacturing plant, we will see skills in action. On the way back, we may travel through Addo National Park, home to the "big seven", and particularly well-known for close elephant sightings.

# BOOK OF ABSTRACTS

# Tracking and Tracing of Artisans

Akoobhai, Binaben (Swiss South African Cooperation Initiative)

Graduation Destination Surveys (GDS) are essential in determining the uptake of educational programmes offered by the labour market, thus providing an evidence-based means of planning and policy development. Limited data is available in South Africa on what becomes of graduates after they complete their post-school studies, as very few graduation destination surveys have been conducted to date. Moreover, very little data exists on what happens to individuals while they are in training.

This paper looks at the results of two research studies conducted by the Swiss South African Cooperation Initiative (SSACI), in conjunction with National Artisan Development Support Centre (NADSC), of tracking individuals doing occupational training while they are in the system as well as looking at the labour market trajectory of newly qualified artisans.

The first study focuses on tracking individuals through their training and development programmes as well as tracing their prior education, how they get onto the programme, who pays for their training, type of apprenticeship, relation of work to training, types of work placement, problems encountered, etc.

The second study focuses on tracking individuals that had learned various trades into the labour market determining their employment status, how they went about finding a job, type of contract, and type of employer, etc.

The data used for this study comes from the NADSC, an initiative set up by the National Artisan Moderation Body (NAMB), to establish a central system for gathering, collating and storing up-to-date data on artisans and apprentices across the country. To date, NADSC has devised a central, web-based e-information system for all available data. However, NADSC has experienced significant challenges, one of which is lack of capacity to conduct further research into the employment trajectories of newly-certified artisans and the critical factors that determine those trajectories. SSACI has been supporting NADSC in its research activities.

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## Keywords:

artisanal trades, apprenticeship, labour market trajectory, contract type, employer type

# Occupations, Work and Work-oriented Education in Different Countries

ID002

**Allais**, Stephanie; Carlo **Fanelli**; Lazaro **Herrera**; Lynn **Hewlett**; Carmel **Marock**; Hanlie **Robertson**; Yael **Shalem**; Glynnis **Vergotine** (Wits University, Centre for Researching Education and Labour)

This **double symposium** will present preliminary findings and an analysis of the structure of labour markets and the education and training systems in six countries: Ghana, Ethiopia, South Africa, Canada, Sweden and Switzerland. The main distinction between these countries (other than wealth and level of industrialisation) is the size of the informal labour market or the size of the unemployed workforce and their relations to the private sector and to state services. This is part of a study examining the notion of occupations as a way of organising work, organising technical and vocational education and training, and supporting pathways from education to work. The study draws on the field of institutional political economy which provides insights into the ways collective wage bargaining, corporate governance and financing, labour market and state regulation, and industrial relations affect education and training. 'Occupational identity formation' is a central concept in this study, providing a framework for the claim that acquisition of bodies of knowledge and skill plus meaningful opportunities to practise know-how (practical knowledge), strengthen the ability of an occupation to regulate and protect 'work' and to form organised and regulated occupations or professions. Ultimately, the aim of the project is to **identify the social mechanisms that strengthen and/or weaken the relation between education and the labour market.**

The current phase of the project focuses on the development of an overview of the occupational structure and the ways in which occupations are organised and regulated across the countries. We aim to develop a picture at the broadest possible level of the labour market – what it looks like in terms of levels of employment and unemployment, main trends in terms of sectors and levels of employment, what kinds of work are regulated and how, and what types of education and training are offered in each of the above countries. This will include the extent of organised occupations (including professions). In other words, how much of the labour market consists of organised occupations, and what are the mechanisms for regulating occupations (including legal frameworks, regulation of educational levels for entry into occupations, and collective bargaining). We are looking at a **broad macro level at the institutions which regulate occupations, the number of professional/trade bodies with legal responsibility for occupations and what they have power over, the role of the state, the number of occupations requiring licenses to practise, the points of regulation, and the nature and extent of collective bargaining across different sectors and levels of the labour market.** This includes looking at whether and how qualifications relate to occupations, and the levels of security in different occupational categories, linked to conditions of service.

The symposium will provide the findings for each country in this regard, preceded by an introduction and overview, with some reflections on the findings so far at the end of the second symposium.

Paper One: Overview and introduction by Stephanie Allais and Yael Shalem

Paper Two: Canada by Carlo Fanelli

Paper Three: Ghana by Hanlie Robertson

Paper Four: Ethiopia by Lynn Hewlett and Carmel Marock

Paper Five: South Africa by Glynnis Vergotine and Popopo Mohlala

Paper Six: Sweden by Lazaro Herrera

## Keywords:

occupations, professional bodies, education, labour market



# The Development of Occupational Qualifications: Has South Africa Escaped the Failings of the National Qualification Framework?

**Alphonsus, Naomi** (University of Witwatersrand)

In South Africa, concerns around slow economic growth and high unemployment have given rise to critiques of post-school education and training. These critiques are centred on the idea that education and training are not producing the right skills for the economy. One of the South African government's policy interventions to create the right skills has been reforming occupational qualifications for mid-level occupations. Currently, these qualifications are developed using occupational definitions with associated skills, tasks and duties from an international system for occupational classifications for the labour market. The occupational qualification outline and curriculum are created by stakeholders from education and the labour market. Occupational qualifications are intended to be significantly different from previous qualifications created through the National Qualifications Framework (NQF). One of the many critiques of NQF qualifications was the creation of narrow outcomes that were derived from skills needed or performance of tasks in the workplace that made it difficult to develop curricula. This paper will argue that a review of the process of developing occupational qualifications shows that this process may not be a significant departure from the NQF qualifications and subsequently, that this process is vulnerable to the same critiques of the NQF qualifications.

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**Keywords:**

occupational qualifications, National Qualifications Framework

# Transforming Classroom Learning through the Implementation of Learning Organisation Principles: A Case Study of Co-curricular Development and Instruction in Canada

Arulananthan, Niroja (University of Toronto)

Senge coined the term 'learning organisation' stating, "Through learning we re-create ourselves. Through learning we become able to do something we were never able to do." Senge understood learning organisations as having a process to facilitate learning coupled with the adeptness of its people to obtain, create, and share knowledge.

This approach challenges the traditional boundaries and authorities of classroom instructors and post-secondary curriculum developers as the work is shared by all parties involved. However, the deployment of the learning organisation model's principles in classrooms has the ability to transform the learner and the community, as well as bridge the gap between disenfranchised peoples and institutions. Through a poster presentation, a case study is illustrated where principles of a learning organisation were enacted in co-curricular development and instruction of an Early Childhood Education curriculum.

The case study examines seven partnership programmes between the Meadow Lake Tribal Council, a group representing nine First Nations communities in Canada, and the School of Child and Youth Care at the University of Victoria. First Nations communities in Canada have been the subjects of historical and present-day systemic oppression and racism that has negatively impacted on community health and social and economic development. Insertion of First Nations values and knowledge in education curriculum are regarded as integral to transform their communities.

Through the partnership, a 'Generative Curriculum Model' was developed. It represented an approach that prioritises impactful learning of community relevant knowledge sought through dialogue, open-ended and flexible curriculum, and collaboratively facilitated by instructors, students and community members.

The model utilised demonstrated strong evidence of benefits to students, the communities the students came from and went to work in, and the post-secondary institution involved. The learning transformation that occurred confronts issues of social inequality amongst the First Nations communities involved in the partnership.

## Keywords:

learning organisation, transformation, classroom learning

# Work Integrated Learning through R&D Projects: A Case Study of Student Participation in an Integration R&D Project between Uddevalla Municipality and University West, Sweden

**Assmo, Per; Thomas Winman** (University West, Sweden)

This paper presents an example of how the concept of Work Integrated Learning (WiL) is practically integrated into two R&D projects at University West (UW) in Sweden. WiL is the overarching profile at UW, both in terms of research and education.

The empirical component focuses on the R&D projects that actively include and integrate undergraduate and graduate students from various disciplines, to work together with researchers and experts in civil society. The R&D projects are concerned with what knowledge is needed and how integration worker competences are induced and worked with to support integration of immigrants into society when a variety of governmentally supported activities have emerged. The project involves different professional groups with different knowledge domains, and the challenges the project are scrutinising are multi-faceted as well.

To address the challenges of the projects, we identified a need to involve the knowledge, methods, terminology and expertise from different disciplines, as well as from various professions and sectors. The project design is based on the co-production of knowledge where all actors jointly contribute to each other's development. We work in an inter-sectoral and interdisciplinary manner, where everyone contributes to the project, making the performance of the project an arena for innovation, collaboration and public benefit. The results and insights we develop will be of importance for education of municipal staff, as well as for the development of integration activities and the professionals involved. In addition, the results will contribute to the development of theories and knowledge that are important for both the profession-specific knowledge domains.

We work with joint seminars, workshops and R&D circles and through the exchange of ideas, reflective conduct and active participation. The students, researchers and professionals can thereby gain knowledge and experience that reaches beyond the conventional in-class education. This paper analyses how WiL can develop working styles that enhance learning and improve academic quality in higher education.

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## Keywords:

Work Integrated Learning, higher education, integration, participation, co-operation

# Inspiring and Enabling Innovation within VET

ID006

**Barabasch, Antje** (Swiss Federal Institute of Vocational Education and Training)

There has been growing recognition that nurturing students' creative potential is a valuable, yet often unrealised, educational goal. Much of the research focusing on creativity is concerned with the individuals' intellectual skills promoting creativity, such as divergent thinking. In VET there is little research done so far on creativity development as a competence that supports innovation at the workplace. Moving towards a focus on team effort at the workplace requires an understanding of social practice and inter-subjectivity which needs to be experienced within VET as supportive of creative processes and innovative practice.

The subject of inquiry is to elaborate on the questions of creativity unleashing and enhancement in the field of VET. How can schools provide opportunities for choice, imagination, and exploration as a collaborative endeavour within their curricula? And how do enterprises support creativity development and in particular, through aesthetic education throughout their training?

In order to develop the creative potential among VET students to shape their work in creative ways, pedagogical methods need to be explored and possibly further developed in collaboration with teachers. Creativity-supportive practices include (a) explicitly teaching for creative thinking, (b) providing opportunities for choice and discovery, (c) encouraging students' intrinsic motivation, (d) establishing a creativity-supportive learning environment, and (e) providing opportunities for students to use their imagination while learning to develop aspirational commitment. In order to support this practice, VET institutions are challenged to strike the balance between providing structure and freedom so that students feel supported and encouraged to take the risks that exploration entails. In addition, the learning environment in vocational schools as much as the learning culture at the workplace need to support creative expression. Not much is known yet about how to incorporate creativity in everyday teaching in VET and how students learn to be creative at the workplace. This involves using activities that lead to the development of multiple ideas, problem definition, the use of analogies and evaluating ideas and products that students generate.

The paper to be presented will outline the results of a literature review which builds the foundation for a research project concerned with the study of creativity development within the higher VET programmes for tourism in Switzerland. It will introduce a critical reflection on approaches to aesthetic education and creativity within selected training programmes in Switzerland and provide first results from a study into creative practices at selected higher VET institutions. The research contributes to our understanding of creativity development and creative processes among students and teachers in VET.

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## Keywords:

vocational education and training, innovation, creativity, didactics

# Work-Integrated Learning and Career Development Learning as Transformative Learning Pedagogies in Higher Education

**Batholmeus, Petrina; Pop Carver** (Cape Peninsula University of Technology)

Career development learning branches from career(s) education which Watts (2006) describes as planned experiences designed to facilitate the development of self-awareness (interests, abilities, values); opportunity awareness (knowing what work opportunities exist and what their requirements are); decision learning (decision-making skills); and transition learning (job-search and self-presentation skills). Career development learning in Higher Education Institutions (HEIs) in Africa has not generally been considered a part of formal academic programmes, rather a support system that students receive and which is usually optional for students. However, with the rise of work-integrated learning programmes in HEIs and efforts to enhance workplace learning and graduate employability, there is a need to integrate career development learning into all academic programmes in HEIs. This does not only assist with preparing students for the workplace and with building a bridge between classroom theory and the world of work, career development also provides an understanding of the students' career paths and transition into the world of work. Hence, this study aims to discuss the importance of career development learning in curricula of higher education academic programmes as far as preparing students for the workplace is concerned. This is done through considering literature on the relationship between career development and work-integrated learning career development learning programmes employed in higher education institutions as well as multi-disciplinary career development frameworks and strategies in place to help students to be ready for the world of work. Career development entails specific career needs that should be considered.

Chen, Chang and Yeh (2004) define career needs as the personal needs of goals, tasks and challenges in a person's career, and it is recognised that career needs change with various career stages. This goal may be a particular landmark to be achieved during a career, which provides a person with the necessary direction and motivation. Career goals according to Chen, Chang and Yeh (2004) enable an individual to structure and motivate their work behaviour by setting goals and by practising new and desired work behaviour; thus, these goals focus on current efforts. Conversely, career tasks can be defined as individuals' effort to identify opportunities available to them and then take action based upon them, demonstrating initiative, and spending time and energy developing skills and competencies to achieve them. Students need these tasks to recognise what areas of their careers they have less interest in as well as areas that they would like to specialise in. The opportunity to be groomed and gain deep understanding of a career may be the determining factor in a student's level of success. There are however career challenges that relate to future career needs arising from subsequent career developmental opportunities. Over the years, career development has evolved and some challenges experienced in the past are still very common. These are experienced from the workplace point of view as well as HEIs. Conlon (2004) proposed a theoretical domain to compare career development between the 20<sup>th</sup> and 21<sup>st</sup> centuries to create a foundation for future research on career development's role and effectiveness in the 21<sup>st</sup> century workplace which can also be adopted in HEIs to create career development learning. These include: demographics, old vs new economy, career patterns, workplace justice, lifestyle and welfare trends, employee/individuals responsibilities, education and training, as well as career development roles. Conlon (2004) investigated career development challenges in the 21<sup>st</sup> century and found that the study was limited by the shortage of global literature, particularly in developing nations or in cross-cultural contexts. This study hence used literature from African countries and came up with recommendations that these countries can use to integrate career development in HEIs, in efforts to improve employability and graduates' bridging into the workplace.

## Keywords:

career development learning; work-integrated learning; higher education; workplace learning; employability



# Practice Theory and Methodology: (De)centring Leaders in Work and Learning?

Bach, Søren Blem; Buch Anders (University of Aalborg)

ID008  
PAPER AVAILABLE

Practice theoretical approaches have made their entry in the social sciences and humanities over the last 30 years. Many scholars in different disciplines and with different research interests and backgrounds have focused on the day-to-day practices of actors in their studies. Philosophers like Theodore Schatzki, Joseph Rouse and Andreas Reckwitz have outlined the fundamental ontological and epistemological presumptions of practice theories in relation to agency, the social and society and described how practice theories draw on philosophical insights from mainly the late Wittgenstein and the younger Heidegger, but also significantly the early Giddens, Bourdieu, Butler and the late Foucault. In studies of work and organisation, social scientists like Silvia Gherardi, Davide Nicolini, Wanda Orlikowski and others have theorised work and analysed the role of technology within organisational development. Similarly, the practice theoretical perspective has been made productive in relation to processes of learning. Theorists like Jean Lave and Etienne Wenger, Paul Hager and Stephen Kemmis have demonstrated how learning processes are best understood as transformations of and within practices. Practice theories accentuate 'the primacy of the practical' in understanding human activity and bring forward 'practices' – understood as organised doings, sayings, and relatings – as the unit of analysis, thereby also de-centring 'individuals' (and presumably 'inter-actions' among individuals) in the analysis of work and learning processes.

The practice theoretical perspective has mostly been elaborated in relation to its ontological, epistemological and theoretical implications. It is only more recently that practice-based scholars have started to explicitly and systematically focus on the *methodological* implications of pursuing a practice theoretical perspective (e.g. Silvia Gherardi, Davide Nicolini, Paul Richard Trowler, Marcelo Bispo, Dubravka Cecez-Kecmanovic et al.). This paper explores and critically reflects upon methodological approaches to the study of practices.

Dubravka Cecez-Kecmanovic et al. (2014) have reviewed recent practice theoretical journal articles to explore their methodological preferences and how the methodological choices are coupled with ontological and epistemological presuppositions. They identified two different strands of research: one that theorises sociomateriality in thoroughly 'relational' terms, and another that understands the sociomaterial basis of activity in (at least provisorial) 'substantialist' terms. The difference between these two strands of practice theoretical research thus concerns the question of whether practices should be studied as either interactions of what was originally non-relational (entities like technologies, people, persons), or whether practices are better understood as 'intra-active' (e.g. Barad's agential realism or Actor-network theory) relationships that are 'relational all the way down'.

This paper draws on considerations made for the design of a PhD project. The project examines how leaders in different teams in a Nordic bank learn in practice at work. It also examines how the learning affects the leaders' subjectivation. The project uses action research and includes interviews with the leaders as well as observations of their leadership in practice. The focus on the leaders' practice involved closely monitoring how they learn together with their teams and how this affects their own subjectivation process.

Practice theoretical approaches have typically focused on the research of practices and how they change or reproduce themselves. Less focus has been placed on trying to understand the subject positions in learning processes among leaders within the practices. Practice theory and critical psychology will be applied as a theory-method package in the project and the concept of 'learning trajectories in practice' (Dreier, 2008) will be introduced to mediate between a de-centred practice perspective and a 'substantialist' person-centred perspective. Ontologically the focus will be on understanding and describing the activities of the leaders and how these activities contribute to both the production and re-production of learning and work practices. It will be argued that to understand processes of subjectivation and learning in practice, it is necessary to adopt a (at least provisorial) 'substantialist' position.

## Keywords:

methodology, practice theory, relationality, substantivism

# Work-related Lifelong Learning Participation: A Comparative Study between Native and Foreign-born Adults in Western Countries

Boeren, Ellen (University of Edinburgh)

This paper aimed to increase understanding on the work-related lifelong learning participation of immigrants in the Western world. In most countries, the percentage of the foreign-born population has increased in previous years. This increase means that countries need to think about migration policies and evaluate how migrants are contributing to society in general, and work in specific, or how they could be helped in achieving sound levels of integration. While Bonfanti and Xenogiani (2014) have already explored the labour market outcomes of immigrants based on PIAAC data, they mentioned the need to conduct additional analyses on the '*access to training*'. The importance of this area (lifelong learning) is regularly stressed in a range of policy documents, e.g. in Europe through the benchmark of participation in adult lifelong learning activities, but also the OECD focuses on participation indicators in annual 'Education at a Glance' reports (European Commission, 2009; OECD, 2015). The rationale for focussing on participation in lifelong learning is strongly linked to the notion of developing and maintaining useful skills.

Using a framework for comparative analyses in lifelong learning research, this paper compares results of native- versus foreign-born adults in a range of Western countries (European countries, USA, Canada, New Zealand) based on PIAAC data, undertaken as part of a prestigious Thomas J. Alexander fellowship with the OECD. It recognises the complexity of lifelong learning behaviour as an interaction between individuals (influenced by their socio-economic and socio-demographic characteristics), their learning contexts, including workplaces, and the countries in which they live, e.g. through differences in labour market policies, broader social policy actions, education policies etcetera (see Boeren, 2016). The paper explores whether specific work-related lifelong learning patterns among countries are visible for foreign-born adults, but also whether native and foreign-born adults differ from each other in relation to lifelong learning based on their socio-economic and socio-demographic characteristics such as age, gender, educational attainment and their jobs. In this respect, the paper is comparative at different levels as it (1) compares native- and foreign-born adults' work-related lifelong learning participation based on their socio-economic and socio-demographic characteristics, and (2) compares the work-related lifelong learning of foreign-born adults across different types of countries (e.g. Nordic Scandinavian countries versus Southern Mediterranean countries in Europe).

Results indicated that participation in work-related lifelong learning activities is lower for foreign-born adults compared to native-born adults in most Western countries, although this is not true for participation in *formal adult education* – but it is true for participation in non-formal education which is mainly work-related. There is also a strong correlation between participation rates of native and foreign-born adults (e.g. high for both groups in Scandinavian countries), and countries with higher participation rates tend to invest more in education, e.g. those with a highly educated population, a low unemployment rate and a low score on inequality indicators such as the PISA Inequality of Opportunity measure. While socio-economic and socio-demographic factors seem the strongest determinants of participation, foreign-born adults seem to keep on experiencing a slight disadvantage in terms of chances to participate in adult training (e.g. young and highly educated adults participate most, but being foreign-born slightly reduces the chance).

This paper contributes to the academic and policy debate on the continued disadvantaged position of foreign-born adults in relation to their participation in work-related lifelong learning. Because of the comparative nature of the paper, specific attention is paid to processes of policy learning and exchange (see Phillips & Ochs, 2003), e.g. based on the findings that countries with 'strong' macro-level characteristics (e.g. education spending, low levels of unemployment) generate higher levels of participation and higher levels of use of skills, also among the foreign-born population. In doing so, the paper helps leaders to engage in evidence-based policy making.

## Keywords:

lifelong learning participation, comparative research, migrants, quantitative analyses

# Enhancing Institutional Relationships in the Context of the South African National Qualifications Framework: Policy in Practice

ID010  
PAPER AVAILABLE

**Bolton, Heidi; Darren Lortan; Savathrie Maistry; Bruce Graham; Anandh Maistry** (South African Qualifications Authority, Durban University of Technology)

Democratic South Africa inherited a racially segregated, unequal, unfair education and training system. The majority of people in the country had been denied access; quality assurance was uneven; different types of learning did not enjoy equal respect, and qualifications were not necessarily linked to learning pathways. The South African National Qualifications Framework (NQF) was the means chosen to integrate this system, to make it accessible to everyone, and to enable quality learning, and transparency. The South African Qualifications Authority oversees, *inter alia*, the implementation and further development of this differentiated and coordinated NQF. There is now one system, which has been set up to enable individual development of students in particular, and to contribute to the social and economic development of the country as a whole.

The three papers in this symposium focus on the enhancement of articulation in the context of NQF policy in South Africa. Paper 1 sets the scene, firstly defining how 'articulation within the NQF context' is conceptualised. Secondly, it describes the types of intra- and inter-institutional relationships, and relational agency (Edwards, 2014) needed for articulation in this context. Thirdly, it touches on the role of long-term research partnerships in building NQF Communities of Practice and relational agency in the system for education, training, development and work in the country. It closes with a summary of the findings of a national South African Qualifications Authority-Durban University of Technology (SAQA-DUT) survey into the extent of existing articulation initiatives seven years after the promulgation of the NQF Act, highlighting the ecologies (Bronfenbrenner, 1989) of five successful models which could be taken to scale.

Paper 2 outlines the SAQA-DUT partnership research into 'articulation' in more depth. It sketches the relationship between the National Articulation Baseline Survey and the broader objectives of project. The SAQA-DUT investigation includes an Articulation Baseline and six in-depth case studies involving a range of stakeholders, the development of the 'relational agency' (Edwards, 2014) needed for strengthening articulation networks, and the development of articulation across the system. The research attempts to answer the following broad question: 'What successful models exist in South Africa for learner transitioning between TVET Colleges and HEIs, between UoTs and traditional universities, and between Colleges or HEIs, and workplaces? Why are these models successful? How can they be taken to scale?' The project seeks to identify, analyse and document successful models and relationships for student transitioning; explore the potential for developing collaborative models in order to take the successful models and relationships to scale; and identify the nature of activities and support that institutions, staff, and students need for successful transitioning.

Paper 2 introduces the first in-depth case study, which proposes 'participatory management' as an enabler of effective management of articulation arrangements between institutions, in this case a Higher Education Institution (HEI) and a Technical and Vocational Educational and Training (TVET) College.

Paper 3 outlines the second of the five case studies in the SAQA-DUT partnership research. It focusses on articulation between engineering programmes in the TVET Colleges and HEIs in three provinces and is limited to three disciplines, namely Electrical, Electronic and Mechanical Engineering. The notion of 'epistemic injustice' (Fricker, 2007, Anderson, 2012, Keet, 2014) is used as the lens through which a Participatory Action Research (PAR) framework is used to guide the enquiry. The study examines the extent to which certain practices employed in articulation arrangements constitute epistemic injustice, and explores how such practices may be ameliorated, thereby promoting epistemic justice.

## Keywords:

NQF, articulation, learning pathways, inter-institutional relationships, participatory management, epistemic injustice

# Questions of Regulation: Professional Milieus and Labour Markets for Accounting Professions in Post-Apartheid South Africa

**Bonnin**, Debby (University of Pretoria); **Shaun**, Ruggunan (University of KwaZulu-Natal)

The aim of this paper is to examine the dynamics that have shaped the professional milieus and labour markets for the accounting (referring here to both chartered accountants and auditors) professions in a post-Apartheid South African context. This paper examines the changes in the regulation of the accounting and auditing profession in South Africa.

In order to do this, we begin by briefly examining how the profession was regulated historically. This, we argue, occurred through the regulation of these professions by both the Apartheid state and the relevant professional bodies via strategies of racialised and gendered gatekeeping, professional closure and the manufacturing of professional boundaries. The outcome was a racially skewed labour market in these professions, as well as hostile professional cultures towards black South Africans wanting to enter these professions.

The second part of the paper sketches out the recent global context for regulation. We argue that this context i.e. the adoption of, and compliance with, the International Financial Reporting Standards as set by the International Accounting Standards Board are important to the post-apartheid South African economy for a number of reasons. Primarily, it is necessary to South Africa's integration into a globalised integrated economy and furthermore, essential to attracting Foreign Direct Investment.

The third part of the paper explores the local environment of regulation post-1994. There are two aspects to the way in which this happens. Firstly, there is 'outside' regulation i.e. through the state. And this has entailed the introduction of new legislation in the post-Apartheid period, its purpose being to ensure global compliance as well as meet the state's aims of opening access to those previously excluded. And secondly, there has been self-regulation through the professional body i.e. South African Institute of Chartered Accountants. These two 'types' of regulation have not necessarily been in contradiction and the conclusion is there has been a 'mixed' process of regulation with national control being maintained.

In the final section of the paper we explore the 'meaning of these dynamics with regard to the literature. We draw a number of conclusions. Firstly, that South Africa is an example of co-regulation (i.e. both State and Professional Bodies) but that in the recent period it has moved from happening on two fronts (national and professional) to happening on three fronts (international, national and professional). Secondly, that the State has articulated its regulatory agency at two levels – national and global. Thirdly, we have seen the coinciding of multiple agendas. The State, as a disciplinary body with regard to the professions i.e. pushing its agenda for transformation, also coincides with the wish for independence (from chartered accountants) by the auditors (hence their support for a new regulatory environment). Ultimately, the paper raises questions of intra-professional boundaries/power.

## Keywords:

professional milieus, labour markets, accounting, post-apartheid South Africa

# Understanding Adult Learners' Sense-Making to Inform Pedagogical Innovations in Blended Learning Environments

ID012  
PAPER AVAILABLE

Bi, Xiaofang; Helen Bound (Institute for Adult Learning); Christine Owen (University of Tasmania)

The paper will outline a conceptual framework and preliminary insights on a project aimed at investigating Singapore adult learners' learning experiences in blended learning environments. The focus is on how they 'experience' and 'translate' their learning in and across blended environments, considering the implications of these processes for pedagogical practices and beliefs.

Taking our lead from the Institute of Adult Learning that offers an expanded definition of blended learning, we consider blended learning to be any combination of classroom, technology-enabled learning and workplace or work-based learning. For this project, we understand learning as a process contributing to an increased capability to act differently in the environment (Owen, 2017); the learning process involves sense-making. Weick (1995) described sense-making as the process by which people give meaning to experience. If we consider experience as a process of "transforming collective cultural experiences (knowledge, skills and normative directions) into individual experience, constituting individual subjects in doing so, and at the same time changing social practices" (Salling Olesen, 2017), this means we need to understand the dynamics involved in these processes. More specifically, we need to understand the processes of sense-making and how the context – the space, the inhabited practices, and the individual's biography – mediate sense-making for individual and collective subjects.

There are existing analytical tools to better understand the conceptualisation and knowledge building processes. Scardamalia and Bereiter's (2015) knowledge building approach is one such tool; it enables researchers to categorise how learners construct and co-construct knowledge through interaction/dialogues with trainers or peers. In dialogue and inquiry, high quality questioning strategies are essential for promoting effective learning and knowledge building amongst learners (Bi, 2016). Our project is also interested in better understanding how learners develop such questioning strategies and we adopt the interaction analysis model (IAM) (Chai & Tan, 2009; Gunawardena, Lowe & Anderson, 1997) to explore the different stages of knowledge construction and co-construction in learners' learning processes. In addition, we investigate the development of learners' conceptual understanding by asking learners to make visible their developing understanding through the use of concept maps.

We propose that the structuring or architecture of different environments can facilitate reflection, and collaboration or, alternatively, can shut it down. As learners negotiate their way around different learning affordances (Billett, 2001) and sense-making, there is a process of appropriation (Wertsch, 1998) taking place through interaction often with a more competent partner. How learners make sense in differing environments requires an understanding on the part of the researcher of the space itself – its cultural tools, its architecture, relations within the space, the intent of the activities, the norms and limitations for sense-making, and so on. Different patterns of relations, routines, type of work, forms of production, flow and design of the work and so on, mediate performance and possibilities for learning and development. Such an understanding of the spaces of learning not only potentially enables us to understand how learners make sense and embody practices, but also their interaction with the spaces in their journey of "transformation of understanding, identity and agency" (Edwards et al., 2002: 532). This presentation will also seek engagement and feedback on our conceptualisation of adult learners' sense-making to inform pedagogical innovations in blended learning to inform future research project work.

## Keywords:

sense-making, adult learners, blended learning, pedagogy, cultural tools



# The Infra-Structuring of Adult Learning in Singapore

Chia, Arthur (Institute of Adult Learning, Singapore)

Infrastructures are typically invisible systems that operate in the background to enable forms of life and work. Infrastructures are commonly associated with public systems such as roads, electricity, and the internet. These systems enable the circulation of people, resources and ideas. There is a certain coherence and logic to infrastructures which could be regarded as materialised expressions of ideas, ideologies and social life. Therefore, infrastructures are both material and symbolic networks in which people live, imagine, identify opportunities and tap into circulating and proliferating resources. Infrastructures are networked forms of production and distribution or “social-material assemblages” that are constantly being made and re-made through everyday practices (Anand, 2011). Infrastructures not only produce and distribute resources but also political authorities through mapping and regulating things like accessibilities, possibilities and aspirations.

Using the framework of infrastructure, this paper explores how (adult) learning in Singapore is being imagined and configured for a changing economy that requires people to re-think about education and employment and to adjust their expectations about career prospects or job opportunities. I argue that the infra-structuring of learning not only attempts to equip people with the required skills and knowledge for new types of jobs enabled (or disrupted by) technology, for example, but it also seeks to change attitudes and expectations about education and work, employment and life chances. I show how the infrastructure of adult learning which comprises training institutions, government schemes, and regimes of recognition materialises new possibilities as well as potentially new politics and publics. Hence, this paper suggests that by focusing on the infra-structuring and/or infrastructure of adult learning, one can better understand the ways in which people are mobilised through learning as a new regime of the state and market.

## Keywords:

infrastructure, learning and work aspirations, knowledge and skills, politics and publics

# Job Crafting Practices of Restaurant Cooks

Chia, Arthur; Silin Yang (Institute of Adult Learning, Singapore)

ID014  
PAPER AVAILABLE

In the changing nature of work, workers engage in job crafting to improve person-job fit between job characteristics and their own abilities, needs and preferences (Wrzesniewski & Dutton, 2001; Tims, Bakker & Derks, 2012). Job crafting is a relatively new concept, which is different from the traditional models of job design, where structural features of the job are created and enforced by the managers. Job crafting is a process through which workers proactively redefine and redesign their tasks, relationships, and perceptions in order to create a work environment that enables them to achieve both job and personal goals. According to Wrzesniewski and Dutton (2001), there are three types of job crafting practices – task, relational and cognitive crafting. This paper draws on the data from two case studies to investigate job crafting practices of cooks in restaurants.

The first case study was one of six case studies drawn from a semi-ethnographic qualitative research project (Bound, Chia, & Karmel, 2016). In this project, the six case studies are very varied and span across different industries: workplace learning facilitators, restaurant cooks, rota commanders of a fire-fighting unit, resident doctors, aircraft engineers and IT network engineers. Being a semi-ethnographic study, observations, analysis of company documents, semi-structured interviews and small focus group discussions constituted the data for the six case studies. The data from this project was originally collected to understand how assessment has been carried out (i.e. designed and implemented) in various learning sites including the classroom, laboratory, centralised training kitchen and training simulator. However, the topic of job crafting also emerged during our analysis. The case study selected in this paper focuses on the lived experiences of the cooks in a restaurant kitchen setting of a restaurant chain operator based in Singapore. The second case study is based on in-depth interviews with a 19-year-old female cook with two years of working experience in the food and beverage industry.

The transcriptions of the interviews and focus group discussions, documents and field notes were imported into NVIVO (software to assist with organising and analysing qualitative data). Given that Wrzesniewski and Dutton defined job crafting as changing the task, relational, and/or cognitive boundaries of a job, job crafting actions disclosed in the data were initially coded by each of these three boundaries. This helped maintain consistency with the literature and to provide readers of this study with an easy framework to understand and utilise the data. This strategy is also consistent with Berg et al.'s (2010) job crafting data analysis approach. Additionally, more than one code was often assigned to a single piece of data if it met the criteria for multiple codes. Throughout the analysis, relevant excerpts in the data were constantly summarised, sorted, and compared in order to ensure the codes that were used in the beginning of the analysis were still relevant after many rounds of data processing.

Our findings indicate that although the cooks did not know about the concept of job crafting and it was not a conscious choice for them to alter their jobs, they are actively engaged in adopting different job crafting practices within the constraints of their work environment. Our findings also reveal that all three forms of job crafting are interconnected and mutually reinforcing in a variety of ways, thus offering implications for theory and practice.

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## Keywords:

job crafting, assessment, changing nature of work

## Renewing Workers' Education

**Cooper**, Linda (University of Cape Town); **Sheri Hamilton** (University of Johannesburg)

It is generally acknowledged that the South African labour movement is in crisis (Satgar & Southall, 2015); this is part of a broader crisis reflected in stubbornly high levels of unemployment, inequality and poverty in South Africa, exacerbated by international economic and political instability. South African trade unions have been experiencing a downward trend in membership for years, a significant decline in workers' democracy and an increase in bureaucratisation. This has been exacerbated by deep-seated divisions within the major trade union federation, COSATU, the fragmentation of long-established unions, and the proliferation of smaller, independent unions.

Alongside these developments – as both cause and effect – there has been a weakening of workers' education (Vally, Bofelo & Treat, 2013). Fewer and fewer members get access to union education programmes, and those who do, often use it to support individual upward mobility which takes them 'up and out' of the union movement. Many unions no longer carry out their own education but 'outsource' education to tertiary institutions and even to private companies. Much worker education has become depoliticised and focuses on narrow versions of skills development. Many observers have argued that in rebuilding the labour movement, it cannot return to what it was but needs to become something different, and in building the new, a revitalised workers' education must play a central role.

This symposium will present work-in-progress of a research and publication collective, comprising a group of workers' education scholars and practitioners working on the production of a book focused on 'Renewing Workers' Education'. The book is aimed at exploring how to re-invent workers' education – in South Africa but also beyond – in order to engage with the new and build a vision of an alternative future. It aims to critically assess past and current practices of worker education, understood as those educational practices that have as their specific purpose the economic and political empowerment of workers. The book's focus will extend beyond trade unions to include the range of educational initiatives aimed at the working class more generally, including working class women, casual and informal sector workers, migrant workers, and workers' political parties. It will document the more recent history of workers' education in South Africa, as well as current practices and perspectives further afield in Africa and in North America. It aims to develop conceptual tools that will assist with the reflection on and theorisation of the practice of workers' education, and to identify key lessons that can be used to reinvigorate workers' education, as well as inform future policy and practices on worker education.

This symposium will comprise a panel of five contributors to this book and their presentations will cover the following themes and issues:

- An overview of the book's genesis, production process, aims and challenges;
- Exploring the impact of key shifts in the form, content and purposes of workers' education in the post-apartheid period, and particularly, the processes of institutionalisation and formalisation/certification of workers' education;
- A critical assessment of gender training within the labour movement, and its ability to contribute to the challenging and transformation of patriarchal norms and practices;
- A focus on education amongst non-traditional workers, including the growing numbers of outsourced, casualised, semi-employed and self-employed workers – described by some as the 'precariat' (Webster, 2012);
- A focus on theorising workers' education – and why such theorisation matters.

The symposium aims to enrich debates around work and learning by drawing on the practical experiences, intellectual understanding and critical political insights of longstanding worker educators from the 'south'.

### Keywords:

workers' education, labour movement, radical pedagogy, social justice, accreditation, institutionalisation

# Organising Learning at Work: Simulation Exercises for Inter-Professional Teams to Improve Clinical Outcomes of Maternity Care

**Dahlberg, Johanna; Marie Nelson; Marie Blomberg; Madeleine Abrandt Dahlgren** (Faculty of Medicine and Health Sciences, Linköping University and University Hospital, County Council of Östergötland, Linköping, Sweden)

This paper explores the pedagogical practice and clinical outcomes of a ten-year competence development activity in maternity care aiming at improving skills and team collaboration, with the aim to reduce injuries of the mother and the infant due to complicated deliveries. Maternity staff need to be confident in handling complications when they appear; however, staff members will not develop confidence in handling rare complications through daily clinical work. One way to tackle this dilemma is to introduce different types of skills and simulation training programmes.

In 2008 a simulation-based team-training programme, Practical Obstetric Team Training (PROBE), was introduced in the delivery ward at Linköping University Hospital, Sweden. The objectives of PROBE were to improve inter-professional teamwork, improve obstetric emergency skills, and thus improve patient outcomes. The challenge of working as an inter-professional team requires the need to make different professional-specific modes of knowing and reasoning cooperate (Guile, 2014; Fox & Reeves, 2015). In addition, inter-professional collaboration and learning has been shown to be interdependent with how the workplace is organised (Collin et al., 2012).

There are indications that PROBE as a competence development activity has led to improvements of practice. Evaluations of the babies' medical records have demonstrated how the incidence of new-born injuries has decreased since the start of PROBE ten years ago, which is an important clinical outcome. Recent studies on the training of inter-professional collaboration skills indicate that inter-professional simulation improves role clarification and promotes problem-solving skills (Titzer et al., 2012). In this paper, we are interested in studying the simulation activity as a pedagogical practice, particularly the debriefing phase of simulation where participants reflect on what was enacted and what was learned through the activity.

Empirical data was gathered through video-recordings of a team of professionals in clinical maternity care participating in simulation as a competence development activity and through observational field notes of these recordings. The model of facilitating relational reflection adopted in this study seemed to provide ways of keeping the collaboration and learning in the inter-professional team clearly focused, and might be one of the factors leading to a successful outcome of simulation as a competence development activity over time.

## Keywords:

inter-professional, team training, simulation, debriefing, maternity care

# A Paradigm Shift for '(l)earning-a-living' in a Post-Industrial World-of-Work of Mass Unemployment

Dalton, Norris (South African Institute of Management)

Over the past three decades, 'mass unemployment' has arguably become the leading social problem in many developing countries, including South Africa, due to the emerging Post-Industrial Age since the mid-seventies. The Industrial Age (1775-1975) concept of the 'The Job' (i.e. regular, secure employment with a company throughout one's natural working life until the pensionable age of sixty or sixty five years of age, after which when one could hope to retire in one's 'Golden Years') has passed its sell-by date.

The ever-increasing progress of technological innovation – through automation (replacing the need for Blue collar physical activity), computerisation (replacing the need for White collar 'routine' mental activity), expert systems /robotics (replacing the need for White collar 'higher' mental activity), has dramatically changed the structure of the workforce. This has also been exacerbated by the massive influx of Pink collar women into the workforce since the 1970s, as well as globalisation, which has shifted the search for low-cost labour (both low-skilled/ lowly-educated and high-skilled/ highly-educated) from the First World economies to the fast-developing economies, such as India, China, South America, Mexico and the Far East.

The universal mantra that 'Education is the Solution' (i.e. Get an Education - Get a Qualification - Get a 'good' Job) has resulted in a crisis today whereby there is an expectation that all pupils and students are entitled to a university education and that it should be free. Alternatively, the Education system suggests that if you are unable to get a 'good' job, or any job, then train to become an 'entrepreneur' and start your own business. However, the traditional teaching of 'entrepreneurship' based upon the concept of the 'Business Plan' is irrelevant for start-up enterprises, most of which do not survive the 'creative-destruction' phase.

Only a Paradigm Shift regarding the nature of 'employment', 'jobs', 'work' 'money', 'self-help', 'mutual self-help', 'retirement' and lifelong (l)earning-a-living can meaningfully transform the lives of the millions of apathetic, non-working, hopeless, discouraged job-seekers into a positive, motivated, hopeful, productive workforce. It is suggested that the concept of the life-skill 'workeracy' would be helpful, namely the ability to survive and earn-a-living in a world-of-work of high 'job scarcity' and a 'lack of available capital'. Its implementation nationally through public-private partnerships should be taught to all school leavers and the motivated unemployed, alongside numeracy and literacy, to better prepare them for entering the post-industrial workforce.

In brief, Workeracy is based upon Four Pillars (New Mindset) and Ten Principals (Nature of Work and the Work Creation Process) and conceived as a sustainable process based on the following premises:

- a. Continually creating multiple work opportunities (i.e. income generating initiatives) for every citizen who desires to work.
- b. The income generating initiatives (IGIs) will operate through a variety of 'monies' (shadow wage) such as notes' and coins (fiat monies), goods, services, community currencies.
- c. The work opportunities are to be created by the unemployed job seekers themselves within the enabling or facilitating environment of a national network of Workeracy Centres situated throughout the country in church halls, after-hours school buildings, and libraries.
- d. Government and Business would support the implementation of the Workeracy process by funding bursaries (Corporate Social Investment) for the initial training of the Pillars and Principles of Workeracy, as well as the facilitation of the Workeracy Centres.
- e. The Workeracy process could also be supported by a dedicated 24-hour TV channel devoted to sharing 'workeracy' success stories around the country.

## Keywords:

workeracy, paradigm shift, (l)earning-living, post-industrial, mass unemployment

# A Critical Analysis of Motives for Participation in Continuing Professional Development (CPD) in the Oral Hygiene sector in South Africa: A Cultural Historical Perspective

**Daniels, Freda** (University of Western Cape)

Continuing Professional Development (CPD) has become a globalised discourse which cuts across most professions. In the South African Oral Healthcare sector, professionals are obligated to participate in CPD activities to enable continued learning and refine their professional competence. CPD has been advanced as a positive concept by both policy makers and providers, in terms of assumptions and claims which are made in relation to the benefits of CPD (Friedman, 2012; Boud & Hagar, 2010; Friedman & Phillips, 2004; Queeney, 2000). However, there still seems to be a general lack of a consensual understanding of what CPD is across diverse professions and professionals. This may be due to the wide range of CPD frameworks, models and approaches based on different conceptualisations, motives and learning assumptions (Kennedy, 2005; Webster-Wright, 2009). Yet, despite the high level of financial investment in CPD, there appears to be a great deal of ambiguity related to it, which contributes to the various ways CPD is understood and valued by different actors (Friedman, 2012). This study argues that professionals participate in CPD for different reasons. The study explores critically and analyses the various conceptualisations of CPD, what drives the motives for participation across different institutional levels in the oral healthcare sector and how these motives may, or may not, have influenced their attitudes and the value they attach to CPD. 'Motive' from a cultural-historical perspective refers to 'what matters' for professionals (Edwards, 2010), and how they think, is revealed through their actions and behaviour in the CPD activities in which they participate. The motives of oral healthcare professionals across institutional levels is analysed, i.e. oral hygiene practitioners in both public and private practice, representatives from their workplace institutions, the University of the Western Cape's (UWC) Oral Hygiene Department as CPD provider, and representatives of the relevant Professional Body affiliated to the Health Professions Council of South Africa (HPCSA).

A cultural-historical approach is used as a basis for understanding the dynamic relationship between conceptualisations and motives for CPD participation, which are generally embedded in the political histories, traditions, structures and cultural values of professions and institutions and how these might influence attitudes towards CPD participation. According to Edwards (2010), values, motives and knowledge are deeply embedded in these institutional practices and are manifest in the actions of their activities which will reveal what they understand. The study draws on Edwards' (2010; 2011; 2012) concepts of relational agency to examine what needs to be in place in order to build 'common knowledge' both from the top down and the bottom up that could facilitate transformed attitudes to CPD. As argued by Edwards, when professionals negotiate enhanced interpretations of a complex phenomenon, like CPD, it may become possible to build knowledge that will be held in common by all parties. Common knowledge, therefore, constitutes the motives – the 'what matters' – for each one and is respected by all parties across institutional levels. According to Edwards (2010), this shared knowledge of what matters for the other arises from new ways of understanding and acting which develop through participation in dialogic engagements between actors. To add ontological depth to the cultural-historical analysis of conceptions motives and attitudes to CPD, Archer's conception of reflexive deliberation via 'internal conversation' is employed to analyse to what extent the structural and cultural conditions and institutional powers influence professionals' sense of agency and power to act purposefully in relation to their specific motives. Edwards' concepts of relational agency and building common knowledge through reflexive deliberations resonate with Archer's focus on the interplay between structure and culture, which is activated and mediated through agency. An analysis of the dialectic relationship between structure and agency through the internal conversations of professionals could highlight the resistance and contradictions related to motivated actions and reveal how the structural and cultural conditions constrain or enable their capacity to exercise their agency to either reproduce or transform conditions for professional learning.

## Keywords:

continuing professional development, motives, agency, internal conversation and common knowledge

# Fostering Learner-Learner Interactionist Dynamic Assessment through Process Oriented Education

de Boer, Mark (Akita International University, Japan)

The Japanese government has outlined what it has determined to be the necessary educational path to developing young learners into 'Global Human Resources' (METI, 2010), individuals who have the knowledge and skills to work and interact in a global environment. These include intercultural competences, language communication abilities, and team work skills. From these policies, it was deemed that a new type of syllabus should be created using CLIL (Content Language Integrated Learning) for the first-year general English language classes in the faculties of engineering and agriculture, so learners, based on these mandates of the Japanese government, could develop skills useful for their university career and the working world. In this presentation, I will discuss the findings of the study of the impact of this new syllabus type termed Ecological Dynamic Assessment (eDA). The total number of learner participants in the study was 36 and the impact of eDA was explored through a qualitative study of the interaction between them using Activity Theory (Engeström, 1987) as the analytical framework.

The syllabus combined the use of an online learning management system (LMS) environment with weekly scheduled face-to-face classes. The tasks the learners undertook required them to research information within groups, share that information using asynchronous dialogue in the LMS's online forums, create presentations using their research findings, and then present to peers and invited faculty. The face-to-face classroom time was devoted to group discussion with the teacher available for dialogic inquiry (Wells, 2000). Initial examination of the online forum dialogue revealed evidence that the learners were mediating each other's learning.

To begin, there is a synopsis of each step of the analysis starting with a map showing the complexity of the interaction between groups of learners in the online environment. Next, analysis of the dialogue will be shown. Using activity theory as the underlying theory, the learner dialogue was divided into 'threads' based on the object of the learners' activity and these threads were analysed using Longacre discourse analysis tools (1996). This revealed that the dialogue was procedural, indicating the learners' mediation was similar to an interactionist type (Poehner, 2008), different from hortatory type dialogue seen in teacher-learner dynamic assessment dialogue exchanges (Kinard & Kozulin, 2008; Poehner, 2008). Further analysis of the dialogue using Bereiter's concept of progressive dialogue (1994) and the 'improvable object' (Wells, 2000) indicated that the learners were using progressive dialogue to 'push' the object of the activity towards completion.

It was hypothesised that the improvable object played a key role in fostering learner-learner mediation, so Feuerstein's Learning Potential Assessment Device (LPAD) model (1979), used for constructing more progressively complex modifications of a task during dynamic assessment, was used to compare the learners' modifications to their improvable object. Learner dialogue was then compared to mediated learning experience (MLE) parameters (Lidz, 1991) which showed evidence of learners playing the role of the 'more capable peer' (Vygotsky, 1978) while mediating the other group members to modify the improvable object. It was evident that the learners' mediation nourished the development of the skills necessary to complete the task. It was concluded that the improvable object was the key factor in fostering the interaction between the learners, promoting learner autonomy and increasing learner agency (van Lier, 2004), instilling habits that encourage lifelong learning.

This research has implications for second language learning research and practices. A syllabus of this type in higher education would give learners the experience in using language to promote skill building, rather than focusing on grammar or conversation practice irrelevant to their field of study. This would give the learners more opportunities to become 'Global Human Resources' while developing language competences.

## Keywords:

dynamic assessment, learner agency, ZPD, mediated learning, classroom ecology, LPAD

# Recognition of Prior Learning (RPL): Transgressing Boundaries between Formal and Informal Learning – An Epistemological Case Study

de Graaff, Frederika (Cape Peninsula University of Technology)

Recognition of Prior Learning (RPL) has its origins in social justice concerns, in efforts made by governments, academic institutions and formal education to reach out to constituencies that have been underserved educationally (Michelson & Mandell, 2004) or entirely excluded, as was the case in South Africa. In South Africa, RPL became part of educational policies following the establishment of the National Qualifications Framework (NQF) in 1996. Worldwide changes in socio-economic and cultural conditions have also started to impact on education in SA and require academic institutions to take the workplace into consideration when planning curricula. RPL has become significant because “the interpretations of learning have become extended” (Harris, 2000), enabling adults to receive recognition for current knowledge, contributing to employability and the development of society and the legitimacy of knowledge from outside the academia.

RPL draws its theoretical underpinnings from different philosophies, such as constructivism especially experiential learning; critical theory, placing emphasis on what counts as knowledge (Harris, 2014); and social realism (Breier, 2005) looking at the types of knowledge involved based on the work of Basil Bernstein. There have been widespread theoretical debates concerning the nature of RPL practice and resulting in recent research projects analysing the interaction between the knowledge developed through experience vs. academic knowledge (Cooper & Ralphs, 2016 and Harris, 2014.)

This paper is part of a broader study about the types of knowledge involved in RPL practices. The paper will analyse the knowledge claims made by RPL applicants at a Vocational and Professional Higher Education Institution in South Africa (V/PHEI), in the process of granting credits. Only one qualification is used for the purpose of this paper: the National Diploma (ND) in Architectural Technology.

Using a concept developed by Michael Barnett (2006) of a “toolbox of applicable knowledge”, an analytical tool was developed to try to unravel the idea of a knowledge claim. On the one hand, there is knowledge for the purposes of *teaching and learning* within a V/PHEI, “recontextualised” (Bernstein, 1996, 2000) and adjusted for the purposes of the institution and the curriculum. On the other hand, is *situated knowledge*, tacit or explicit, the disciplinary knowledge as it is used by industry, field or profession in a context dependent application and recontextualised form to enable people to use it effectively within the workplace. Situated knowledge can only develop over a period and one of the RPL application requirements is a fair number of relevant years of working experience.

The knowledge claims made by the RPL applicants are analysed using three different types of evidence; firstly, naturally occurring evidence or workplace based evidence such as design drawings, technical drawings, project plans and minutes of site meetings; secondly, records of interviews held by the researcher with the applicants; and, thirdly a review of an assignment completed as part of the RPL application. The assignment is a reflected space afforded to the RPL applicant by the academic department to indicate width and depth of the knowledge as interpreted by the applicant.

This data will then be compared to the learning outcomes of the subject(s) that the applicant has requested credits for. The analysis looks at the learning outcomes, within the context of the curriculum, taking cognisance of the balance between theory and practice; what knowledge applicants have developed as a result of their work and experiences, what types of knowledge are involved, what boundaries have to be crossed. Conclusions are drawn and knowledge claims and the learning outcomes compared according to the degree of transgression or cutting across boundaries between formal education and informal learning.

## Keywords:

Recognition of Prior Learning (RPL), knowledge, curriculum and employability



# Tensions between Organisational and Individual Interests – Transitions and Transformations in the Negotiating Communication of Training Needs within Enterprises

Denninger, Anika; Bernd K  pplinger (Justus Liebig University, Giessen)

It is a frequent claim that continuing education should transform from a supply orientation towards an orientation on demands. Tailor-made training suitable to the workplace situation and organisational needs is theoretically or normatively frequently considered the best way. Sound needs assessments are important to identify needs and to transfer these into adequate training. The participatory involvement of all employees is essential in relation to workplace democracy but also in relation to modern paradigms of production and service beyond Taylorism and Neo-Taylorism.

This paper is firstly based on system theory (cf. Miebach, 2012; Luhmann, 2000). Enterprises are perceived as organisations, which make their own decisions but are influenced in their decision-making by other systems (political system, economical system, etc.). Different hierarchies and sub-systems exist within enterprises. Decision-making is often regulated by defined and communicated procedures. Even routines can be defined as decisions, since alternative ways of decision-making were previously or are continuously excluded. According to Luhmann, communication is used as a tool to form organisations.

Secondly, the paper is informed by literature on training needs within programme planning theories (cf. Rose & Fleige, 2017). "Needs assessment is a much discussed concept in adult education" (Sork 2000, p. 100) but scholars have frequently pointed out that training needs are not something easily available or something for which someone has only to ask questions or to produce a questionnaire. Nonetheless, the illusion exists that needs assessment is easy to carry out and a rather technical issue. Programme planning literature in adult education in North America and Germany has challenged this technical approach by stressing the importance of socio-political approaches and ethical considerations even or especially in enterprises (cf. Cervero & Wilson, 1995; K  pplinger, 2009; Sork, 2010).

This paper is based on the results of a case study as part of a joint research project. The data was generated from 12 guideline-based interviews, one group discussion and a document analysis. The methods of data processing are based on qualitative data analysis according to Mayring (2008). From this material, a process map was generated showing routines or deviant ways of decision making, stakeholders involved, issues of programme planning and forms of communication.

A case study originating in the German health sector is presented with the goal of pointing out core processes of needs assessment and needs communication within enterprises. Tensions between different interests and needs of different actors become visible and how needs are negotiated is highlighted. Transitions or transformations regarding communication processes are important and programme planners or trainers should be aware of such developments as professionally responsible persons. What role do external and internal actors play or could they play in order to fulfill the high expectations related to demand oriented planning and training?

## Keywords:

organisational and individual interest, transition, transformation

# Utilising Student Heritage in the Language Classroom for Motivation and Cultural Understanding

**Dougherty, Patrick** (Akita International University); **Aya Dougherty** (Akita Prefectural University)

Learning a second language does not require one to shut the door on one's own cultural heritage. Language education can aid in the development of students who are more cognisant of their own cultural legacy, and the language classroom can become a place for the celebration of students' heritage or heritages, as well as being a venue to establish awareness of other cultures and cultural norms. This presentation is based on the research and teaching experiences of the presenters and will accomplish two objectives: (1) to outline a rationale for including student heritage assignments in EFL (English as a Foreign Language) and ESL (English as a Second Language) curricula; and (2) to introduce three projects that the presenters developed and have used in their own language classrooms in order to give language students an opportunity to engage with their home cultures and personal heritages.

The cultural heritage of the language learner can also provide a rich source of inspiration and material to assist in student-centred instruction. The presenters accept Chism and Lou's (2005) premise that one of the significant goals in a language classroom is intercultural understanding, and further that this intercultural understanding must include the student's own culture. In light of this principle, it is incumbent upon EFL and ESL teachers to create opportunities for their students to explore their own cultural and heritage backgrounds. Further, if Moran's (2001) conclusion, that intercultural understanding is formed from cultural comparisons, is applied in this context, it indicates a need for students to reach a sophisticated understanding of their own cultures in order to understand other cultures. Like walking across a stream by stepping from stone to stone, a student must first appreciate his or her own culture and heritage in order to reach an understanding of another culture and heritage.

The terms "culture" and "heritage" are explored in this paper. According to Hofstede (1996), culture is a collective way of acting and thinking. Moran (2001) identified culture as being rooted in practices of behavior, artifacts, perceptions, and the matrix and interaction of the community and individual. Practices of behaviour can be language usage, non-verbal communication, actions and interactions of individuals and individuals and the community. Artifacts can be tools, weapons, clothing, food, or dwellings, among other items. Perceptions, according to Moran, can be belief systems, religion, and or values. The interactions of the community and individual can be rooted in religious observances and rituals, and expectations of behavior and belonging. According to Moran (2001: 24), "culture is the evolving way of life of a group of persons, consisting of a shared set of practices associated with a shared set of products, based upon a shared set of perspectives on the world, and set within specific social contexts." Each of the projects outlined in this presentation addresses one or more of these aspects of culture. The presenters introduce three projects that have been developed for English as a Foreign Language courses in Japan and the United Arab Emirates. Each of these projects (*Tell me about your Country*, *Speaking of Japan: a Conversation Game* and *Lives of our Heritage*) offers students the opportunity to gain a deeper understanding of their own cultural heritage and gives them the vocabulary and experience to be able to explain that heritage and culture to the world through the medium of English.

The projects presented take to heart the directive of the United Nations Educational, Scientific and Cultural Organisation's World Heritage Convention Concerning the Protection of the World Cultural and Natural Heritage as adopted on 16 November 1972, specifically, Article 27, where signatory countries were directed to use education and information programmes to strengthen the understanding and appreciation of heritage and culture among their citizenry, with special focus on the young (UNESCO, 1972). It is of paramount importance that EFL and ESL students understand that learning English does not entail closing the door on their own culture and history.

## Keywords:

culture, heritage, EFL, ESL, classroom

# How is User Involvement Transforming Professional Work, Knowledge and Identities? – Studies in the Danish Health Sector

**Dybbroe, Betina; Annette Kamp** (Roskilde University)

User involvement is currently a cornerstone in the transformation of the health sector in most Western European countries, as part of a “shared governance for health” (Kickbusch, 2011) involving citizens as co-producers with new roles, responsibilities and duties in relation to health provision (Barnes & Coterell, 2011). This affects professional work, knowledge and identities of professionals, and may become one of the main drivers of changes in knowledge bases, clinical decision making, and the positions of the professionals. User involvement takes on different forms as discussed by, for example, Martin (2008), Barnes and Coterell (2011), Vrangbaek (2015) and can be understood with different models through various methods. However, user involvement is driven forward through rationalities of both consumerisation, rationalisation, and standardisation of health care (Vabø, 2006; Christensen, 2015; Entwistle et al., 2011) and must be studied contextually in relation to how these rationalities create tensions and are presented in different forms in relation to specific areas, patients, and forms of user involvement.

Our research focusses on user involvement of the chronically and mentally ill, where users are supposed to take on a major responsibility for mastering and monitoring their own health. We present an analysis of psychiatric practice and home-based practice with elderly, and explore how professionals could manage this and engage in co-production with patients. The implications of user involvement may be understood as a strengthening of organisational control and as challenging the autonomy of the professionals (Evetts, 2011). It can appear to threaten the balance between responsibility and risk (Kilminster & Zukas, 2013) and subsequently plays an important role for the identity processes of health professionals. It is no doubt a way to create better management of illness by patients as seen by, for example, Vrangbæk (2015) and Ørtenblad et al. (2015). But it may also be seen as enhancement of patients’ knowledge; it can create hybrid forms of knowledge, informed by both medicine and users’ experiences (Pols, 2011), possibly creating distrust of knowledge in both professionals and users (Martin & Finn, 2011).

This contribution presents research on user involvement in the health sector in Denmark in 2015 to 2017 based on ethnographic field studies within psychiatry and home-based care. Only very few investigations illuminate how the professionals are involved in and interpret user involvement, and how this may affect professional knowledge, positions and practical work. A few studies point out how time and organisational and institutional frames formed through present standardisation of health services are experienced by professionals as impediments (Jönsson, 2013; Holen & Ahrenkiel, 2011). This issue has also been pointed out specifically in relation to work in psychiatry (Kamp & Dybbroe, 2014). This research however does not address questions on how user involvement may lead to conflicts of knowledge bases and of identities. The paper will focus on how the health professionals, mainly nurses and health care assistants, interpret and contribute to changing welfare service in user involvement models and practices in psychiatry and home-based care. How do they create, resist and negotiate knowledge and quality in the meeting with users, and how does user involvement thereby influence professionalism? We point out how the legitimacy of user management may clash with the legitimacy of the ‘patient’, and further affects the legitimacy of the professional identity. Furthermore, we see that user involvement seems to enhance fragmentation of professional work, when users to a larger extent manage patient pathways, leading to professionals losing insight and clinical understanding.

## Keywords:

user involvement, health care

# Activity Theory and Transformative Agency at Work: The Potential of Double Stimulation

**Engeström, Yrjö** (University of Helsinki); **Callie Grant** (Rhodes University); **Takaya Kawamura** (Osaka City University, Japan); **Nick Hopwood** (University of Technology); **Belinda Gottschalk** (University of Technology); **Joce Nuttall** (Australian Catholic University); **Irene Vänninen** (Natural Resources Institute, Finland); **Marco Pereira Querol** (Federal University of Sergipe); **Annalisa Sannino** (University of Helsinki)

Work related learning in today's world is more than a matter of acquisition of pre-defined skills. It is increasingly a matter of questioning the existing modes of practice and designing novel solutions based on equity, sustainability and common good. In other words, learning at work is intertwined with the challenge of developing transformative agency among practitioners and their clients. How does transformative agency emerge and how can it be fostered in learning? Vygotsky's principle of double stimulation offers a theoretical framework for studies aimed at answering these questions. Recent foundational research (Sannino, 2015) has led to a conceptual model of double stimulation as a stepwise process of facing a paralysing conflict of motives and resolving the conflict expansively by means of cultural artifacts used as 'second stimuli' that enable the subjects to take transformative volitional actions. This symposium's papers report on studies that make use of this framework in different work contexts and cultures. The five papers presented in the symposium aim at identifying the potentials of double stimulation in work related learning.

Callie Grant's paper, *Double stimulation and artifact use in leadership learning for school learners*, asks how learners can be involved in school change in ways that develop them as democratic decision-makers and leaders. This question prompted the restructuring of an educational leadership elective of a postgraduate qualification for practising school teachers at Rhodes University, South Africa. The elective was designed as a formative intervention. In response to the paucity of learner leadership in schools (1st stimulus), the postgraduate students (practising teachers) were mandated to intervene in their places of work and establish after-school leadership clubs for learners. Through their involvement in a guided mini-research activity (2nd stimulus), learners were able to determine 'what mattered' to them. Thereafter, through a process of practical experimentation, learners planned and implemented change initiatives in their schools. Looking across the data of 70 research reports, this paper explores the role of artifacts in the change initiatives of the club learners. It examines the kinds of artifacts the learners drew on and how the artifacts were used in particular situations to foster transformative agency.

Takaya Kawamura's paper, *Facilitating double stimulation in the arts-mediated critical management learning for health/social care workers*, considers how Japanese health and social care workers and organisations are facing complicated care needs of a rapidly ageing population as well as pressing governmental requirements for cost containment, quality improvement and risk reduction. Osaka City University's health/social care executive MBA programme trains medical doctors, nurses, pharmacists, social workers and administrators to cope with these challenges. Every student is required to plan her own developmental work research study to create innovative professional/managerial practices and transform their workplaces. The paper examines potential contributions of arts-mediated workshops to critical management learning in terms of double stimulation, using a questionnaire survey, interviews with the students, and observations as data.

The paper of Nick Hopwood and Belinda Gottschalk, *Double stimulation and tool use in services for families with young children at risk*, examines learning and agency in early intervention services targeting families where risks to the children's development and well-being have been identified. The intention is to build parents' agency in relation to their children's development by transforming parenting practices. The analysis draws on data from a home visiting service and a toddler clinic, examining what kinds of artifacts are used, including abstract concepts, mundane household objects, those introduced by professionals, and the body. These artifacts were used to foster practices such as distracting from a situation, calming down, and becoming physically and mentally 'present'. The analysis identifies tentative links between details of tool use in particular situations, and transformative agency.

Joce Nuttall's paper, *Exploring teachers' transformative agency in response to digital technologies and popular culture in preschools*, explores how preschool teachers are struggling to respond to an apparent contradiction between preschool

as a long-standing cultural form and the reality of children's contemporary engagement with digital technologies. The paper reports on an ongoing study of how teachers can learn to respond educationally by means of a professional artifact known as 'web-mapping'. Web-mapping enables teachers to base the curriculum in children's interests, including popular culture, whilst also addressing young children's concept formation and implementation of mandatory curriculum. This has important implications for teachers' capacity for transformative agency in response to young children's rapidly changing life-worlds.

The paper of Irene Vänninen, Marco Querol and Yrjö Engeström is entitled *Conceptual models as second stimuli: Building transformative agency for collective pest management among Finnish vegetable producers*. This study analyses double stimulation in a Change Laboratory formative intervention aimed at developing integrated pest management among greenhouse horticultural producers in Finland. A series of conceptual models served as second stimuli and were used to grasp, reinterpret and resolve a serious pest problem (1st stimulus) in a geographically compact greenhouse production cluster. The key researcher played a double role as interventionist and participant who was actively learning and helping to construct the models. The analysis shows that the stepwise collective construction and use of the models throughout the intervention facilitated the generation of transformative agency among the participants. By allowing the sharing of different conceptualisations among practitioners and by materialising the discovered new relations in the analysed system, the models functioned as communication and negotiation devices that facilitated expansion from narrow farm-specific objects toward a shared object of collective pest management.

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**Keywords:**

transformative agency, double stimulation, activity theory, conflict of motives, expansive learning, formative intervention

# Learning, Identity and Transformative Agency: A Framework for a Developmental Study of Medical Students' Learning in a Healthcare System in Turmoil

Farnsworth, Valerie (University of Leeds)

The UK's National Healthcare System (NHS) has been undergoing dramatic changes, largely shaped by the state's move to privatisation. This paper makes a case for the need to better understand how these changes impact upon medical students' learning and career choices. The primary argument is that these changes are having profound knock-on effects for patients and healthcare practitioners which students are picking up on as they progress through their medical education, particularly in their practice-based placements. The distinct ways medical students experience these changes need to be understood and that understanding should be used to support students' learning and developing professionalism. Professionalism in this case refers to learning outcomes that are difficult to teach and arguably most readily affected by informal and non-formal learning experiences, which are contextually situated. Professionalism includes the professional skills and attitudes required of a doctor, but also professional identity. In addition to a concern for the impact on learning, there is a need to better understand the identity work that goes on in medical education in light of issues around the retention of doctors and recruitment into certain specialisms as well as leadership roles.

The paper presents a framework and methodological approach to study the way these changes are shaping the identities/identifications and experiences of students who are completing a course in Medicine which includes early pre-clinical placements in both primary and secondary care workplace contexts. The research uses case study and interview-based methods to better understand the situated learning experiences of medical students in order to inform curriculum development and educational strategies that can support students' transitions into their course and into the workplace upon completion of the five-year degree. Viewing learning as socially situated means we need to account for the ways identifications shape and are shaped by the educational experience and transitions. It also means we recognise that learning takes place in relation to activity systems which may entail contradictions that both constrain and enable the learning process. The study explores learning from this perspective. The proposed theoretical framework combines socio-cultural theory with a socio-spatial perspective in order to study learning as situated in space and place, understood socio-materially, socio-politically and discursively. The study design will attempt to account for the cultural-historical transitions of the NHS to support a systematic inquiry into the relationship between these changes and the changing identity of the individual medical student. Analysis of what James Gee calls 'Discourses' (or particular ways of thinking, acting and interacting) used by participants, in placement contexts and research interviews, provides insight into the qualities that make up the kind of person they want to become and be recognised as, hence providing insight into how they are orienting to the context and identifying with the healthcare professions.

In conclusion, the paper illustrates the ways the study design has taken into consideration an intention to conduct research that creates knowledge which can inform practice. That is, a key research aim is to understand learning as situated, within a system in turmoil, so we can better support students to learn and develop into effective healthcare practitioners. One aspect of learning that is becoming increasingly important for doctors of tomorrow, given the changing landscape, is what Annalisa Sannino refers to as 'transformative agency'. Transformative agency in this study would entail individual and collective action towards improved work and social relations in healthcare. In elaborating on the framework and methodology I hope to make the case that such a study will not only provide a unique situated understanding of the identity work and situated learning process within medical education in an English university but also will elaborate on principles and learning objectives that could support transformative agency to enable our future doctors to promote justice and social change.

## Keywords:

healthcare system, learning, situated learning

# Reflections on 'Non-traditional' Students as Higher Education Policy Constructs and the Implications for Student Identity in Work and Learning Contexts

February, Colette (University of Western Cape)

Are the origins of 'nontraditional' student constructs to be found mainly within the ambit of educational policy rather than the academic literature, and what are the implications for students within the context of the massification of higher education and flexible forms of teaching and learning provision for all students? Insights drawn from a case study of one South African university suggests that there are different ways of knowing, and naming, 'nontraditional' students at the University of the Western Cape, and the value in doing so facilitates new ways of thinking about transitioning categories of 'traditional' and 'nontraditional' students, both institutionally and beyond.

Worldwide, a greater and more diverse student population participates in higher education now more than ever before. The literature suggests an increase in 'nontraditional' students commonly regarded as *adult students*, *part-time students*, *working college students*, *widening participation students*, *new wave students*, *millennial students* and *undocumented students* as examples in this regard. Policy imperatives, such as widening participation and flexible provision, have influenced new kinds of student identities beyond the familiar and fixed student categories, of 'traditional' and 'nontraditional', conventionally in use. Problems of 'nontraditional' student identity are compounded when the language and nomenclature in higher education perpetuate only certain kinds of 'nontraditional' student constructs, denoting mainly an increased numerical presence for certain student groups while underarticulating blended student identities and corresponding educational needs for what is arguably a new and growing segment of 'nontraditional' students in higher education today. While 'nontraditional' students are widely reported in the literature as having both an increasing and prevailing presence in higher education internationally, scholarly interest in students constructed in this way appears to be relatively recent and disproportionate when compared with the literature pertaining to higher education students regarded as 'traditional'.

But who are these 'nontraditional' students in higher education currently, and are their identities by definition distinct from each other? What is currently denoted by this 'non-traditionalising' nomenclature when the literature progressively regards 'nontraditional' students as the 'new majority', the 'new traditionals' and the 'new normals' in higher education presently? How different are they from students who may still be conventionally categorised as 'traditional'?

For higher education ecologies worldwide, generalisations about 'traditional' and 'nontraditional' higher education students currently provide a window on only two main 'types' of student participating in higher education. However, new and transitioning student constructs must also be reflected in the language of higher education presently. When this is not done, the educational identities of all students in higher education are only partially understood and their educational experiences may be compromised.

Re-imagining nontraditional student constructs is recommended alongside discourses that make possible teaching and learning arrangements for all higher education students, who find themselves shaping their studenthood along an increasingly blended 'traditional - non-traditional' continuum in higher education presently.

Authenticating lifelong learning in higher education may be a way of not perpetuating certain kinds of 'non-traditionalisms' in the lexicons of higher education, and may usefully lead to ways of re-imagining contemporary student capability as part of a wider set of educational attributes in a more broadly-acknowledged student spectrum.

## Keywords:

higher education, widening participation, lifelong learning

# Fostering Potential through Work Integrated Learning: Applications of Behavioural Insights

**Foster, Lori** (North Carolina State University); **Raymond Patel** (MERSETA)

Access to meaningful work is a basic human right, as outlined in the United Nations Universal Declaration of Human Rights adopted in 1948. Work not only serves as a source of income and financial security. Under the right circumstances, it also provides an opportunity for psychological empowerment. It is an avenue through which people can develop personal agency, forming meaningful relationships with others and cultivating a sense of autonomy (freedom to make choices) and competence (mastering skills).

Given this, both “decent work” and “lifelong learning” play prominent roles in international discourse on sustainable development. In 2015, the nations of the world agreed to seventeen Sustainable Development Goals established by the United Nations. Goal #8 entails promoting “inclusive and sustainable economic growth, employment and decent work for all.” Goal #4 is to “Ensure inclusive and quality education for all and promote lifelong learning.”

The work world can be an important conduit for lifelong learning. Successful efforts toward Work Integrated Learning (WIL) trigger reinforcing relationships among goal setting, learning, skill development, and empowerment, creating a positive work cycle that benefits both the worker and workplace. However, efforts toward WIL are not always successful. Ineffective WIL programmes can backfire, leading to frustration and reductions in engagement and self-efficacy.

At present, much more work is needed to understand and promote meaningful WIL experiences. Because people are at the centre of WIL, insights from the social and behavioural sciences can be particularly powerful. Behavioural Insights aim to improve human welfare through policies and regulations formed from empirically-tested results, derived using sound experimental methods (Lunn, 2014; OECD, 2017). Behavioural Insights use theories and methods from disciplines such as psychology and behavioural economics to design and test people-centred interventions – solutions that take into account the way people process information, make decisions, think about, influence, and engage with their work, learning opportunities, and each other. Behavioural Insights also address organisational factors that affect learning and growth.

Behavioural Insights gained early momentum in the UK, Singapore, Australia, and the US and are increasingly being adopted by governments, regulatory bodies, and public organisations worldwide. An article published last year details the rapid spread of behavioural science initiatives around the globe from 2013 to 2016, pointing to international bodies incorporating behavioural insights into their work, including the World Bank, the United Nations Development Programme (UNDP), the European Commission, the World Economic Forum, and the OECD (Halpern & Sanders, 2016). Behavioural Insights have now reached many parts of the world such as Central and Latin America, Central and Eastern Europe, Africa, South Asia, and the Middle East. In 2017, the OECD published a comprehensive report describing more than 100 case studies from around the world, where Behavioural Insights were applied to a variety of policy and programming challenges, including those related to education and work behaviour. In the context of WIL, the social and behavioural sciences offer many relevant insights that should be more systematically and strategically embedded and tested. Examples include how to cultivate a “growth mindset” among learners and how to best understand, assess, and connect vocational interests with learning and work opportunities to the benefit of all involved.

Work, if aligned with an individual’s passion and interest, has the ability to act as a driver of social development, cohesion, and productivity. In a country such as South Africa where unemployment has exceeded 20% for more than two decades, it should be a national imperative to enhance the employment potential of people exiting learning to enter the labour market. People’s employment potential can be bolstered through a behaviourally informed integration of work and learning, facilitating both economic and psychological empowerment.

## Keywords:

work integrated learning, Behavioural Insights



# Occupations and Occupationalism: The Educational Dimension

**Gamble, Jeanne** (University of Cape Town)

An occupation is more than a job as a series of related tasks or activities. It is a social institution with features such as externality, objectivity, historicity and sociality that place it outside an individual performance, a specific job description or a particular workplace to give it enduring stability across time and place. At the same time, occupations are dynamic in the sense that they cannot be understood outside the work systems in which they are located. When work systems change, occupations are open to amalgamation at more general levels but, more frequently, to internal differentiation, narrower specialisation and even fragmentation.

This duality in the nature of an occupation makes it an attractive alternative to skill/competence as labour market currency that establishes a direct relation between education and work. Within occupational classification systems that allocate codes at different levels to families or groups of occupations, an individual occupation achieves generic universality across contexts by fitting into a larger group. At the same time qualifications can be pegged at higher or lower levels within an occupational group. The higher the level, the broader and more general the occupational qualification; the lower the level the narrower the knowledge and skill specialisation that provides the basis for the qualification.

Given the range and differences in work contexts to which a coded occupation would presumably apply, the question that immediately arises is whether one designated occupation can capture variations of the same occupation in and across industrial, commercial and service sectors. A second question would be about the educational implications of the version of 'occupation' adopted as the basis for qualifications and curricula. Broad and general or narrow and specific?

The paper explores these questions theoretically and empirically. The concepts of 'occupation' and a derived rhetoric of 'occupationalism' as an ideologically constructed category are investigated through reference to literature drawn from the sociologies of education, work, professions and occupations. This provides a series of frames for interpreting a section of the empirical findings of a recent research study undertaken in South Africa on 'Work and Qualifications Futures for Artisans and Technicians', commissioned by the Labour Market Intelligence Partnership (LMIP). The study investigated four mid-level technical occupations of which three were coded occupations in terms of the South African Organising Framework of Occupations (OFO) and classified as trades requiring an artisan qualification (although these qualifications were not yet available at the time of the study).

Although the reasons for simultaneous patterns of 'upskilling' and 'down-skilling' differed widely, significant internal occupational differentiation was found in each of the three sectors without formal qualifications. What was significant was that each of these sectors exhibited, within its spectrum of occupational variations, a version of a 'whole' occupation which was craft-based in the sense of requiring all-round expertise and control over work from start to finish. In the fourth sector where occupational territories were stable, well-defined and resistant to dilution or fragmentation, formal qualifications operated at a general level rather than at a narrowly specialised level.

In the final section of the paper, these findings provide the basis for addressing possible educational implications of using 'occupation' as the interface between work and education. It is concluded that the choices we make about the scope and level of qualifications will determine the extent to which the language of 'occupation' avoids knowledge and skill stratification. Relations will need to be forged between broad and narrow technical specialisation to prevent the educational dimension of 'occupation' from serving an empty rhetoric of 'occupationalism' and to enable entry into occupational communities as living entities that extend beyond the bureaucracy of numbers and levels in an occupational classification system.

## Keywords:

occupation, occupationalism, occupational qualifications, occupational differentiation, occupational community, knowledge and skill stratification

# Skills and Training Needs in Community Based Natural Resource Management

ID029  
PAPER AVAILABLE

**Gandiwa, Edson** (Chinhoyi University of Technology, Zimbabwe); **Antje Barabasch** (Swiss Federal Institute for Vocational Education and Training)

Community Based Natural Resource Management (CBNRM), a well-established relatively new discipline in sub-Saharan Africa that started in the 1980s, is concerned with the mutual co-existence and interaction of communities and wildlife, especially in areas outside of protected parks. Socially, many rural dwelling Africans, who interact more with nature than urban dwellers, still possess the skills required to sustainably manage their natural resources, including forests, through different techniques, such as harvesting of medical plants or the highly complex regulated resource use based on the productive and reproductive capacities of nature and wildlife. This knowledge is highly relevant for the sustainable management of resources and needs to be integrated into training programmes.

Research has shown that the utilisation of local knowledge is particularly relevant within wildlife and national parks, game reserves and outside protected areas including communal areas where often the conflict between wild animals, traditional farming and modern farming escalates. Southern Africa is rich in natural and wildlife resources as well as cultural heritage cultivated by local communities. Tourism development, sustainable natural resource management and sustainable agriculture are highly relevant sectors for local employment. It is within these sectors where skills development at all levels is needed and has to be viewed within a framework of CBNRM. Key issues which also make training essential, such as the increasing need for biodiversity monitoring using modern technology, information sharing on conservation, setting of sustainable utilisation quotas, tourism and international conservation initiatives, among others, need to be addressed within training programmes.

The paper addresses the complexity of the challenges related to wildlife and nature conservation and discusses the new skill demands within this field. It will point specifically to requirements for vocational or technical training based on a critical analysis of the current training provision, focusing on case studies from Southern African countries.

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## Keywords:

community based natural resource management, ecotourism, skills needs, vocational training

# Developmental Change Laboratories between University and Work in Health Sciences

**Garraway, James; Lloyd Christopher** (Cape Peninsula University of Technology)

The research reported on in this paper is within the broad theme of transformation of work practices and boundary-crossing between education and work, ultimately towards improved health/socioeconomic conditions. The field of Emergency Medical Science (EMS) is in flux as it changes from a more practical, rule-bound field of practice towards one in which practitioners are expected to make more theoretically-based diagnostic decisions and interact more extensively with both patients and other medical personnel. As things stand, students spend time in their curriculum under the tutelage of current workplace practitioners who act as mentors. However, the mentors are themselves products of the old style of training and do not necessarily support or value new students' diagnostic abilities, which may even be in advance of their own training; this can, in turn, be deleterious for patient health. There appears to be no quick fix or simple solution to this historically developed problem thus the so-called 'Developmental Change Laboratories' (Engeström & Sannino, 2011) were explored as a potentially useful approach for further investigation of disjunctures between university and work practices.

In short, the Change Laboratories are future-orientated spaces in which the wisdom of the participants, drawing from their past and current practices, is used to develop new and improved ways of practising. Participants are first made aware of the nature of the laboratory and what the expectations are from themselves and from the researcher. The starting point or first stimulus is the unearthing of contradictions that may exist within the system as a whole, and ensuring that these are fully understood by all participants. The next step is the collaborative identification of some form of initial in-between object which contains the fundamental contradiction of the activity (Virkkunen & Newnham, 2013) and may serve to coordinate, develop and improve on practices. Initially, this in-between object is poorly developed and defined and is termed a 'germ cell'. The purpose of successive meetings is then to develop and 'flesh-out' this germ cell, ultimately as a new way of working that can be experimented with and further refined. Such development is referred to by Engeström and Sannino (2007) as 'expansive learning'. The nature of the actions in the laboratory moves back and forward from more empirical evidence drawn from participants' experiences to more abstract understandings encapsulated in activity system diagrams. In between these are new ways of working, or tools, uncovered in the discussions. These three parts are displayed visually and developments from previous workshops are utilised as stimuli for subsequent ones (Virkkunen & Newnham, 2013). Information has already been gathered from academics, workplace mentors and students on difficulties which students experience in transitioning into work, which was used as a stimulus to promote discussion amongst participants of contradictions for the first Change Laboratory workshop. We have, furthermore, explored a possible 'germ cell', which encapsulates the fundamental contradictions between workplace mentors and the developing academic curriculum, that of workplace mentors, academics and students working collaboratively on complex problems drawn from the field. To this end, four workplace mentors have been employed to work with students and academics part-time in the university-situated skills laboratory. During our workshops (five between May and June 2017), we attempted to concretise and reveal the complex relations within the initial germ cell.

The researchers prepared to launch a Change Laboratory project by attending a one-week training programme with Professor Virkkunen (CRADLE) on 'Researching Change Laboratories'. This training was preceded by a one-day seminar with Professor Engeström and Dr Sannino, also from CRADLE, on Change Laboratories and expansive learning.

The number of analyses of the Change Laboratory process remains small (Virkkunen & Newnham, 2013) and our presentation aims to contribute to this body of knowledge. In our presentation we will report on the development or mutation of our initial germ cell, and the extent to which the group managed to create new forms of practice, an expanded object of the activity, and which factors constrained or enhanced this development.

## Keywords:

change laboratories, workplace learning, contradictions, emergency medical sciences

# Precarious Work in the Field of Academic Work

**Gleerup, Janne; Niels Warring; Birger Steen Nielsen; Peter Olsén** (Roskilde University, Denmark)

ID032  
PAPER AVAILABLE

Precarious work is a term often associated with working conditions for unskilled or low-skilled workers, vulnerable groups and migrant workers in the private sector. Reasons for this are obvious, since this is where the tendencies are first identified (Scheuer, 2011). However, it seems that high-skilled, well-educated groups in the labour market also experience changes towards more precarious work in terms of more temporary work contracts and generally more insecure work and wage conditions (Standing, 2009, 2011). In Denmark, trade unions of academics become aware that an increasing number of their members are affected as well. Full time academic permanent jobs are transformed into time-limited, project-based or part time jobs (Pedersen & Ribe, 2013; Bøttcher, 2016; Eilertsen, 2016).

This paper presents selected findings from an ongoing Danish Research Project, exploring how precarious work conditions begin to emerge in the academic part of the labour market. Unlike the majority of current research projects about precarious work, this study is mainly qualitative and seeks to explore the subjective dimensions of precariousness. The research questions focus on how tendencies towards precarious work are experienced and dealt with by affected academic workers. The analysis is inspired by an everyday life perspective (Lefebvre, 1991) aiming to elicit what precarity is about, when it comes to academics. How do the employees interpret and respond to their conditions and how do they cope with the insecurity of their work life? Are they well supported by their trade union or do the trade unions fail to grasp their specific needs and interests?

The paper first introduces the content of the research project and the meta-theoretical and methodological point of departure behind the research design. Next, we elaborate briefly on the notion of precarious work, arguing that the complexity of the phenomenon calls upon an interdisciplinary approach, viewing subjective experiences in the light of current changes on the labour market, interwoven with globalisation and the transformation of the Nordic welfare state model (Andersen, 2014; Mailand & Larsen, 2011). Thirdly, the paper presents empirical findings interpreted from a critical theoretical standpoint inspired by the German researcher Axel Honneth and his theory of recognition (Honneth, 2006). The paper concludes by asking openly how such new insights can qualify discussions and decision-making process needed, in order to face tendencies of precarity in the field of academic work.

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## Keywords:

precarity, academic work, lifeworld perspective, theory of recognition

# An Analysis of Skills within the Horticultural Sector in South Africa: A Value Chain Approach

**Govender, Dhiren** (University of Witwatersrand)

The South African floriculture sub-sector has been recognised as the one of the industries with the potential to grow and contribute positively to the country's economy (Netnou-Nkoana & Eloff, 2012). With the labour intensive nature of the floriculture sub-sector, employing in excess of 17 500 people, it is argued that it has the potential to become a major player on the global stage (Kaiser Associates, 2000). Although substantial human resource capacity is available locally, a shortage of skills in certain areas is likely to hinder the development of certain sectors (Visser, de Visser & Dijkxhoorn, 2012). Hence, a coherent strategy is needed to address skill constraints that may prevent the expansion of the pertinent sectors or the introduction of new activities such as skills development towards greener disciplines like horticulture (Maia et al., 2011).

This study will explore the circumstances under which participation in the global value chain facilitates skills development and economic growth in the horticultural sector in South Africa. The study will be limited to the floriculture sub-sector, a selected variety of flowers and the main production areas in South Africa, namely KwaZulu-Natal, Cape Town, Gauteng and the Limpopo provinces. This study will draw on the broad conceptual models of various experts on industrial policy, value chain upgrading, demand analysis, supply analysis, vocational education studies, the evolutionary economic school and their focus on institutions, including skills development institutions and how all this applies to horticulture. This will be done with particular interest in the interface between educational and training institutions and firms.

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**Keywords:**

horticulture, floriculture, global value chain, skills analysis development

# Student Learning at the Interface of University and Industry, Demonstrated in Final Year Civil Engineering Assignments

Gwynne-Evans, Alison (University of Cape Town)

ID034  
PAPER AVAILABLE

Engaged scholarship is an area of research that seeks to focus attention on the learning opportunities that occur at the interface of the academic and the wider community. A key component of engaged scholarship is that it recognises that expertise resides not only in academia, but in the world beyond the university. Much academic engagement with communities has focused on the benefits to the community of practice that come as a result of engagement with academia. Learning was seen to be directed from academia towards the benefit of the communities that academia engages with. In contrast, engaged scholarship intentionally recognises the mutuality of the learning experience: that learning occurs in both directions – from the university into the community and from the community into the university. This recognition changes the power relationships in the learning experience and allows parties to engage as fellow learners and builders of knowledge rather than as experts or beneficiaries.

This paper explores the opportunities for engaged scholarship that occur as a result of interaction between fourth-year civil engineering students at the University of Cape Town and the civil engineering companies the students engage with as part of their professional practice work experience. In the fourth-year module, Professional Practice, students are allocated to a current engineering project. Students are required to engage with the different parties managing the project. They need to assess the way in which engineering professionalism is demonstrated by the various parties and to show the degree to which their engagement with the project builds a critical awareness of the impact of engineering activity on the social, industrial and physical environment.

The students' engagement demonstrates engaged scholarship in the opportunity to engage with the professional environment – at the same time the engineering project is impacted by the engagement with the students and is potentially changed by the interaction. The learning process here can be depicted as the acquisition of expertise or professional experience primarily involving the student learning from the company. However, because the student is potentially at the cutting edge of new knowledge acquisition, there is also the potential for the students to contribute a new perspective within the work place.

There is also possible secondary benefit to the company. This may include the students' visit acting as an 'alarm bell' encouraging employees' careful adherence to safety rules and professional time-keeping. Students' presence in the work place might also be seen to encourage workers to work harder as they are aware of the additional pairs of eyes watching them. In turn, students are absorbing professional practice as a discourse and as a way of being in the world.

This analysis shows the potential of engaged scholarship to contribute as a methodology to developing knowledge in a context where student identity is transitioning into that of a professional. Engaged scholarship enables collaborative engagement and agency between different parties in the process of knowledge production in a mutually beneficial way.

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## Keywords:

engaged scholarship, professional practice, work experience, professional identity

# Learning to Deal with Psychosocial Strains at Hospitals

Hvid, Helge; Peter Hagedorn-Rasmussen; Henrik Lund (Roskilde University)

At Roskilde University, we were invited to join the initiative 'Expert Advice and Inspiration for a Better Psychosocial Work'. This three-year initiative, with funding of 135 000 euro, aimed for improvement of the psychosocial work environment within hospitals and authorities within the regions.

Our contribution – expert advice and guidance related to *organisational development and psychosocial work environment* – would differ from the advice of the hospital's internal consultancies. It would be research-based, but also contribute to improvement of the psychosocial work environment and the qualities of the hospital services. We provided the hospitals with a framework of three interconnected, but distinct, research-based concepts:

- **Job crafting:** an important part of the actual organisational development is the jobcrafting which everyone performs as part of their jobs (Wrzesniewski & Dutton, 2001; Berg, Dutton & Wrzesniewski, 2007)
- **Rhythm analysis:** inspired by Lefebvre (2012), according to this concept, the daily rhythms of the work organisation are crucial for social support and learning opportunities (Hvid, 2010; Hvid, Lund & Pejtersen, 2008)
- **Relational coordination:** inspired by Gittell (2009), according to this concept, shared goals, timing of work, shared knowledge and mutual respect among different professions are crucial for performance and well-being.

Our assumption was that advice and guidance is an intervention that induces organisational learning, if facilitated. Employees and managers engaged in dialogical and reflexive practices, associated with the expert advice and guidance, may well lead to changes in work organisation. The aim was to pave the way for incremental changes in order to increase organisational resilience (Hagedorn-Rasmussen et al., 2016; Sutcliffe & Vogus, 2003), enhance the ability to learn, adapt work organisation to environmental change and mobilise coping strategies and resistance related to work strain. The three concepts had to be translated (Røvik, 2007) into the realities of the specific work organisations. For conceptual contextualisation, we conducted interviews with employers and employees at their work places. Subsequently, we conducted one- or two-day workshops, focusing on possible (incremental) changes. Furthermore, our ambition was to create a two-way knowledge-production: from academia to practice by means of dialogical and reflective practices; and from practice to academia in order to gain practical knowledge, thus developing the coherence of the conceptual framework.

To date, we have engaged with five workplaces: a hospital ward for children, a large district psychiatric ward, an emergency department of a hospital and two medical sections of a hospital.

**Preliminary results:** The theory of jobcrafting draws attention to and respect for the actual performance of work. In work settings, where employees are working closely together and using not only their professional knowledge, but also their personalities, it seems to be very important to create a public appreciative of how employees craft their jobs. A means to create this public attention is the creation of rhythms in work that make it possible to reflect on and discuss one's own and colleagues' way of performing work.

In hospitals, the division of labour between professionals and the ability to create relational coordination still is a critical factor for well-being, quality and productivity. A general public, formal and informal – about content of work of the different professions – is important. To create this, it is necessary to create rhythms that make it possible for employees to meet and to communicate.

## Keywords:

job crafting, rhythm analysis, relational coordination, incremental intervention

# Knowledge Democracies

ID037

**Harman, Kerry** (Birkbeck, University of London); **Linda Cooper** (University of Cape Town); **Hongxia Shan** (University of British Columbia)

This symposium engages with the conference question of 'What is transformative (or not) in RWL research?' through a collection of papers grouped under the theme of 'knowledge democracies'. We are a group of researchers interested in social justice and equality and each of us is interested in the potential of workplace learning research as a site for more democratic approaches to knowledge production. In taking up and working with a 'knowledge democracies' theme, we anticipate the symposium will provide the space to connect and explore ongoing collaboration for those working on projects that challenge current knowledge divides such as: North/South; West/rest, active/passive; knowledge/ignorance; academic/practical. This will include connecting with useful literature (e.g. Cooper & Walters, 2009; Grau et al., 2017; Shan & Fejes, 2015), learning from the experience of those who have developed projects which incorporate activist research techniques, as well as the opportunity to join an international network exploring the 'politics of knowledge'.

The following questions will be explored in the papers and symposium discussion:

How ontological and epistemological approaches to knowledge may entrench the West as the epistemic centre and what needs to be done methodologically to make space for, if not to flatten the ontological status of different ways of knowing at work in the context of migration and globalisation.

Who is able to speak in accounts of learning at work; who and what is able to be heard; who and what is visible and not visible; and what gets to count as experience and learning? And what are the implications for knowledge production in the field of workplace learning?

How might we produce more democratic accounts of knowledge and learning that take into account not only different knowledges but different ways of understanding knowledge and its relationship to experience? And how might this contribute to social transformation and change?

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## Keywords:

democratic politics, knowledges, equality, change and transformation



# Youth Workforce Development in South Africa: Analysing the Nature of the Evidence from Programme Evaluations

**Hewlett**, Lynn (University of Witwatersrand); **Carmel Marock** (Singizi Consulting)

Interventions in the form of funded programmes are a widely used strategy to try and improve youth employment in many countries. Many of these interventions target skills development and support formal education-to-work transitions. Programmes aim to assist youth to seek employment opportunities, become more employable (through education and training), make transitions from education to work and/or create their own employment. The specific objectives of these programmes vary; however, all assume that young people will be able to either access employment as a consequence of the programme and/or access further study and training opportunities resulting in qualifications that are more marketable.

South Africa has followed a similar trend in implementing youth employment programmes focusing on supply-side interventions. These include school to study or work transitional programmes, programmes focused on enhancing work readiness and supporting work placement, programmes supporting the development of occupational competence (learnerships, artisanships, graduate development programmes), those enabling entrepreneurial development, and those that create public employment opportunities. There has been less evidence of what works as successful interventions, particularly reviews that go beyond evaluating the programmes in terms of conventionally used summative evaluation criteria relating to impact and value for money. This absence of evaluative work in South Africa is also because many programme evaluations are not available in the public domain for scrutiny. Understanding the nature of the evaluative work that is being carried out in this sector, and ensuring that these results are credible, valid and relevant, is crucial to ensuring that the central challenge of youth unemployment is being addressed through these programmes. In addition, it is important to be able to identify the lessons that can be learned from the interventions.

For this study the researchers worked with more than 40 summative evaluation reports on various youth programmes. This paper reports on a meta-evaluation examining these evaluation reports from two perspectives: whether they provide useful information on the effectiveness of the intervention and whether they are credible as evaluation studies. Answering these questions requires analysis of the data presented and a consideration of how it has been analysed against a set of defined quality criteria which enable conclusions to be drawn about the efficacy of the youth employment programmes. In developing these criteria, we drew on frameworks that have been developed to review youth employment interventions particularly the ILO and PEPNet and other studies examining evidence from evaluations and research on youth employment and youth employment interventions (USAID and World Bank). These studies used the common summative evaluation criteria relating to impact and value for money, but some also add criteria concerning innovation and possibilities for replication.

Analysing the evaluations using these criteria showed that many did not provide the necessary data for conclusions to be drawn about the efficacy of the youth employment programmes. This was in part due to the poor quality of available data and analysis, the research designs and the timing of the evaluations. While these criteria point to the poor quality of many evaluations that need to be addressed by those commissioning and undertaking the studies, this paper raises broader questions about the usefulness of the evaluative criteria for providing potentially useful information about the interventions. Other reports contained information and insights into the interventions that were not well-captured by the framework used to evaluate them and one-off nature of these evaluations. This paper examines what could be learned from these studies that was not well captured in the summative evaluative criteria used and also considers how the design and conduct of these evaluations could be approached to allow for better quality data to inform the development of youth employment programmes.

## Keywords:

youth employment; programme evaluations; South Africa

# Challenge Lab – Learning by Engaging in Society’s Sustainability Transitions

**Holmberg, John; Johan Larson** (Chalmers University of Technology)

ID039  
PAPER AVAILABLE

The United Nations (UN) 2030 Agenda for Sustainable Development with its 17 Sustainable Development Goals devotes Goal 4 specifically to education, but sustainable development is altogether a large societal learning process. Education with its institutions therefore has a key role to play. The different aspects of this role are discussed within education for sustainable development (ESD) and several interesting examples of real-world ESD learning initiatives have been developed and realised. Yet they are rarely evaluated in depth to understand why, how and what kind of learning that occurs.

In this paper, Challenge Lab (C-Lab) is analysed, where students are provided support and space to engage with complex real-world sustainability challenges in society. The results indicate that C-Lab is in line with the ESD ambitions, but focuses particularly on perspective awareness, experimentation, leadership and the unique role students can play in society’s transition. The results also indicate that C-Lab relates to education and learning concepts of *expansion, dialogue, values, authenticity, scaffolding, reflection*. The backcasting process used at C-Lab gives the expansion a direction toward sustainability, which is also the ambition of ESD.

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## Keywords:

sustainability, education for sustainable development, challenge lab

# Threshold Concepts in Radiation Physics Underpinning Professional Practice in Radiation Therapy

Hudson, Lizel; Penelope Engel-Hills, Christine Winberg (Cape Peninsula University of Technology)

Radiation therapy is a scarce skilled profession globally, and more radiation therapists need to be trained in order to address this shortage, particularly as healthcare changes from the curative paradigm of the 20th century to a more preventative model in the 21st century. Imaging and treatment modalities are central to this model and are driving that change to the benefit of the patient. Medical imaging and oncology play a key role in understanding complex biological systems and are dependent on interdisciplinary knowledge (e.g. physics, human biology, computer sciences) to extract that information. To the layperson, professional identity seems closely bound to what a professional can do, but professional competence is underpinned by what professionals know, and it is the engagement with specialised knowledge that creates a professional identity. Central to radiotherapy practice is the knowledge that enables accurate targeting and treatment of tumours, while ensuring maximum protection of the surrounding normal tissue.

This paper argues that without a deep understanding and internalisation of threshold concepts in Radiation Physics, radiotherapists are unlikely to achieve the necessary level of accuracy and consistency in treatment. Potential threshold concepts in radiation physics were identified and their relationship to professional practice in radiation therapy explained.

Key concepts, while important, are not necessarily synonymous with threshold concepts. Key concepts are important building blocks for the acquisition of disciplinary knowledge, but what sets threshold concepts apart is their importance to professional knowledge, identity and competence, as well as opening the way for future learning possibilities. Concepts such as how the radiation beam spreads out (beam divergence) and how the distance from the ionising source affects the beam (inverse square law) can be challenging for students entering higher education and experiencing their first clinical placements. Mastery of these (and many other) concepts comprise the building blocks of radiation therapists' learning towards professional practice in the care of the cancer patient. This study thus aimed to address the following research questions: 1) how can actual or potential threshold concepts in Radiation Physics be identified, and 2) how are these concepts related to Radiotherapy clinical practice?

Transactional curriculum inquiry was used as a methodological approach that provided opportunities for students and subject experts to engage in extended dialogues to uncover why particular concepts might be troublesome, as well as how mastery of these concepts might be achieved. By studying the Radiation Physics curriculum documents, the students' study guides, assessment tasks and tests of first-year students, a number of concepts were initially identified. It was also important to elicit information from academic and clinical staff both to triangulate the student data and to hear all voices on the threshold concepts in Radiation Physics and the clinical practice of radiotherapy. The multi-voice perspective was an important ethical consideration towards the benefit of all participants.

Identifying and separating non-threshold concepts (i.e. core concepts and building blocks) from threshold concepts is challenging. It requires 'mapping' the key concepts in the field to form a coherent whole, and then identifying those concepts that are particularly 'troublesome'. It was clear from this study that threshold concepts are indeed 'troublesome', often (as in the case of the inverse square law) involving both complex mathematics and physics calculations. The findings suggest that the typical progression in professional education that assumes the application of theoretical concepts to practice, might not be the best way to acquire the threshold concepts that lead to transformed practice. This study has made a contribution to the identification of threshold concepts in professional fields as a reciprocal relationship between concept and practice was established. While the study was conducted in a particular Bachelor of Science in Radiation Therapy programme, it has implications for how academic and clinical educators in other contexts might facilitate students' acquisition of the threshold concepts that underpin professional practice.

## Keywords:

radiation, radiotherapy, transactional curriculum

# Re-employment after Profession Change

ID041

**Ikonen, Leena** (University of Jyväskylä, Finland)

The aim of this ongoing grounded theory study of the profession change process (PCP) was to gain insight into the profession change process of adults enrolled in vocational education programmes and on this basis, to create a model of profession change process as well as to examine re-employment after switching to another profession. The following research question is addressed: What are the possibilities for re-employment after profession change? Participants in the study had already changed careers and were enrolled in vocational training or were recently finished their studies. They had shifted to another profession through vocational adult education.

This research was concerned with changes in working life in general and with desire to change at an individual level. The context of this study is vocational adult education and employment in Finland. Globally, an insecure economic situation reflects in the labour market, influences employment negatively and escalates structural unemployment. Changes in the labour market or a personal desire to change one's work forces employees to maintain their skills, acquire suitable knowledge and adapt to labour market needs. Changing one's profession is one option. The working world itself is changing and work can be combined in different ways: both part-time work and fixed-term work have increased; entrepreneurship, seasonal work and crossing between several *professions* have also become more common. It is no longer typical to work in the same profession or with the same employer throughout one's career. Furthermore, career development can be seen as a life-long process.

In terms of methodology or research design, pre-research consisted of initial information from 136 student applications. Ten interviews were carried out with participants ranging from 29 to 50 years. Participants had all switched to another profession through vocational adult education. Transcribed interviews were analysed using grounded theory and an open-coding procedure first, line by line. Selective coding followed by constant comparison, combination and qualifying of the material until saturation. This research aimed is to gain insight into a basic social process and to generate a new substantive theory.

Changing profession is currently a common phenomenon in Finland. Many employees are updating their qualifications and re-evaluating their competences. Sudden unemployment or radical change at work can cause a profession change. Change can also be inspired by personal motives. Changes may accumulate when a person undergoes several changes in life concurrently, with PCP only one of a number of changes.

One of the main categories under study is *Returning to work*. Re-employment is an essential factor in the profession change process. PCP includes several sub-processes, which follow each other in chronological order, but may also move back and forth. When switching to another profession, one's career status and/or educational status can move either up or down, depending on one's previous education and work position. Due to a profession change, an employee can move from an expert role to a novice role at work. Varied concrete alternatives of re-employment are presented.

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## Keywords:

grounded theory, profession change process (PCP), re-employment, vocational adult education

# Experiences of Meaning in Precarious Academic Work – Initial Analysis of an Ongoing Qualitative Study

Jakobsen, Anders (Roskilde University)

This paper presents an initial analysis of interviews for an ongoing PhD research project ("Meaning in precarious academic work") at Roskilde University, Denmark. The purpose of the project is to investigate the subjective experience of precarious academic work, and the aim of the paper is to present an initial analysis as a basis for conducting the remaining interviews.

The project works within the tradition of critical theory, combining both subjective and institutional levels, historical and synchrone dimensions with an immanent understanding of critique and a critical knowledge interest (compare Nielsen, 2015 and Jakobsen 2012). In the project, work is theoretically understood as a central form of human activity and expression, as it was originally developed by Marx, especially in his early writings, and later developed and discussed within critical theory (importantly Negt, 2001, and also, for instance, Honneth, 1994, 2003).

Work in general is currently in transformation, academic work in particular (Boltanski & Chiapello, 2005; Sennett, 2006, 2008; Etzkowitz & Leydesdorff, 2000; Gibbons, 1994). Changes are also encompassing the labour market institutions and the welfare state (Jensen, 2007; Hansen, 1998). The project investigates the subjective dimension of these changes, focusing on what Kamp (2012) termed the critical tradition of research in meaning in work. The main interest is thus not how "meaning" may be created (through management), but in investigating the reasons for its absence (compare Jakobsen, 2017) and drawing upon Becker-Schmidt's (1982) understanding of ambivalence in the experience of work. These recent transformations of academic work are understood as "precarisation" (Standing, 2011; compare also Castel, 2009; Dörre, Kraemer & Speidel, 2004; Castel & Dörre (eds.) 2009); Sander, 2012; Brodersen et al., 2016, Pedersen & Ribe 2013).

Standing (2011) described the precariat as a "class-in-the-making", if not yet a "class-for-itself" in the Marxian sense, but one that at the same time lacks both "work based identity", "codes of ethics", "norms of behaviour" or the experience of a "solidaristic labour community". In this sense, the project investigates, with academic work as a specific instance of precarisation, whether this thesis of a "class-in-the-making" is plausible, and if it is, which processes point in this direction.

The following three questions were explored. Firstly, how do academics working under precarious conditions identify their work situation (for instance "precarious" or "independent"), and how do they experience their work situation as either a possibility or barrier for finding meaning in work? Secondly, which form does this meaning take (for instance, professional ideals or societal utility) and how is the relationship between the meaning of work and the necessities of income and security experienced, for instance as accommodation and identification, but also as conflict and ambivalence? Thirdly, what types of critical concepts, political identifications and forms of strategies for improvement are embedded in their experiences and practices, for instance on the one hand, professional, independent and individual types, or on the other, labourist, collective and political ones?

My initial analysis shows different experiences of the relationship between precarious working conditions and finding meaning in work, which I organise around three interconnected dimensions, in which the participants experience possibilities and identity or conflict and ambivalence. The paper concludes with a discussion of the relevance of these experiential types of critical concepts, political identifications and forms of strategies for the possible emergence of an academic precariat as a class-for-itself.

## Keywords:

precarisation; academic work; meaning of work; ambivalence

# Understanding the Interface between South Africa's Pulp and Paper Sector and Skills Required to Adopt Biorefinery Technologies: A Case Study

Jenkin, Nicola (University of Witwatersrand)

The objective of this poster is to outline an educational assessment, with a specific focus on the roles of the CSIR, University of KwaZulu-Natal and Durban University of Technology in supporting innovation around circular water economy interventions in the pulp and paper sector of South Africa. Two components are presented: 1) an overview of the South African education and training system that supports the pulp and paper sector and the role of the institutions in relation to the sector; and 2) key points identified in an examination of specific skills and training interventions undertaken by these institutions in relation to the South Durban Basin, in which two pulp and paper mills are situated.

The South African pulp and paper sector is a significant contributor to the country's economic profile. In addition, it is a major contributor to the country's manufacturing impact on the environment. It is a large-scale user of water. As such, a focus for this poster is on the sector's consumption of water and operational mitigation practices, and the skills and knowledge required to mitigate these practices. The argument for a quadruple-helix framework is proposed, whereby collaboration and transference of skills and knowledge between actors (business, government, research institutions and civil society) throughout the global value chain are considered necessary to radically transition the sector towards a circular water economy. For the purposes of this poster, a case study outlining the role of the identified institutions will be assessed in relation to how they facilitate and/or could function within a quadruple-helix framework of collaboration and up-skilling within and to support the sector.

In conclusion, the actor interactions, role of the research institutions, and improvements to achieve and implications of the quadruple-helix proposition will be presented.

## Keywords:

green skills, circular economy, pulp and paper, water

# Quality of Everyday Life Supported by Digital Services – A Landscape of Practice Perspective

Johansson, Lars-Olof; Ulrika Lundh Snis (University West, Sweden)

This paper will report on two service design projects (Free2Ride and HITTA) conducted between 2009 and 2012. The major idea in the first project (HITTA) was to design and develop a digital service that could be used by people suffering from dementia and their next of kin (Johansson & Lundh Snis, 2011). The second project (Free2Ride) was a project with the aim to design and develop a digital service to be used by members of equestrian clubs (Johansson et al., 2016). In other words, we tried to design a digital service to be used in everyday life situations. One of the fundamental principles of the projects was to put through value co-creation in the design of the digital service (Pralhad & Ramaswamy, 2004). Actors involved in the co-creation were developers, users, consumers, and researchers. The value co-creation that took place was based on service design thinking as presented by Barrett et al. (2015): "Design thinking adopts a largely human-centred approach, recognizing an iterative process that moves from generating insights about end users to idea generation and testing to implementation". In the two projects, the researchers were engaged and actively involved in the process of designing a novel digital service by combining digital and physical products that enhanced the everyday life situation of a specific group of stakeholders.

Active engagement and involvement by researchers are not new; see for instance action research (Baskerville & Myers, 2004), action design research approach (Sein et al., 2011) or the engaged scholarship approach (Van de Ven, 2007; Mathiassen & Nielsen, 2008). In all the above-mentioned approaches, the researcher deals with real-world problems in order to be practical and relevant. Engaged scholarship is primarily concerned with how academic researchers can be involved with practitioners in ways that meet their often diverse needs (Van de Ven, 2007). Engagement in the research is described as a process that involves "negotiation and collaboration between researchers and practitioners in a learning community; such a community jointly produces knowledge that can both advance the scientific enterprise and enlighten a community of practitioners" (Van de Ven, 2007: 7). In the two projects, three groups of stakeholders were involved: users, developers of the digital service and researchers. As researchers, we saw the possibility to combine insight from digital service design in practice with theoretical insights on digital service design and boundary crossing. The developers saw an opportunity to design a digital service grounded in the needs of the users, and the users saw an opportunity to enhance their everyday life with a digital service. The knowledge sharing process in the design of digital services is important (Lusch & Nambisan, 2015). In order to share knowledge, knowledge needs to be translated between actors (Carlile, 2004), transferred (Carlile, 2004) and negotiated (Van de Ven, 2007), which are the fundamental building blocks of learning. One approach to understanding learning is from a socio-cultural learning perspective. In the socio-cultural perspective, boundaries are understood as a dialogical phenomenon that gives rise to discontinuities in interaction and action (Akkerman & Bakker, 2011). Taking part in a learning community is about crossing knowledge boundaries between involved stakeholders such as developers and users. For example, there could be discontinuities during interaction in service design projects such as HITTA and Free2Ride, due to differences in knowledge, background, experiences and skills.

In this paper, the researcher takes a closer look at the interaction during the knowledge-sharing process between users and developers. Therefore the research question is: How can boundary crossing be supported during co-creation of innovative digital services? The aim of the paper is *to propose a set of implications* grounded in the roles of the users and developers and how they *support learning in the value co-creation* of innovative digital services. The contribution of the article could be used to discuss knowledge and competence of the developers that are involved in value co-creation. Akkerman and Bakker (2011) have identified four potential learning mechanisms that can take place at boundaries between different actors during co-creation: *identification*, *coordination*, *reflection*, and *transformation*. Therefore it becomes natural to apply the analytical lens of learning mechanism (Akkerman & Bakker, 2011) to complement the existing literature on digital service design.

## Keywords:

boundary crossing, digital, design

# Transforming Teaching and Learning through Feminist Pedagogy

**Johnson-Bailey, Juanita; Nichole Ray** (University of Georgia, Athens, Georgia)

In her seminal text on the history and future of feminism, Estelle Freedman (2003: 7) cogently articulates the overarching purpose of feminism as ideology and social movement: "Feminism is the belief that women and men are inherently of equal worth. Because most societies privilege men as a group, social movements are necessary to achieve equality between women and men, with the understanding that gender always intersects with other social hierarchies." Feminism is both a social justice movement, as well as a framework through which to understand women's experiences in male-dominated societal institutions. As a movement to promote equality between women and men, feminism has served as one of the most effective and liberatory social movements in the US and abroad (Freedman, 2003). With a foundational focus on issues such as equal pay, reproductive justice, access to women's healthcare and the like, contemporary feminist activists have transformed the ways in which women and men experience societal institutions, including higher education.

As African American feminist educators, we are committed to a model of feminist teaching that supports goals of equity, diversity, and social change. The purpose of this roundtable discussion is to provide participants with effective strategies to build and sustain feminist and social justice-oriented adult learning communities. More specifically, we focus on women as teachers and learners and, as such, we ground our workshop in the principles and practices of feminist pedagogy (Crabtree, Sapp & Licona, 2007; Johnson-Bailey & Lee, 2005; Maher & Tetreault, 2001; Ray, 2010).

We propose that feminist pedagogy is a viable framework through which to create and foster learning environments that centre the voices and experiences of women and other marginalised learners. In addition, feminist pedagogy foregrounds the development of critical thinking skills, building a community of learners, and consciousness-raising through linking personal experiences to structural issues (Hooks, 2003). A feminist classroom is also one in which the adult educator facilitates a climate and learning experiences that can facilitate empowerment among women learners. In addition, feminist educators develop strategies such as creating space for students to make connections between the personal and political. Feminist pedagogical practices can have a tremendous influence on transforming the lives of students and educators, as they can support inclusive learning environments and prepare students for a diverse, changing and global society.

This roundtable discussion is designed for adult educators who are committed to building and sustaining classrooms grounded in social justice, while specifically addressing the needs and experiences of women learners. The discussion will be facilitated in such a way that can appeal to both junior and senior scholar-educators who are interested in feminism as it relates to working with diverse adult learners. Roundtable participants will have the opportunity to critically reflect on their teaching practice, explore the intersection of race and gender in the classroom, develop a teaching philosophy rooted in feminist thought, and participate in activities designed to aid them in building and sustaining a feminist learning community.

## Keywords:

feminism, pedagogy, teaching, critical thinking



# Researching Practice and Practising Research – A Hands-On Approach to Researching Innovation Practices

Juelsbo, Tue; Charlotte Wegener (Aalborg University, Institute of Communication and Psychology)

This paper is about research practice and researching practices. Based on Orlikowski's work, we investigate practice as a phenomenon, practice as a theoretical perspective and practice as a fundamental philosophy. Referring to practices throughout the paper, we will write about 'practising' – real-life, real-time doings and sayings in specific places and times. Based on a year-long research project in a global industrial manufacturer, this paper explores how the research project was designed and executed drawing on the ideas of action research and change laboratories (Engeström, 1996). Through utilising practice theories, we seek to understand innovation practices by describing and analysing actors' activities, interactions and performances. In short, we seek to understand the innovation practices that actors (re)produce in working life. We argue that practice theory applied on the field of innovation lets us access *and* affect organisational reality. It does this from a perspective that grants agency to the participants, describes and seeks to understand their personal and shared experiences/reality and in a sense – gives us access to the 'nitty-gritty' of everyday life as lived by participants in organisations. This is the space of potentiality in between an innovation strategy or policy and the actualised results. This practice theory-approach lets us grasp, shape and participate in the practices of the industrial manufacturer as innovation researchers and holds significance for both innovation practice within the concrete organisation as such and more generally informs how we might conduct research within the field of innovation research. We draw on the work of Feldman and Orlikowski (2011) to differentiate and nuance the notion of 'practice' from three different perspectives:

*Practices matter!* 'Practice as phenomenon', focusing on what happens 'in practice' as opposed to 'in theory'. The researcher's curiosity is directed towards experiences and practical activity. Practices matter and they should be empirically engaged with to understand and improve the innovation processes and practices of organisations.

*Practices shape reality!* 'Practice as perspective', focusing on social phenomena using practice theory as a powerful lens to understand social reality. Practices shapes reality and the recurrent everyday activity has structural consequences that are produced and changed over time. This position is suited to address organisational phenomena that are inherently relational, dynamic and emergent – like the innovation processes we are studying.

*Practices are reality!* 'Practice as philosophy', representing an ontological commitment and a normative social science: all social life is constituted in and through practices and to study organisations one must ground one's studies ontologically, theoretically and empirically in ongoing, lived practice.

A practice perspective on innovation is relevant because innovation is a powerful discourse in many organisations. It is intricately woven into everyday practice of work life, affected by and affecting epistemological and ontological issues of professional skills, work practices and values (Wegener, 2016). At the same time, the term 'innovation' is notoriously ambiguous and lacks a single definition or measure. Although innovation research is increasingly interested in the 'social' dimensions of innovation, the product, policy or management levels are still dominant. Innovation can be explored from a relationally-based and process oriented perspective situating innovation in everyday practices. For researchers and practitioners interested in actual innovation processes and the practices that constitute innovation, practice theories offer several interesting perspectives.

'Practice as philosophy' represents an ontological commitment and a normative social science: all social life is constituted in and through practices. Practices are reality. This was not without consequences: these studies are grounded ontologically, theoretically and empirically in ongoing, lived practice, including research practice. The paper sums up on potentials and pitfalls of this stance and suggests strategies for a hands-on approach to researching innovation practices.

## Keywords:

research, practice, innovation

# Negotiating Professional Knowledge and Responsibility in Telecare – Inter-Professional Cooperation across Sectors

Kamp, Annette; Agnete Meldgaard Hansen (Roskilde University)

ID047  
PAPER AVAILABLE

Telecare is a growing practice in many western countries and is promoted as a new mantra for reforming the health and social care services, currently under pressure from demographic changes, and increases in people suffering from chronic diseases. Following a long period dominated by New Public Management inspired reforms aiming at rationalisation and marketisation, telecare technologies are envisioned as leading to new and cleverer forms of retrenchment, higher quality, empowerment of clients/patients and work that is smarter and more qualified (IDA & KL, 2008). In Denmark telecare has been a prioritised focus area within welfare state policy and across government levels since 2008, which may explain why Denmark is one of the countries, where telecare technologies are in most widespread use in daily practice (Regeringen KL og Danske Regioner, 2016). Telecare is defined as diagnosis, treatment and monitoring among doctors, nurses and patients that is mediated through ICT and without face-to-face interaction. It is currently being used in the care for clients/patient suffering from COPD, chronic heart diseases, diabetes, chronic ulcers, psychiatric sufferings etc.

This paper critically explores how the use of telecare technologies may change conceptions of care, imply redistribution of work and responsibilities, and challenge inter-professional relations and professional identities. Our point of departure is that telecare must be studied contextually, in order to address the paradoxes and tensions that appear when this specific societal framing takes the cultural and organisation context into account. Previous research on the implications of telecare for professional work primarily focus on telecare solutions used to provide care to clients at a distance (e.g. Oudshoorn, 2012). They stress how virtualisation may alter the character the social contact and the observations the professionals are able to make (Mol, Moser, & Pols, 2010; Van Hout, Pols, & Willems, 2015) and how the validity of the patients' own measurement and observations becomes a new factor of uncertainty (Oudshoorn, 2008).

Telecare may however also be used as means of establishing virtual spaces for cross sectoral inter-professional cooperation. Telecare is used to allow services to move from the costly, specialised hospital departments to the primary health sector, where less specialised personnel take on tasks, while having access to specialised competences. This paper is based on an ongoing ethnographic field study carried out of this type of telecare: Tele-ulcer. The study forms part of a larger research project on telecare and ambient assistive technologies and their implications for working life. Tele-ulcer is a technological arrangement that has been used in all Danish municipalities (the local level) and regional hospitals (the central level) since 2012. Nurses in the primary health sector discuss their treatment of chronic ulcers with wound specialists – tele-nurses – at a specialised hospital department through an ICT based system. This study points out how the use of tele-ulcer technologies may change nurses' position in the interdisciplinary network that evolves around the clients, and redistribute responsibilities in practice (Kilminster & Zukas, 2013). Knowledge sharing through ICT often implies standardisation and decontextualisation (Kamp & Dybbroe, 2016; Timmermans & Epstein, 2010). Consequently, introduction of telecare technology may imply tensions and contradictions between different forms of knowledge. While the virtual space offered by tele-ulcer certainly offers possibilities for learning and professional development, it also challenges meaning and identity and implies tensions in inter-professional relations, when negotiating local embodied knowledge of the client versus the abstract, standardised knowledge of disease. The study addresses how nurses are actively engaging in a subjective and emotional process of framing and using the technology. Technologies are interpreted and shaped, when applied in specific contexts, and may be used in innovative and unexpected ways (Halford, Obstfelder, & Lotherington, 2010; Orlikowski, 2007). The paper points at how the local nurses use telecare in unintended ways, assuming the role as network operators, who navigate in order to secure and coordinate the clients' contacts with different professionals in a relatively fragmented health-care system. It ends up discussing the paradoxical 'hyperresponsibility' that seems to result from this kind of telecare.

## Keywords:

professional identity, care work, knowledge, hyper responsibility, inter-professional relations

# The Great Licensure Assumption: Deprofessionalisation and Hybridisation of Engineering in Canada

Klassen, Michael (University of Toronto)

Engineering has been a regulated profession in Canada for nearly 100 years, with exact dates varying by specific provincial jurisdiction. In recent decades, macro pressures of globalisation and economic competition, combined with increased student enrollments in university engineering programmes, have caused changes to the profession at large, with profound implications for individual professionals in the workplace. This paper argues that engineering in Canada, and specifically in the province of Ontario, is undergoing processes of both deprofessionalisation (Haug, 1975; Scanlon, 2011) and hybridisation (Noordegraaf, 2007, 2015), demonstrated by the small and declining proportion of engineering graduates who obtain licenses to practice. Using secondary data from macro government surveys of university enrolment and labour market outcomes (Lavoie & Finnie 1998, Prism Economics and Analysis, 2016) and published meso and micro qualitative studies of individual engineers' learning at school and work (Adams, Livingstone & Sawchuk, 2016; Stevens, O'Connor, Garrison, Jocuns & Amos 2008), I will show how neo-Weberian perspectives can combine with Noordegraaf's concepts of situated and hybrid professions to explain the complex changes taking place in engineering in Canada. I will use these data along with publicly available information from national associations of professionals (DeVita, 2012; Professional Engineers Ontario, 2016) and academics (NCDEAS, 2016) to interrogate the roles played by the typical actors such as the provincial government, the regulatory bodies, universities, and organisations which employ engineers.

The paper firstly explores the core idea of professions as a means to achieving different types of closure: exclusionary, demarcationary and social. I use the work of Mike Saks (2010, 2012) to clarify the neo-Weberian approach to studying professions. Second, I look at how the engineering profession in Canada obtained closure through a regulative bargain with the state, aided by the symbolic and structural role of universities as barriers to entry. Third, I present growing evidence of challenges facing the profession, namely a declining proportion of engineering graduates obtaining licensure, and changes to the career structure and labour market outcomes for engineers. Fourth, I draw on the work of Mirko Noordegraaf (2007, 2015) to explain these changes, showing how deprofessionalisation and hybridisation are distinct but complementary processes that are driven by pressures inside engineering companies and by dramatic growth in the higher education sector. Finally, I investigate some of the profound implications of these changes for the profession's knowledge base, legitimacy and authority, such as the growing tensions between licensed and non-licensed engineers. I also raise questions about the role of key actors in maintaining the key structures of regulation, licensing, accreditation and education.

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## Keywords:

engineering, licensure, professions

# Technology at Work – Supporting Workers and Institutions in Changing Times with Transformative, Reflexive Methodologies

**Kloetzer, Laure** (University of Neuchâtel, Switzerland); **Laura Seppänen** (Finnish Institute of Occupational Health); **Sarah Hean** (University of Stavanger, Norway); **Edwige Quillerou** (INRS)

To research learning and collaboration at work, intervention methodologies based on Activity Theory have been demonstrated to provide both transformations of work organisations and valuable scientific knowledge (Engeström, 1987; Clot, 1999). Among these intervention methodologies are the well-known systemic Change Lab approach (Virkunnen et al., 2013) and – still internationally underpromoted – French psychological Activity Clinic approach (Clot, 1999; Kloetzer et al., 2015), which are both influenced by the works of Vygotsky, Leontiev and Luria in cultural-historical psychology. In this symposium, we present and discuss four research projects inspired by these two traditions. These research projects focus on professional learning, interprofessional collaboration at work and technology, with an action-oriented perspective aiming at provoking work and organisational transformations. The specific goal of this workshop is therefore to explore reflexive and transformative methodologies which connect work analysis with organisational and institutional transformations, in a truly international way, considering research projects conducted in five countries (USA, Finland, Switzerland, Norway and England).

The first paper discusses how collaboration in an interdisciplinary design process in the USA can be strengthened by the addition of cross self-confrontations (Kloetzer et al., 2014), a methodology in Activity Clinic. The project supports innovative modes of dialogue between expert designers and expert pilots around the design of a new tool in the cockpit. The second paper presents an intervention in Finland crossing Developmental Work Research with the methodology of cross self-confrontations to enhance learning in robotic surgery. It drafts a technology-based methodology adapted to this context for supporting the interpretive way of working of expert surgeons. The third paper presents an intervention conducted with the methodology of cross self-confrontation in a Swiss factory. It discusses the conditions of a research project focussing on supporting knowledge transmission at the workplace and how these may trigger organisational transformations. The fourth paper focusses on improving interagency collaboration between Mental Health Services and Correctional Justice Services in prisons, using the concepts of cultural historical activity systems theory, within two organisations, in England and in Norway. It discusses how technology can support collaboration in this context.

The discussion will be led by Prof Annalisa Sannino (University of Helsinki, CRADLE), a keynote speaker of RWL2017 who has extensive knowledge of Activity Theory and interventionist approaches both in Developmental Work Research and in Activity Clinic.

## **Paper 1. Methodological Explorations with an Activity Clinic Approach to Analyse and Support Industrial Designers doing Participatory Design: A Way to Contribute to Health at Work**

Edwige **Quillerou**, Occupational Health & Safety Researcher, INRS (French Research and Safety Institute for the Prevention of Occupational Accidents and Diseases)

This paper presents interdisciplinary research crossing engineering and occupational psychology to improve industrial designers' work with an Activity Clinic approach. Collaboration enabled a reflexive methodology throughout the design project and different conditions were tested to develop a participatory framework with workers who would use the new work system. The paper is based on a research and design project conducted in a laboratory with an enhanced flight simulator, a new tool for commercial pilots in the cockpit. The goal of the project was to design an interactive tablet to represent the most useful data on the weather in 3D during the flight. We tested different kind of interviews with expert pilots for each step of the technical development of the system. Our findings show that we have to organise different stages and conditions of reflexive designers' and pilots' work. We show especially how cross self-confrontation interviews help prepare the dialogue between designers and pilots. This experiment is a first step in a research programme dedicated to support the work of designers in improving future work systems, anticipating the changes of work organisation, enhancing inter-professional collaboration, and increasing the health and safety benefits for pilots.

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**Paper 2. *Towards New Learning Practices in Robotic Surgery***

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Laura **Seppänen**, PhD senior researcher, Finnish Institute of Occupational Health

The so-called interpretive mode of work (Norros et al., 2015) is able to respond flexibly to varying situational demands, to use multiple sources of knowledge, and to learn by creating new collective knowledge. An interpretive way of working is assumed to be needed in the increasingly complex and technology-mediated work where uncertainties of many kinds need to be considered. A cross self-confrontation intervention (Kloetzer et al., 2014) was applied in a Finnish hospital for enhancing interpretiveness in the work of robotic surgeons (Seppänen et al., 2016). Based on the findings and on activity-theoretical literature on developmental instruction (Davydov, 2008; Engeström, 1994), the aim of this paper is to outline principles and elements that are important for supporting an interpretive mode of working in robotic surgery. Moreover, the possibilities of digital technologies, especially learning platforms, in enhancing interpretiveness in robotic surgery in particular and in hospital work in general, will be discussed.

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**Paper 3. *From Technical Expertise to Organisational Transformations: An Intervention in Cross Self-Confrontations around Knowledge Transmission***

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Laure **Kloetzer**, University of Neuchâtel, Switzerland

This paper presents recently completed research which was conducted in a Swiss factory around knowledge transmission and training of expert workers with the methodology of cross self-confrontations. Combining detailed work analysis, professional dialogues, and production of films and photographs, this intervention engaged workers and management in a dialogical framework, to discuss and transform work organisation and training. We will discuss the intervention processes which allows the participants to drive organisational transformations, on the basis of joint work with the research team, which leads a work analysis on the transmission of the technical expertise in the factory. By highlighting technological constraints in the factory, how the expert workers overcome them, and how they reflect on the work organisation, the intervention creates conditions for organisational changes connected to the strategic choices of the direction.

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**Paper 4. *The Use of Technology in the Criminal Justice System to Promote Interagency and Interprofessional Collaboration***

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Sarah **Hean**, Department of Social Work, University of Stavanger, Norway & Faculty of Health and Sport Sciences, University of Bournemouth, UK

Effective collaboration between prison services and health and social services is key to effectively addressing offenders' rehabilitation needs and reducing reoffending rates in the longer term. A range of organisational integration or collaborative tools are used in practice to facilitate this activity with varying levels of success. We explore the role of technology in facilitating collaboration in this environment focusing specifically on the use of shared electronic records as a tool that mediates collaborative activities and information flow between intra and interagency interactions. We explore specific examples in the Norwegian and UK contexts. Theoretically, we underpin our discussion using the concepts of cultural historical activity systems theory to explore the complexity of these interagency interactions, the use of electronic records as a collaborative tool and to propose ways in which professionals and leaders within the prison system might wish to reflect on and transform their use of this technology, to identify and articulate some of the contradictions they face when implementing these shared record systems and to co-design solutions that overcome these.

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**Keywords:**

knowledge transmission, cross self-confrontations, electronic records, prisons, England, Norway, activity systems theory, interpretiveness, robotic surgery, intervention, activity theory, interdisciplinary research, design work, aviation, simulation

# Contradiction in the Ecosystem: Understanding the Decline of the Southern Cape Furniture Industry

ID051  
PAPER AVAILABLE

**Kraak, Andre** (Wits University, Centre for Researching Education and Labour)

This paper seeks to make a contribution to the emerging literature on skills ecosystems, particularly Hodgson and Spour's concept of 'expansive ecosystems'. It is also about the furniture industry, which has witnessed dramatic changes since the 1990s with the advent of low-cost Chinese exports. One major change has been a transformed labour process, with design capabilities becoming the most prized asset. Old craft models of manufacture based on the artisanal skills of the cabinet maker and upholsterer are in decline, at least in the Anglo-Saxon world. They are being replaced by large scale mass customisation plants which seek to compete with the Chinese on the basis of large volumes, higher quality, good design and competitive price. In addition, in the successful furniture regions of the world, the small family owned 'craft' firms of yesteryear have been upgraded to become high-skilled design-intensive 'bespoke' furniture firms that manufacture small batches of high quality products for top-of-the-range niche markets. This paper focuses on the role played by design in the rise of these bespoke furniture firms.

The focus here is on two furniture industry case studies – one in George, in the Southern Cape, South Africa, and the other in High Wycombe, in Oxfordshire in the United Kingdom. Both towns have served as historically significant furniture clusters. However, both industries are currently in severe decline. A manifestation of this decline is the collapse of polytechnic-type support to both locales, specifically in the form of furniture design education and training. In both locales, such design training has been shut down, or is not available, a reality in sharp contradiction to the important role being given to 'design capabilities' in the industrial policy arena as a key factor in determining the international competitiveness of furniture firms. This polarisation between furniture firms and ET institutions in both locales suggests a malfunctioning and restrictive skills ecosystem unable to go beyond its current low-skill 'lock-in'.

The paper considers ways in which this 'stasis' could be overcome and turned around – becoming more expansive – especially in building a design-intensive bespoke furniture sub-sector in both settings. A focus on the institutional structure of the skills ecosystem in both settings is proposed. The role of industrial policy is key, particularly the implementation of more effective 'furniture cluster' policies. The similarities between the concepts of cluster and ecosystem will be explored. What seems to be required in this turnaround is a combination of polytechnic education and industrial cluster policies that build both collective learning in and between firms as well as rekindle the offering of formal qualifications provided by polytechnic institutions in expert programmes that develop high quality furniture-specific design capability. This is work-in-progress in a field (research on furniture) that has been totally ignored by academic scholarship in both national settings.

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## Keywords:

ecosystem, furniture industry, polytechnic

# Professional Becomings: Lines of Flight in Student Nurses' Clinical Placement

Lehn-Christiansen, Sine; Mari Holen (Roskilde University)

This study explores the learning processes nursing students engage in during clinical placement in a hospital setting in order to develop new understandings of the complex encounters between the hospital as a space of learning and nurse students.

Since the birth of the clinic, hospitals have been a place where education for the medical professions has taken place alongside treatment and caring for patients. One might even, like Foucault, point to the idea that clinical education, clinic knowledge production and clinical practice co-constitute each other (Foucault, 1994). Despite their long joint history, educational and patient-orientated practices do not always co-exist without tensions in the hospital. Existing research on clinical nurse education has focused on identifying good educational practices (Bjørk, Berntsen, Brynildsen & Hestetun, 2014) and on barriers and potential for improvement (Ironsides, McNelis & Ebright, 2014). Themes like stress (Admi, 1997), role confusion (Cooper, Courtney-Pratt & Fitzgerald, 2015), lack of focus on clinical reasoning (Ironsides et al., 2014), students' experiences of disconnectedness (Campbell, 2008, in Forber, DiGiacomo, Davidson, Carter & Jackson, 2015) and students feeling unsure how learning objectives are met (Mannix et al., 2006, in Forber et al., 2015) have also been the focus of current research, thus establishing clinical placement as challenging both personally and educationally.

This study explores how students engage in the challenges of everyday clinical placement. By deploying the post-structuralist concepts of 'becoming' and 'lines of flight' (Davies, 2007, 2009), we aim at developing new understandings of the challenges of clinical placement by looking at the students' actions and reflections as ways of agency and creating new spaces of learning and thus as new opportunities of professional becoming that are not prescribed by the formal study programme.

The study is part of the research project 'CLIP', which is a qualitative longitudinal study of a cohort of 40 students who started nurse education in 2015. This paper deploys empirical data collected on the basis of the students' first ten-week placements in somatic care.

Ethnographic field observations (Ambrosius Madsen, 2003; Widerberg, 2015) were carried out in four somatic hospital wards in May 2016. Two full days were spent with four students and semi-structured interviews were carried out with the students, their clinical and daily supervisors. Six focus group interviews were held with the total cohort. These interviews focused on the students' experiences of the placement.

Our study shows that four distinctive lines of flight can be identified:

- 1) Active choice of daily supervisors
- 2) Forming partnership with patients
- 3) Using co-students as sounding boards
- 4) Striving for superiority

This study's findings stimulate a discussion of the relationship between the formal and informal processes of learning in clinical placement. They point to the idea that students engage very actively in their learning in a multiple of ways, and that these ways should be viewed in close connection with the clinical context.

## Keywords:

clinical placement, nurse students, poststructuralism

# Learning to Teach in Higher Education: Formal and Informal Learning

**Leibowitz, Brenda** (University of Johannesburg); **Lynn Quinn**; **Jo Vorster** (Rhodes University); **Patricia Muhuro** (University of Fort Hare)

The aim of this symposium is to explore challenges related to learning to teach in higher education which can be a formal or informal process, or a combination of both. The literature on learning to teach has often focused on formal programmes. Boud and Brew (2016: 77) referred to this as 'front-end loading'. The point has been made by practice theorists such as Theodore Schatzki that individuals learn via explicit formulations – thus more formal processes – as well as tacitly, from practice. Our own research has also highlighted processes that are not necessarily formal, but involve the mediation of policy or systems such as grants, excellence awards, student feedback systems, mentor programmes, workshops and one-on-one consultations sponsored by centralised, faculty or department-based academic development centres.

In this symposium, we consider the potentially complementary and mutually reinforcing relationship between learning to teach via formal and informal learning in higher education in relation to the varied and unequal nature of higher education institutions, and in relation to the need for a contextualised approach to supporting academics to learn to teach. Are both forms of learning equally significant across the settings? What factors influence the impact of formal and informal learning in the varied settings? What is required to make formal and informal learning more effective across varied geographic, socio-economic settings and institutional types?

We explore these questions with data collected as part of the NRF-funded research project entitled 'Interplay of structure, culture and agency: A study on professional development in higher education'. From 2010 – 2012, data was collected at eight South African public higher education institutions. The symposium begins with a brief introduction and continues with presentations on:

## *Formal learning provision in varied settings*

Formal 'learning to teaching' opportunities are usually offered by centralised academic development units or by academic development staff located in faculties or departments. These opportunities usually take the form of postgraduate diplomas in higher education and short courses or workshops on specific topics related to teaching and learning. These formal learning opportunities are designed to encourage academics to engage with the theory and research of higher education and to adopt a scholarly, critically reflexive approach to their teaching role. Both the opportunities and the responses to them are varied.

## *Legitimacy of staff developers and Teaching and Learning Centres*

Academic development is a relatively new field of practice and research. In this part of the symposium, we explore how the interplay of various structural, cultural and agential conditions across a range of institutional contexts enable or constrain the legitimacy that academic developers enjoy and how this impacts on how they can contribute to the development of academics as teachers.

## *Rural historically disadvantaged institutions*

A case study of two rural institutions found that these institutions faced challenges in recruiting and retaining highly qualified staff, and this had a ripple effect on the remaining staff who had to grapple with heavy workloads, coupled with pressure to attain higher academic qualifications, thus having limited time to undertake professional development on teaching.

A concluding section considers the implications of this account for a systemic national, but contextualised approach to supporting learning to teach in South Africa, as well as the implications for the literature on formal and informal approaches to professional learning.

## **Keywords:**

higher education, formal, informal



# Unhinging Paradigms through Praxis: Locating Professional Development and Professionalisation in Recognition of Prior Learning Models

**Lloyd, Shirley** (Department Higher Education and Training )

This paper presents a view of how professional development and professionalisation in two different contexts were achieved through Recognition of Prior Learning (RPL) practices. This paper is contextualised within a critical discourse about RPL, whether and how RPL practices and models have a role to play in a world where change is constant. The purpose is to provide empirical evidence through case studies, that RPL is a credible and reliable mechanism for professional development. Using the lenses of theory of change and Actor Network Theory (ANT), current RPL developments both in South Africa and wider afield are briefly considered. The validity of this paper lies in the research methodology underpinning this paper, conducted through a desktop literature review about theories of change, and ANT, the trends impacting the development of RPL and National Qualification Frameworks (NQFs), and finally in two short case studies. The empirical evidence from the case studies will provide a valid and strong argument about why and how RPL models can be used to enable professional development and professionalisation.

## **Keywords:**

Actor Network theory, theory of change, recognition of prior learning, professional development, professionalisation

# Double Stimulation and Scaling within Learning Networks: Features of Expansive Social Learning in Southern African Social-Ecological Work and Learning Contexts

**Lotz-Sisitka**, Heila; Mutizwa **Mukute**; Charles **Chikunda**; Tichaona **Pesanayi**; Experiencia **Chisoni**; Louise **Madikze**; Chamunorwa **Muthambo**; Yrjö **Engeström**

George Monbiot, a leading international sustainability and social justice writer, provocatively recently suggested that the only question really worth asking is “So what are we going to do about it?” This was said in response to an urgency to engage more actively with societal concerns in the face of state capture (by billionaires and their lobbyists), persistent and growing extreme inequality, and the collapse and radical altering of the living world and significant earth systems. While being provocative, he also notes that such a question is not easy to answer, given the immense complexity and scope of the forces at play and the associated consequences. There are social theorists that suggest that it might be too late to ask such questions, and it is better to simply allow excess energy to ‘take over’ and allow for transgressive emergence of event-based alternatives, possible, they suggest, in the city.

In this symposium we consider dialectical, emergent spaces for work and learning that are produced by social-ecological risk and their associated contradictions and absences, not in the city, but in rural southern Africa. Here, we consider the potentially transgressive emergence of alternatives produced interactively via co-engaged, generative formative interventionist research and learning processes that we have observed emerging in a range of southern African workplaces. These draw primarily on Yrjö Engeström’s CHAT scholarship and the applied method of developmental work research that uses change laboratories and double stimulation in formative research and learning interventions.

As a first dimension of our symposium, we consider the types of double stimulation tools that appear to be necessary when engaging with social-ecological risks and matters of concern in a rural southern African work and learning contexts. The first stimulus comprises the challenge and its underlying causes and/or contradictions that have to be addressed, and is always context specific. We frame the problematic issues as ‘matters of concern’, and have sought to understand these historically, but also via critical realist analyses which shed light on underlying generative mechanisms or ‘generative complexes’ that shape the matters of concern in our context, adding ontological depth to historicity. The second stimulus that we focus on in this symposium helps practitioners and researchers to better understand and tackle the problematic issue collectively and epistemologically. While the activity system model of Yrjö Engeström has been critical for helping researchers to analyse the problematic issues and the expansive learning process emanating from this work has been used to guide the process of tackling them, researchers in southern Africa have also used other tools to aid analysis and generate collective understanding of problematic situations. This is consistent with developmental work research and the CHAT project.

As we will illustrate across our papers, the tools used in southern African double stimulation vary, ranging from ontological tools from critical realist analysis and indigenous knowledge experience, to epistemological, activity-specific concepts and collective engagement methods that practitioners are familiar with. We have noted that the nature and scale of the activity, local conditions and cultural experience, as well as the object being engaged all play an important role in ‘determining’ or shaping the tools that are suitable. These include drawing mediation tools from systems thinking sciences to support questioning and analysis in complex contexts, and drawing mediation tools from cultural experiences and indigenous knowledge. The need for such a range and variety of double stimulation tools, we argue, is shaped by the complexity and inherent systemic dynamics of the object of activity, and their longer-term histories which are complex to engage, uncover and surface for expansive learning engagements.

As a second dimension of our symposium, we consider the issue of scaling of expansive learning processes in the context of less formal institutional work and learning structures that are manifesting mainly as forums or learning networks. The emergence of these work and learning structures to accommodate boundary-crossing expansive learning processes, we suggest, is also related to the complexity and inherent system dynamics of the objects of activity (i.e. activities that focus

on social-ecological risk reduction, political ecology and system changes). In particular, we notice the need to re-think a modern tendency to focus on the primary economic model which foregrounds individualism and 'rational economic man' within the so-called 'free economy'. For decades, this has been introduced and has reproduced a training logic that foregrounds the individual and his/her cognitive growth. Instead, our work and learning processes, collectively engaged, scale across a more complex economic system of thinking, which includes household economies that interface with state and market economies, and that are inclusive of an economy of the common good / commons economy (the interactions which we have observed in context, are theorised by Raworth (2017) in her thesis of the kind of regenerative economics required for living in the Anthropocene – see Figure 1).

*All papers will address both dimensions of the symposium framework.*



**Figure 1:** Kate Raworth's (2017) embedded economy model

#### **Paper 1** (Introductory paper by Heila Lotz-Sisitka)

The first paper provides a broad overview of the CHAT research being undertaken in southern African social-ecological / political ecology systems with emphasis on some insights gained into 1) the types of double stimulation tools (especially the range of these tools in relation to the complex objects being investigated); 2) institutional forms (especially learning forums and learning networks); and 3) economic spheres that have emerged as the change laboratory processes across a range of studies have unfolded in the Environmental Learning Research Centre work and community learning research programme over the past eight to nine years.

#### **Paper 2** (Presented by Charles Chikunda from AWARD)

The second paper considers the production and use of a variety of system-based double stimulation tools produced by the Association for Water and Rural Development (AWARD) in Limpopo Province, where CHAT-based change laboratories are emerging in a range of sites in the catchment around key areas of transformative activity. The overarching question for the discussion in this paper is how do we support people to conceptualise and address the intricate interplay of social, economic, political and cultural factors that combine to preserve injustice? As an attempt to answer the question, the paper shares and interrogates novel ways of mediating sensemaking in a social learning process of confronting context in complex settings.

#### **Paper 3** (Presented by Reuben Thifulufwelwi from AWARD)

The third paper considers the production and use of a selection of the above noted double stimulation tools produced by AWARD, but this time applied to one of the specific activities being co-developed, namely improved rehabilitation for biodiversity management in the Blyde River Catchment, which is a sub-catchment of the Olifants Catchment. The paper also reflects on the economic forms in focus (i.e. economy of the state (EPWP programme), and economy of the commons (biodiversity and water system economies) and how this influenced learning network formation in the case study.

#### **Paper 4** (Presented by Tichaona Pesanayi, Louise Madikize and Chamunorwa Muthambo)

The fourth paper considers the work and learning of smallholder farmers from four local farmers' associations together with extension officers, agricultural educators and local economic development agricultural specialists in two local municipalities of the Amathole District of the rural Eastern Cape, South Africa. We consider the double stimulation processes and tools used in the co-development of productive demonstration sites and consider the expansive work and learning processes that arose in formal agricultural education curriculum work, and farmer and extension activity via boundary crossing change laboratories situated within a learning network. Agricultural water contradictions were used as a first stimulus, leading to a series of second stimuli, which included rainwater harvesting practices from Water Research Commission materials, a memorandum of understanding made with an agricultural college, OPV seed varieties and a value chain for local produce provided by the local municipality. Productive rainwater harvesting and conservation demonstration plots were developed and became catalytic in expanding learning and activity across economic spheres, leading to a range of interconnected outcomes.

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**Paper 5** (Presented by Experiencia Chisoni)

The fifth paper considers the work and learning of women who maintain the household economy in rural Malawi villages, where they depend on depleting wood stocks for cooking. It considers the double stimulation tools related to socio-technical instruments associated with the introduction of improved cookstoves as a climate change response strategy. Tools were required to engage contradictions around cultural convenience of the new socio-technical intervention as well as power dynamics in the determination of prices, related affordability issues, quality and marketing problems which were associated with cooking activity in the context of use/non-use of the improved cookstoves. Responses co-produced in change laboratories over a period of two years generated the co-production of new concepts and alternatives within this economy, and a mix of demands for new forms of work and learning amongst the home, state and market economic spheres.

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**Paper 6** (Presented by Mutizwa Mukute)

The sixth paper considers the work and learning of eight district organic farmer association associations in Zimbabwe who are working together to establish more viable systems of production for household consumption and income generation. Here, double stimulation processes included identifying and analysing matters of concern around sustainable and viable agricultural production, marketing and solidarity in the face of climate change, declining rainfall, food and income insecurity and unsupportive production and marketing systems. The expansive learning process paid attention to cognitive justice and the economy of the commons via scaling of local farmers' knowledge, organic agricultural practices and value chain development crossing economic sphere boundaries. Via expansive learning change laboratories over a period of two years, they have co-produced new solutions that have economic value for themselves as well as social and ecological value for their neighbours, again generating a mix of demands for new work and learning across the economic spheres concerned.

In conclusion, we will reflect together, with input from Professor Yrjö Engeström from CRADLE, on the interrelated themes picked up here across our expansive learning change laboratories in a southern African context of engaging social-ecological risks and sustainability commons concerns. These themes include: 1) the types of double stimulation tools that we are finding a need for, 2) the emerging pattern of learning forum and learning network formation to accommodate the expansive learning interventions over time and to ensure their continuity and sustainability, and 3) the emergence of scaling across economic spheres of household, market, state and the commons. We propose that these insights offer ways of addressing Monbiot's question 'what we are going to do about it', but also 'how we might go about doing it' i.e. engaging the dialectical learning spaces that open up in engagements at the interface of social-ecological risk and transforming political ecologies.

We have invited Yrjö Engeström to offer a response to our symposium.

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**Keywords:**

expansive social learning, double stimulation tools, scaling, CHAT

# Professional Development in Intercultural Competence of Academic and Administrative Staff in Latin American Higher Education Institutions

Lukic, Dane (Glasgow Caledonian University); Yarosh Maria (University of Deusto)

With the growth of diversity and internationalisation in the higher education system and industry in the last few decades (University of Oxford, 2015), there has been an increased need for developing professional competence in organisations to deal with the benefits and challenges arising from intercultural encounters and work collaboration (Gregersen-Hermans, 2017). In order to successfully work and collaborate across different cultural domains and with people from diverse cultural backgrounds, a set of abilities for dealing with cultural diversity is required. These abilities, collectively termed intercultural competence (IC), enable effective studying, living and working across different cultural boundaries (Fantini, 2007). Higher Education Institutions (HEIs) are expected to provide students with the competence to deal with different cultures and use the cultural diversity of their surroundings as an advantage for innovation across the whole curriculum (Deardorff, 2015). Studies and our previous research experience reveal that academic and administrative staff in Latin American HEIs (LA HEIs) are particularly struggling to develop a solid level of IC themselves (Lukic & Solari, 2015; Berry & Taylor, 2014). Moreover, most professional development programmes appear to be focusing on limited diversity awareness programmes rather than transformative power of considering organisational diversity as a potential for innovation. LA HEIs have gone through a process of increased internationalisation with planned further rapid growth of intra-regional (de Wit, 2017) and international mobility (Berry & Taylor, 2014) by 2020. At the same time, there is a widespread movement towards widening access to students and staff coming from indigenous backgrounds. However, if not focused well, cultural diversity can create a lack of communication, conflicts, exclusion, project delays and lower quality of outputs. On the other hand, if managed well and with the appropriate level of IC, the diverse environment can provide for better and more innovative outputs, novel projects and discoveries coming from cultural boundary crossing. These recent changes and future projections highlight the need for activities tackling internationalisation capacity of LA HEIs.

Academics and administrator employees in LA HEIs are faced with the following challenges:

1. Teaching, learning and assessment of diverse student cohorts (internal LA student mobility, international overseas students and students from indigenous cultural backgrounds);
2. Supporting student development of IC as one of requirements for graduates for further study and employment in a global economy;
3. Preparing their students for further studies which are likely to be carried out in other countries/continents;
4. Collaboration with academic colleagues from diverse cultural backgrounds in their own institutions (due to increased academic staff mobility);
5. Living in different cultural settings (due to increased academic staff mobility);
6. Collaboration on international research and consultancy projects with colleagues around the world; and
7. Lack of provision and recognition professional development of IC in the institutional evaluation of staff.

These challenges create a need for more tailored, integrated and engaging professional development opportunities for staff to improve their own IC and support students in developing their intercultural abilities. The paper reports on an approach to a holistic, customised, flexible and reflective professional development programme that would provide LA HEIs with increased knowledge, awareness, skills, attitudes and tools to be interculturally competent professionals. The paper proposes a qualitative approach and framework for professional development of intercultural competence of LA HEI staff in order to prepare the institutions for internationalisation and builds on two previous research projects. It then outlines the next phases of the research and highlights contribution to research and practice of university staff professional development and workplace learning in the field of intercultural competence.

## Keywords:

professional development, organisational learning, diversity, transformation

# Exploring Learning Conditions in a Public Service Organisation during a Transformation Attempt

Halvarsson, Lundkvist Agneta; Kock **Henrik**; Maria **Gustavsson** (Linköping University)

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PAPER AVAILABLE

The aim of this paper is to explore the conditions that enabled or constrained learning during a transformation process aimed at integrating continuous improvement into employees' everyday work in a social welfare department in a Swedish municipality. In the process of transformation, the department received support from a National Workplace Development Programme (WPDP) that offered support to public service organisations in need of becoming more efficient by adapting to a Lean production model.

Fuller and Unwin's theoretical model of expansive–restrictive learning environments was used to explore the conditions that enabled or constrained the transformation process. The research is based on 22 interviews with municipality actors. The findings show that, over time, multiple and emerging external and internal organisational conditions interacted to constrain the employees' learning. The major conditions identified in this study were politics and lack of steering, the organising of the WPDP, the infrastructure intended to support managers integrating continuous improvement into employees' everyday work and the managers' limited resources to do so. The novelty of this work lies in the attention given to the external conditions attributed to the WPDP, which provides insight into the complex struggle to find national policies that work for public sector organisations.

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## Keywords:

workplace development programme, workplace learning, organisational development

# The Role of Craft-Hubs and Post-School Education in Textile and Clothing SME Development: A Focus on South Africa's Mohair, Value Added Through Design

**Mahlangu, Isaac Bongani** (University of Witwatersrand)

South Africa has consistently dominated global mohair production and gained recognition as the main source of mohair. Favourable climate conditions enable the country to produce almost 53% of the world's mohair. Over 90% of the mohair is, however, exported as greasy/raw mohair (NAMC, 2012) bypassing the domestic textile and clothing industry and constraining linkages within the domestic value chain. Decreasing access to mohair and low investment levels in human and physical capital has led to a significant decline in the textile and clothing industry and its contribution to manufacturing output, which is reflected by the falling export share and the significant contraction in employment.

Parallel to this is increased SME start-up amongst graduates who struggle to find employment in a contracting industry. There are claims about poor relations between post-school education and industry resulting in the production of graduates whose skills are not consistent with the needs of the industry (Muzenda & Duku, 2014). The growing retrenched population has also responded to firm closures by starting SMEs. This study examines the role played by craft-hubs and post-school education in developing skilled SMEs that produce value-added mohair textile and clothing. It presents a case of four SMEs which mirror gaps in interactions between post-school education, domestic industry and government in the Eastern Cape. It used a combination of semi-structured interviews, document analysis and observation to collect data from university management, lecturers, programme managers at the craft-hubs and the four SME case studies.

The study finds that post-school education's focus on producing graduates entering the world of work as managers, supervisors and researchers is not consistent with the needs of the country to stimulate entrepreneurship activities and diversify economic activities. Based on the findings, the study concludes that the lack of clear linkages between the industry, government interventions and post-school education is indicative of a lack of a comprehensive industry strategy which all stakeholders can buy into and drive (SASTAC, 2014).

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**Keywords:**

craft-hubs, global value chain, mohair, post-school education, textile and clothing, SME

# Employability Skills versus Human Development Skills: Dilemmas for Undergraduate Sociology Students in South Africa

**Manyonga, Bothwell** (University of Witwatersrand)

This paper explores the dilemmas that sociology undergraduate students face as a result of the teaching and learning that they experience. Specifically, the focus is on what functionings and hence capabilities are valued by and enable sociology students to live and act in the world. The context is where some university graduates experience a persistent advantage in the labour market, yet sociology undergraduate students struggle with occupation identity and to situate themselves in the job market. Drawing from the principles of the capabilities approach of Amartya Sen and Martha Nussbaum, the paper argues that curriculum ought to offer students real opportunities, expanding choices for individuals to do and be what they have reason to value. Thus, equipping graduates with more capabilities (including but not limited to employability skills), more well-being (achievements) and more agency means that higher education, particularly through curriculum, would be more just rather than less just. If students are equipped with fewer capabilities, less well-being and less agency, this means higher education is unjust.

The paper presents findings from qualitative data collected from undergraduate sociology students at two South African universities. It suggests grounds for (re)thinking policy orientations to sociology curriculum developers, particularly on how the capabilities approach and the human capital theory can complement each other in curriculum development and fostering skills for life, work, and society. It also casts light on how university curricula and indeed education might be transformed in the twenty-first century.

## Keywords:

employability skills, capabilities formation, sociology curriculum, social justice



# The National Certificate Vocational (NCV) Qualification, Continued Learning and Employment: Tracing the Destinations of TVET Engineering Completers in the NW Province

Mashongoane, Thabo (DHET)

This study was prompted by a quest to respond to the skills shortage in South Africa and the alleged inadequacy of the provided programmes to the students in Further Education and Training colleges. This is so because the former Department of Education developed new programmes called the National Certificate Vocational NC (V) which have never been evaluated as to their efficacy which is the focus of this paper. The National Certificate Vocational curriculum has recently been renamed the Technical Vocational Educational and Training Colleges (TVET). Qualitative and quantitative approaches were used to collect data. The data sourced was also used for triangulation purposes of comparison. This research study was undertaken to survey and track the cohorts of graduates of 2009 to 2012 with a view of determining the impact of the NC (V) programme on their destinations. The NC (V) programmes are rolled out in various study fields throughout the country, but the research was limited to the graduates who followed the three programmes ranging from building construction, electrical to engineering and related studies in the North West Province. To conclude, the interview schedule was used to collect data from purposively selected participants from the Colleges, Department of Higher Education and Training, the Sector Education and Training Authorities (SETAs), the Universities of Technologies (UoTs), and the various employer organisations while the questionnaire solicited quantitative data from the graduates. The study revealed that the programmes offered did not satisfy all the stakeholders as the actual presentation will show and will also discuss a proposed model as solution.

## Keywords:

impact, National Certificate Vocational, continued learning

# Change Laboratories with Youth to Reconceptualise Work in Lenye Village

Matiwane, Lwazi (Rhodes University)

The masters research on which this poster presentation is based is motivated by Sustainable Development Goal number 8 (United Nations, 2015) which is decent work and economic growth, and the Global Action Programme on Education for Sustainable Development priority action area number 4 (United Nations Educational, Scientific and Cultural Organisation, 2014) which focusses on empowering and mobilising youth. This research could contribute to some of the key developmental and transformational concerns in South Africa, namely, rural development, youth unemployment, environmental sustainability and agriculture. It is further motivated by the potential investment that youth are for development, growth and sustainability. Lenye village, located in Keiskammahoek in the Eastern Cape Province of South Africa, has youth working in farming practices such as employees in public work programmes, as self-employed farmers, as a youth group working towards registering as a co-operative and as temporary labour in a farming co-operative. One of the challenges faced by youths is defined as unemployment. Change laboratory workshops (Virkkunen & Newnham, 2013) have been carried out to identify and address some of the challenges faced by the youth in this sector in with the hope that emerging solutions will help not only the youth but the community at large. Semi-structured interviews, observations and documents were analysed through third generation Cultural Historical Activity Theory (CHAT) (Engeström, 2001) to map and understand the relationship between the agricultural activity systems the youths represent and the sustainable development activity system that the agricultural activity systems are working towards in Lenye village.

The value creation framework (Wenger et al., 2011) and second generation CHAT were used to analyse audio recordings and minutes of the expansive learning process and a post change laboratory workshop's focus group interview, in order to understand the role of expansive learning in developing rural youths as value creators. This poster is a review of the working and learning happening in and around the village with regard to youth in farming practices. What appears to be an issue is that the true challenge is struggling to see and recognise employment and work as somewhat equivalent with respect to the desired benefits sought when seeking employment particularly in a rural context. My research has shown that the youth seem to rather be employed than to work; however, employment is work that has been formalised, often by someone other than yourself, and is rewarded through monetary value. This is a classical internal contradiction with roots in the Marxist dialectic of use value (work for oneself) versus exchange value (work in formalised employment) (Marx, 2004). In working with the youth in such a context, we have deliberated that if their orientation could be to look for work rather than employment, particularly in less developed spaces that do not have a plethora of employment opportunities, then the youth could find work to supply their needs as individual youths and the need for growth and development in their communities. This contradiction that seems to arise between notions of work and employment, has the potential to become a rich space for generative solutions from formative intervention research tradition.

The poster includes reflections on how the working and learning happening can further be highlighted and understood as working and learning that can be channelled or is being channelled for youth and community development, reflections on how the youths can engage with the community to strengthen their networking in and around the village to achieve growth and development in agricultural practice. This review will also include some reflections on the use of change laboratory workshops/expansive learning with youths in the village, reflections from a formative interventionist perspective and a participating youth perspective.

The poster presentation will describe how youths in Lenye village learned together how to work in their own workspaces. I see this as providing useful information for the Eastern Cape considering it is one of the provinces with a large rural and discouraged job seeker population.

## Keywords:

expansive learning, work, rural development, youth, employment

# Multicultural Learning through Dialogue? Exploring the Learning Process of Teachers Attending a Course on Multicultural Understanding

Matthiesen, Noomi (Aalborg University)

In a world of increasing upheaval and discontinuity, it is important that teachers have the competencies necessary to adequately address the needs of children and parents of ethnic minority backgrounds, both long-term residents, new immigrants and refugees. This paper explores the learning process of post-service teachers who attended a course in a large city in Denmark on multicultural understanding in education. Through participant observation at the course (eight work-days) and subsequent interviews with six of the teachers, their insights and new understandings are explored as well as their experiences with applying their new perspectives in practice. The course was designed to develop the skills and understanding of the teachers in order to allow them to meet the increasing challenges they faced in their inner city multicultural schools. At the beginning of the course, the teachers with Danish backgrounds described ethnic minority parents in negative deficit terms, which is in accordance with much research on teacher conceptions of ethnic minority parents both in a Danish context (Matthiesen, 2017) and internationally (see for instance, Brenner & Kia-Keating, 2016). They remarked on difficulties associated with differences in understandings of child upbringing and disciplining as well as practical difficulties due to language and communication challenges. They also noted the parents' apparent disregard for attending school events and supporting their children's education. These notions were challenged by the ethnic minority teachers, often resulting in heated debates. While some teachers noted a few incidences of increased understanding of the other's perspective, most of the dialogue did not have this outcome, resulting instead in the maintenance of already established perspectives. Furthermore, the teachers were hard put to describe any application in their everyday work of what they learned during the course. In order to understand this, we need to consider the power dynamics and social relations at play in the course which constructed the learning conditions for the teachers. Social practice theory holds some useful concepts to analyse these learning conditions.

Firstly, we must note that dialogue and language are merely a small part of what it means to be human. Dialogue does not transpire in a frictionless vacuum, but instead is situated in a specific practice; a social practice that is historically, culturally, politically and socially produced. According to a social practice theoretical approach, relations are mediated through practice. The social world is seen as existing only through being (re)produced and changed by the *participation* of persons, who are simultaneously being (re)produced and changed through this participation. The social world is comprised of various power structures that are historically constructed and institutionally sustained as particular struggles and local contentious practices (Holland & Lave, 2009). Persons participate in practices from specific positions that hold particular purposes, goals and power to participate in certain ways but not in others (Dreier, 2008). Participation is thus the concrete material through which the subject and the social world are connected. Participation is, as Dreier (2008: 22) noted, "the fabric that connects us". In this perspective, subjects are understood as radically social and interdependent (Nielsen, 2016).

It is argued that the dialogues in the course can be understood by considering larger societal struggles. The ethnic minority teachers were concerned with challenging stereotypes, breaking down unhelpful and discriminative prejudices as well as restoring and sustaining dignity. The ethnic Danish teachers, on the other hand, were concerned with addressing the concrete challenges they met in their day-to-day work and insisted on maintaining their explanations as they considered the possibility of addressing these explanations the only way to find solutions. One perspective undermined the other and vice versa and resulted in a struggle to convince the other of her perspective. It is thus argued that enabling learning that allows for others to transcend marginal positions not only requires considering attitudes and knowledge of the other, but rather must consider the local power dynamics, struggles and individual concerns. Rather than viewing learning as an epistemological problem of acquiring knowledge, beliefs and skills, learning must be conceived of as radically relational and thoroughly situated.

## Keywords:

post-service teacher education, multicultural understanding, ethnic minority teachers, situated learning

# The Influence of Biographies and Individual Agency on the Culture of Employee Learning: The Case of Administrative Assistants at a South African University

Mavunga, George (University of Johannesburg)

In the past, employee learning and the culture associated with it were seen as exclusively dependent on organisational strategic initiatives, on one hand, and the response to these initiatives by collective entities such as workers' unions and work teams, on the other. However, this notion began to be challenged in the 1990s with further attention being drawn to the role played by employees' biographies and individual agency in shaping their culture of workplace learning (Billet, 2006; Cole, 1998).

The culture of employee learning and its conceptualisation is a dynamic and complex phenomenon. This is particularly so in South Africa where one school of thought suggests that the skills revolution meant to redress unemployment and underemployment, which are a legacy of the country's past, has failed (Freeman, 2015). Based on a study at the University of Johannesburg (UJ) involving fifteen administrative assistants from different faculties, departments and units across the four campuses of the institution, this paper is a contribution in this regard. In addition to semi-structured interviews with the administrative assistants, data were gathered from employee learning-related documents such as the UJ Performance Management Policy and the new UJ Training and Development Policy. The following were also useful: Critical Realism (Bhaskar, 1978; Archer 2000); Bernstein's (2000) idea of learning domains and Bourdieu's (1977; 1980) notion of habitus. The paper established that the administrative assistants' biographies and individual agency played a crucial mediatory role in shaping their responses to the UJ employee-learning project. Biographical aspects such as family background as well as basic and tertiary education institutions attended were found to have had a major influence on the administrative assistants' culture of employee learning. This was paralleled by the influence of schools and tertiary institutions which placed considerable emphasis on academic and professional success. Aspects of individual agency such as perceptions, attitudes and motivation were also found to have a strong bearing on the character of the administrative assistants' culture of employee learning.

Emerging from the study as well was the largely ignored disparity between the UJ senior management's strategic intentions and some administrative assistants' career development aspirations which themselves are a function of their identities, subjectivities and everyday lived experiences. The UJ's strategic intentions were characterised by two main aspects arising from what Gravett (2005) called employees' prescribed needs in respect of employee learning. First was the drive towards realisation of the institution's vision and mission. To this end, employee learning would be used to equip the employees with the requisite skills and competencies. Second was the need to conform to government legislation regarding employee learning. An example was the requirement for every employee at the institution to have a personal development plan (IDP) which would ultimately feed into the institution's Workplace Skills Plan (WSP). In most cases, however, the administrative assistants' career development aspirations were characterised by not simply the need to acquire competencies relevant to their current jobs but those by means of which they could realise upward career mobility. This exemplifies what Gravett (2005) called 'felt needs'. The contradictions between the institutional strategic intentions and the administrative assistants' career development aspirations represent a serious constraint on the achievement of aligned ambition in respect of employee learning. Necessary at UJ, therefore, is a holistic conceptualisation of employee learning which takes into account the influence of the global, national and sectoral competitive imperatives reflected in the official domain of employee learning as well as the influence of workplace-based collective social entities. However, it also needs to accommodate what the administrative assistants bring to the employee learning landscape through their biographies and individual agency as reflected in the social and learning domains.

## Keywords:

administrative assistants, employee learning

# The Delivery of the Clothing Curriculum in South African Polytechnic Institutions: Towards a Competitive and Sustainable Industry

**Mavuso, Sibusisiwe** (University of Witwatersrand)

The role of polytechnics curriculum and fashion design programmes towards skills development for the clothing industry cannot be underestimated. The aim of this study was to gain an insight into the interactions between education and training institutions and clothing firms towards skills formation for the South African clothing sector. The target population for the study was universities offering Clothing Management and Fashion Design programmes and their students. Six semi-structured interviews were completed with academics from the University of Johannesburg, third-year Clothing Management students from the University of Durban Technology and clothing manufacturers based in the Gauteng region. All interviews were transcribed and data was coded according to the themes emerging. Findings indicate that polytechnics have, over the years, built partnerships with the clothing industry though the relationship is not formalised and consistent. The relationship allows students to be placed on the industry for work integrated learning programmes and also for experiential learning. Furthermore, it facilitates input on the curriculum by the industry in the context where technology and trends in the clothing industry are changing constantly. Based on the above findings, the study concluded there is a need to establish strong and more consistent partnerships between education and training institutions in order for the apparel education curriculum to play a major role to the clothing industry.

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**Keywords:**

skills, clothing industry, education institutions, pattern making, curriculum, South Africa

# Systemic Relationships of Skills Development Stakeholders in Supporting Green Economy for Addressing Unemployment

**Mmotong, Surprise Cleopatra** (University of Witwatersrand)

South Africa has a resource-intensive economy and is faced with declining natural resources and deepening inequalities. Like much of the rest of the world, the country is gradually transitioning towards a green economy. Policy, environmental, social and economic factors drive South Africa's transition to sustainable development and a greener economy. The transition to a green economy is considered an opportunity to achieve an inclusive economy by tackling inequalities in human economic development such as poverty and social injustice (Rosenberg, 2015). Education and training are essential building blocks for the transition to a green economy. This will involve green skilling, creating public participation as well as public awareness. This raises the importance of education system responsiveness as a green economy will create different demands on skills and force labour markets to change in order to remain competitive and innovative. Various policies have been developed to foster sustainable development and various projections on potential job creation for a green economy. However, there is a problem related to both the achievement of sustainable development and green economy objectives. South Africa is said to lack adequately qualified people to implement these goals resulting in what is termed 'scarce skills' in the environmental and sustainable development sector (Ramsarup, 2015: 60). It is important to note that South African education and training providers are currently offering various courses relevant for a green economy. However, earlier research conducted towards a National Environmental Sector Skills Plan (DEA & Rhodes University, 2010) and other human capital development strategies, indicated that environmental skills planning and provisioning in South Africa is largely reactive, ad hoc and inadequate (Ramsarup, 2015). The scale of the challenge of transitioning to a green and inclusive economy, and conceptualising skills development needs within a context where tomorrow's jobs will be different from those we know today, requires a more systematic engagement of the education and training sector.

DHET has a central role to co-ordinate the development of green skills within the labour force. SETAs need to facilitate for the production of green skills needed by the workforce in all sectors at all levels. A transition to a green economy will have structural changes in the labour market and existing occupations and industries will experience greening changes to tasks within their jobs; this will require adjustments to the current training and qualification frameworks for these occupations. QTCO and SAQA will therefore need to create new occupations to support new economic activities. TVET colleges will also have to look into offering low level green skills programmes which support entry into the labour market

This study set out to explore how green economy discourse can contribute to addressing the challenge of unemployment experienced in the country focusing on the role of the skills development system. The research questions are:

1. Is there a consensus among skills development role players on how or through which instrument/s the green skills objectives can be achieved?
2. Is the skills development system responding with appropriate training design to support green economy which addresses unemployment?
3. How will new streams of demand for green skills products and services impact on skills, employment and employability?

It is important for the education and training system to provide appropriate skills and competencies to support the green economy to enhance job creation. Green skills planning is of paramount importance if the country is to provide adequate learning pathways to support a green economy. It is not clear if the skills development system is currently responding with appropriate training design to support a green economy due to the fact that green skills planning is not integrated.

## Keywords:

green economy, unemployment, sustainable development

# Measuring the Impact of Higher Education on Development and Social Change: Shifting Methodologies

**Molebatsi, Palesa Malehlohonolo** (University of Witwatersrand)

The impact of higher education has traditionally been observed by economists through rates of return studies. While this may not reflect a causal relationship, it points to an increasing association between higher education and individual/national income.

However, not enough is known about how higher education contributes to development and the extent to which it does so. There is an under-theorisation of key concepts that can reflect the impact of higher education. New methodologies are emerging to respond (Clark, 2017) with metrics trying to better reflect these concepts.

Recently, definitions of the 'public good' nature of higher education have shifted and been linked to social justice through increasing social mobility (Williams, 2016). Policies appear to attempt to incorporate these changes given rising inequality even in developing contexts like the USA, Canada, etc. (Margison, 2016). The Teaching Excellence Framework of England, among other things, assesses how effective higher education is in meeting the needs of a diverse student from a disadvantaged background.

The Teaching Excellence Framework (TEF) is a government assessment of the quality of undergraduate teaching in universities – universities are awarded gold, silver, or bronze status. Six core metrics lie behind the TEF. Three of these come from the National Student Survey (i.e. students' views on the quality of teaching, assessment and academic support received). A fourth metric is based on a university's dropout rates. The final two relate to graduate activities after leaving university.

There is some debate around the value of TEF. Do metrics such as student satisfaction and employability data adequately measure teaching quality? The TEF positions education as a commodity for sale to buyers (i.e. students). Universities target spending on activities that maximise scores on TEF indicators. This may lead to underfunding certain 'collective goods' (Margison, 2017).

## Keywords:

higher education, Teaching Excellence Framework, shifting methodologies

# Green Skills in the South African Surface Coatings Sector: A Methodological Exploration

**Moroane, Kedibone** (Chemical Industry Education and Training Authority – CHIETA); **Presha Ramsarup** (Wits University); **Nicola Jenkin** (Pinpoint Sustainability); **Eureta Rosenberg** (Rhodes University)

For South Africa to realise a greener economy, the National Development Plan recognises the need for skills development to strengthen the nation's economic and social resilience. To grow a greener economy and to facilitate sustainable development opportunities at sector and national levels, an understanding of green skills demand and utilisation is necessary. This study thus aimed to support the Chemical Skills Authority in South Africa, their employers and the broader skills planning community by providing a methodology to identify green skills priorities and demand articulation, at the firm and sector level in the surface coatings paint sector.

Drawing on a multi-level perspective of transitioning, it thus provided theoretical and explanatory tools to look at greening work as an interplay at three analytical levels:

- landscape pressures that impact of sectors / analysis of the drivers;
- operating norms and practices within a regime and thus explore the lock-ins that hold dominant practices in place; and
- workplace practices for evidence of the lock-ins and opportunities for transformative praxis.

The study started with a contextual driver analysis which highlighted the significant environmental impacts at various stages in the paint value chain. These include impacts during the extraction and processing of input materials, impacts during the manufacturing process (with wastewater and sludge production) and high and inefficient energy use by the automotive paints industry particularly. There are also significant health impacts associated with paint application and hazardous components of paint such as lead. Key areas of environmental concern are linked to product innovation and education on the risks associated with lead-based paints and regulation. The contextual driver analysis provided a platform for surfacing green skill needs.

Central to the research methodology was an expanded value chain analysis as a means to identify and map out environmental hotspots in the sector. This required an intensive look at regulation and innovation processes within value chains. In addition, an occupational network mapping exercise was undertaken to identify the core occupations that require green or the greening of skills in the value chain.

The study of green skills needs across occupations reflected that the majority of green skills interventions require greening of current occupations and the support of skills development that can foster more sustainable practices. In the study three core focal areas emerged as central to opportunities to increase workforce capability to support a more sustainable paint industry: risk, regulation and innovation. The following occupations were particularly relevant to the greening of the paint industry: Environmental Health Officers; Safety, Health, Environment and Quality managers and/or Sustainability managers; Technical Managers and Laboratory Technicians; Research and Development Managers and Researchers; Engineering Managers; and Painters and Contractors. The study provided a comprehensive set of green skill occupational profiles related to the paint industry, which can be used by the chemical sector for the revision of the green occupational frameworks and for strategic interventions to support better sectors skills planning for green skills. In addition, the findings provide guidelines for the greening of jobs along the value chain in the sector, and can help employers to strengthen workplace green skills planning processes.

The study identified significant opportunities for the industry to contribute to the green economy by reducing energy usage, better managing its waste and introducing innovations to reduce environmental impact.

## Keywords:

green skills, value chain, surface coatings



# Transitions in Care for the Disabled – Assistive Robotics, Tasks and Responsibilities

Nickelsen, Niels Christian Mossfeldt (Aarhus University School of Education)

Many interesting technological innovations and assistive robotics with regard to care for the disabled and elderly have appeared in recent years. There are different levels of participation in such innovations by citizens and professionals. Initiatives like these have in common, among other things, that they involve important elements of self-care and are part of an international movement toward empowering citizens. These initiatives are often associated with democratic values that include the activation and service quality seen from the perspective of the citizen. While some see this as timely service development and continuous care, others see it as an expression of individualisation, de-institutionalisation and even dismantling of the welfare state. This ongoing transformation of care for the disabled will lead to new forms of citizenship, new forms of professional tasks and changing relationships between caregivers and those they care for.

Recently, assistive robotics have become a new consideration in social work and health care. This paper discusses the relation between care innovation and new modes of professionalism in terms of empowering the citizen. By way of an ethnographic study in housing institutions for the disabled in three boroughs in Denmark, based on observation, focus groups and photo elicitation, I discuss the ways professionals and citizens engage with assistive robotics, how assistive robotics co-produce everyday life in housing institutions, and the sensibility of the robotics. During recent years, Feeding Assistive Robotics (FAR) have enjoyed strong political endorsement in Denmark and are used by citizens with low or no function in their arms and hands. It is, however, I argue, difficult to use them in practice. This has to do with many goals and criteria crossing each other and the fact that it is difficult to recruit suitable citizens and establish a stable FAR-body assembly. By way of two examples, a success, where self-reliance is the result, and a failure, leading to indignity, I elucidate different modes of engagement, in relation to the research question: How does professional and citizenship innovation take place alongside technological care innovation? Using material semiotics (Mol, Moser & Pols, 2010; Law, 2007, 2004; Law & Moser, 1999) as an analytic resource, I discuss what knowledge of the sensible world is inscribed into the FAR and how citizens and professionals engage with it when it enters their workplace and home (Akrich, 2000). The paper tells the story of how the initial political-managerial enthusiasm with regard to FAR has been mobilised and then crumbled in five years.

Much points to the possibility that the FAR-technicality i.e. one button for turning the plate and another for making the spoon go up and down is not sufficiently knowledgeable to interact attentively with citizens with low or no function in their arms and hands. The FAR is obviously designed to fit into the everyday life of disabled citizens, yet it unavoidably also creates, orders and mediates everyday life. The food needs to be prepared in certain ways, the FAR makes a noise during use, it is fixed to a table and takes up space. In this sense, the FAR pre-scripts the usage scenarios and lacks sensibility and capability of adjustment to the environment.

By way of an emic analysis (Kok, Leistikow & Bal, in press), I untangle different kinds of engagement with care innovation. This leads me to three points with regard to workplace learning: 1. Professionals and citizens have to enter into relations with technology, but we cannot know in advance how they do it. It is for instance very difficult to predict which citizens are able to use FAR. Much depends on the working alliance that is established between professionals, citizens and technology. Caregivers need to improvise. 2) Using assistive robotics assigns new and intensified responsibilities and invisible work to the caregivers due to a number of emerging uncertainties. 3) Despite some successes and obvious great potential, the eating technology still appears insufficiently sophisticated to interact adequately with a large number of disabled citizens.

## Keywords:

feeding assistive robotics, disability, indignity, invisible work, intensified responsibility, material semiotics

# Transgressions and Transformations at Work: Towards a Social Media Practice among Swedish Municipality Communicators

**Norström, Livia; Ulrika Lundh Snis; Iréne Bernhard; Per Assmo** (University West, School of Business, Economics and IT)

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This paper discusses how communicators at the municipality, in their work, negotiate the tension between a traditional role of an 'informative administrator' and a 'promoting, engaging social media profile'. The work is learned by carefully transgressing municipality social media and IT policy and by transforming social media practice from private and commercial use of Facebook, towards a new practice founded in democratic values.

Social media has become an important strategy for municipalities to disclose a massive amount of information with relatively low cost and to create engagement with citizens. However, fostering participation and citizen engagement on social media platforms is still a great challenge for municipality administration as well as for research. Despite a widespread diffusion of platforms such as Facebook in municipalities, interaction level is relatively low compared to private organisations. We know from previous research that citizens' engagement with municipalities on Facebook is related to the municipalities' tradition of openness and transparency and their local administration style. Municipalities with a tradition of transparency are to a greater extent using features in Facebook that enable citizen engagement. Hence the organisational context where the engagement takes place is a crucial factor. However, what is often forgotten when trying to understand how engagement emerges on municipality social media platforms is the intentions of the platform providers and the emerging social logic of the platforms in use. A digital platform such as Facebook cannot be regarded as one overall technology choice, but as a platform provider that promotes services and tools along with a considerable amount of conditions and regulations. As social platforms are being adopted and matured, the huge amount of data concerning user behaviour and interaction patterns has changed from being side business to core business for the platform providers. This is applied, for instance, in the possibility to harvest and sell data. Over time, the logic of such platforms has become more advanced and its ability to shape and transform the communication patterns has grown stronger and become critical. So, what implications do such a platform logic have on municipality administrations' use of Facebook? A content analysis of online interaction on four municipalities' Facebook pages during a period of two years was conducted. Approximately 6000 posts and comments were categorised by content, media type and tone. Engagement such as likes, shares and comments were then measured for the different categories.

Empirical findings indicate that municipality communicators have problems both to reach out with information and to create engagement on Facebook. It is important for the communicators to be politically neutral, correct and speak with the voice of the whole municipality (i.e. not too personal). This way of being, however, does not work so well on Facebook. They report having gradually adjusted their work (content, tone, media type and timing) to what is spreadable, sharable and commentable according to a Facebook logic. The communicators say they feel forced to post pictures of blossom trees and check-ins from the lunch restaurant in order to get likes and shares. They know that if they don't do this they will lose citizens' attention and they will not reach out with more important posts. They are aware that posts that are interesting to see and read are not sufficient; posts also need to trigger people to like, share and comment. The social media work needs to be designed in accordance with a unique Facebook platform logic.

This paper aims to contribute to the body of knowledge on IT and learning at work with a special focus on new competence in the public sector. It also extends an existing framework of e-government transparency and citizen engagement by taking into account the role of Facebook as a platform with highly structured strategies for how to foster a special kind of sociality and engagement. The practical contribution implies new knowledge for staff and management in the public sector to develop competence to manage transparency and engagement through social media.

## Keywords:

social media platform, workplace learning, transformation of work practice, e-government, citizens, communicators

# Transforming Municipal Workers' Knowledge-Sharing Practices to Improve Healthcare Waste Management: A Formative Intervention Case Study

Masilela, Priscilla Kgofelo; Lausanne Olvitt (Rhodes University)

This paper reports on research into a two-year expansive learning process initiated by an environmental health practitioner working in a small metropolitan municipality in South Africa. A series of inter-agency workshops enabled a learning process that sought to improve the management of healthcare risk waste. In order to achieve this objective, a wide range of practitioners needed to transform their knowledge and knowledge-sharing practices regarding the management of healthcare risk waste in the Municipality. Guided by Cultural-Historical Activity Theory (CHAT) and expansive learning theory, the practitioner-researcher facilitated a series of Change Laboratory workshops with selected municipal employees and community health workers using the Developmental Work Research methodology.

Since the 1990s, community home-based care facilities in South Africa have grown exponentially, primarily in response to the HIV/AIDS pandemic. The community health workers employed by these facilities provide basic healthcare services in the homes of people who struggle to access formal clinics or hospitals. They typically provide support in the management of pain, treatment of infections and the management of chronic diseases. Certain practices generate what is known as 'healthcare risk waste' that poses an environmental and public health risk due to its potential to contaminate land and water, spreading disease and infection. This poses a challenge for municipalities, in particular environmental health practitioners, who are mandated to ensure compliance and to monitor the management of healthcare risk waste by community home-based care facilities.

The expansive learning process reported in this paper included practitioners from the metropolitan municipal Environmental Health Services activity system and two community home-based care activity systems. The process surfaced several systemic tensions and contradictions that were affecting not only what practitioners *knew* about the management of healthcare risk waste in community home-based care facilities, but also how they *shared* that knowledge with others. The study found that employees working in municipal activity systems knew very little about the forms and functions of community home-based care facilities in their municipality. This compromised their knowledge-sharing practices which were restricted and generally unsystematic, and this in turn contributed to unstandardised, sometimes inappropriate healthcare waste management practices in community home-based care facilities. Knowledge was shared only when and if it was available, and it did not extend beyond individual activity systems. This resulted in a narrow knowledge focus, specific to one context. The study further found that there were no mechanisms to share knowledge effectively or explicitly within and between activity systems. Minutes were poorly documented and waste management practices poorly reported, resulting in management not being able to identify what needed to be addressed.

Amidst these challenges, change laboratory workshops enabled boundary crossing that enabled all the activity systems involved in healthcare risk waste management to share their core knowledge relating to their 'who', 'how', 'what', 'why' and 'when' practices, and to identify differences between their practices. The study found that improved knowledge and knowledge-sharing practices are essential for the development of environmental health practitioners' applied and collective competence – which is urgently needed for effective healthcare risk waste management at the municipal level in South Africa. Institutionalising boundary crossing through Change Laboratory workshops provided a much-needed and important platform to discuss and interact with practitioners in the same field and also provided participants with representational tools to analyse disturbances and to construct new solutions.

## Keywords:

environmental health, healthcare waste management, knowledge-sharing practices, expansive learning, change laboratory, boundary crossing

# Processes and Lessons from Researching Co-Engaged Learning of 'Water For Food' in and across Multiple Agricultural Learning Workplaces in the Amanzi for Food project in the Amathole District, Eastern Cape, South Africa

**Pesanayi**, Tichaona; Tshandapiwa **Tshuma**; Heila **Lotz-Sisitka**; Chamunorwa **Matambo** (Rhodes University, Imvotho Bubomi Learning Network)

Household food security in South Africa remains a national challenge mainly due to water scarcity, resulting in the need to explore approaches and processes that can mediate learning about sustainable water for food such as rainwater harvesting and conservation to farmers in household and smallholder workplaces, and in TVET-orientated Colleges of Agriculture (now known as Agricultural Training Institutes). This paper shares the results of a three-year research project that took place from 2014 to 2016 involving diverse agricultural actors mainly agricultural college lecturers, smallholder farmers, extension officers and local economic development facilitators organised in a learning network named Imvotho Bubomi [Water is Life] Learning Network under the banner of the Amanzi [Water] for Food project ([www.amanziforfood.co.za](http://www.amanziforfood.co.za)). Within the learning network, a series of cultural-historical activity theory informed expansive learning processes were engaged with over the three-year period: 1) identification of need state with local actors across a range of activity systems who organised themselves into a learning network, 2) course activated knowledge engagement around new knowledge of rainwater harvesting and conservation practices into applied change projects, 3) change laboratories with multi-actors in field, 4) collaborative demonstration site development, and 5) expansion of knowledge engagement via use of social media and radio.

The project set out to address two-fold matters of concern, namely a Water Research Commission goal to disseminate and share valuable rainwater harvesting and conservation knowledge into agricultural learning systems, and secondly, concerns amongst farmers, local economic development officials and college lecturers to address contextually located water for food challenges faced by smallholder farmers. The research adopted a formative interventionist developmental work research approach (Engeström & Sannino, 2010) to facilitate the expansive learning of sustainable agricultural water as object of activity in the learning network.

Information on the five mediated learning processes within an expansive learning cycle over the three years was captured via interviews, observations and document analysis and has been the subject of specific studies (Weaver, 2014; Lupele, 2017; Pesanayi, 2017; Lotz-Sisitka et al., 2016). Overall, the data indicates that agricultural water problems were connected, complex and contextual. Smallholder farmers' water problems were contextual in the sense that they were experienced in the garden and fields and influenced by climatic and other agro-ecological and socio-economic factors specific to their locations. They were also historically shaped by local histories of poor quality education, and exclusions under the apartheid state and often ironic continuities of these in the post-apartheid state. Most of these problems were characterised as contradictions between the farmers' aspirations to grow their own food versus lack of water provisioning, water security and water scarcity from drought in rain-fed contexts. This contradiction in farmers' work was aggravated when the farmers' activity interacted with agricultural college lecturers' activity in learning network change-laboratory workshops. The contradiction was aggravated because of the internal contradiction in the college lecturer's activity: despite being mandated to serve smallholder farmer needs, colleges train extension workers and farmers mostly on larger scale irrigation principles and technology while omitting the teaching of low-cost rainwater harvesting and conservation technology and more affordable alternatives suited to smallholder farmers.

This paper traces the expansive learning that took place in the learning network over the three years, giving attention to the five processes outlined above. It reflects on how each of these processes stimulated ongoing expansive learning in smallholder farming workplaces, and in the agricultural training institute curriculum context (a form of boundary crossing learning).

The paper concludes that the learning network approach to inter-sectoral organisation and co-engaged problem-solving over time, conceptualised within a CHAT-informed expansive learning trajectory, was able to deal with some important water challenges affecting both smallholder farmers and agricultural colleges in context. It resulted in ongoing expansive learning, and knowledge co-creation in solving agricultural water problems for small-scale farmers, and seeded curriculum innovation in agricultural colleges, especially via activation of new knowledge via the course, and application of this via the co-creation of productive rainwater harvesting demonstration plots which became a key feature of the programme. The paper also seeks to critically interrogate these processes, and to raise questions for evaluative research, since the project forms part of a National Skills Development System III evaluation case study on learning and partnerships.

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**Keywords:**

learning network, demonstration sites, agricultural learning workplaces, water-for-food

# Navigating Transitions between Work and Further Study: The Inner Workings and Pedagogic Agency of RPL as Specialised Pedagogy

Ralphs, Alan; Linda Cooper (University of Cape Town)

Much research on education, labour markets and work focuses on the transition of young people from education to work. In contrast, the practice of Recognition of Prior Learning (RPL) has come to play a small but significant role in navigating the transitions between work and further study, particularly for those who are under-qualified either because of increasing levels of specialisation, greater regulation of work, and/or because of past disadvantage. However, RPL is frequently misrepresented as a set of *assessment practices* for establishing the credit value of knowledge and skills acquired outside of the formal conventions of academic and vocational learning. Participation in these practices is all too frequently reduced, as Michelson (2005) argues, to Kolbian processes of *reflection on experience* which claim to provide “unmediated access to reality” whilst neglecting “the complex cultural, discursive, and psychological matrix within which experience happens”.

In this paper we contest this over-simplification and provide insight into three different configurations of RPL as a specialised form of pedagogy across four different sites of practice in South Africa: the Workers College in KZN, a private FET provider, and two universities providing RPL for access to undergraduate and postgraduate study. The research for this paper was conducted from 2010 to 2014 and included a specific focus on what we refer to as the *inner workings* of the RPL practices of these four sites, inclusive of a notion of *pedagogic agency* as manifest by facilitators and learners in these different practices. Drawing from the research and the book published in November 2016, the paper speaks to the transgressions involved in affording epistemic authority to specialised forms of experiential learning, thereby contributing to a critical understanding of different cultures of knowledge and expertise in a more inclusive education and training system.

## Keywords:

Recognition of Prior Learning (RPL), transitions, experiential learning, pedagogy

# An Expanded Methodological View on Learning Pathways: A Laminated Systems Perspective

**Ramsarup, Presha; Eureka Rosenberg; Heila Lotz-Sisitka** (Wits University, Rhodes University)

Within the context of sustainable development and the emerging green economy, this paper highlights the need to develop more sophisticated understandings of learning pathways, and the way in which work, education and training systems interface to support the transitions needed for particular forms of work and learning into specialised green jobs.

Despite extensive use of the learning pathways concept in policy, both locally and internationally, it remains a metaphor that is imprecise and often regarded as theoretically eclectic. A central methodological concern that we uncovered in learning pathways research was the difficulties of empirically researching learning pathways in a way that crossed the micro-macro divide, and that could overcome the bifurcation of the empirical career story and the wider system study.

The paper uses two conceptual schemas, to attempt to portray environmental learning pathways as complex social phenomenon. The multi-level perspective of transitioning to sustainable development helped to illustrate the co-evolutionary processes of systems during sustainability transitions. To reinforce this heuristic and strengthen the ontological underlabouring, the paper uses the critical realist notion of laminated systems that enabled pathways to be studied as analytically separate but systemically whole.

Through a focus on the environmental engineer, the paper illustrates the processes and outcomes of learning and work transitions in an important occupation in contemporary professional work in South Africa. It uses in-depth career stories of nine environmental engineers selected on the basis of diversity of context; biographical history and learning pathway profiles. These were subjected to multi-layered analysis alongside a systems analysis of pathways provisioning for environmental engineers. This enabled the identification of various causal mechanisms at different levels and scales of reality (Nuneez, 2014). Occupational transitions are, as shown in the case of the environmental engineer, to be 'non-linear, variegated, complicated, and deeply interwoven with the nature of work and economy' (Sawchuk & Taylor, 2010). This challenges ideas on linearity, with implications for qualifications design, and for how to strengthen environmental engineering education and training (for a scarce skill occupation) within an NQF system involving three sub-frameworks.

The paper raises the importance of understanding the enabling and constraining factors shaping transitions in learning pathways research and provides important insights into how people gain access into specialised jobs within established professions.

The paper thus provides a more substantive approach for learning pathways research, in which the individual learners' learning pathway experiences and absences are not neglected or reified within either a focus on career stories, or wider (open) systems based analysis of learning pathways. It also provides a deeper understanding of the systemic issues associated with learning pathways construction, and of transitioning processes that occur as people 'cross boundaries' in learning pathways construction into specialist environmental jobs.

Finally, the paper synthesises a model for learning pathways research, which offers a way of synthesising educational and occupational learning pathways conceptualised within a laminated system framework.

## Keywords:

learning pathways, laminated systems, environmental engineer

# Community-Engaged Learning and Employability Skills

ID076

**Taylor, Alison** (University of British Columbia); **Milosh Raykov** (University of Malta)

The employability skills of graduates have become a policy focus in recent years in Canada and the US (McKean, Coburn & MacLaine, 2016; Supiano, 2013). Reports of significant levels of unemployment and underemployment amongst university graduates have sparked concerns about education-jobs mismatch (Grant 2012). Within this context, work-integrated learning (WIL) programmes have been touted as a way of improving students' employment prospects and labour market outcomes (Council of Ontario Universities, 2014). Such programmes include cooperative education, practicum, internship, and service learning. However, the aims and forms of work-integrated programmes like cooperative education, practicum, and internships can be quite different from those of community service-learning (CSL). For example, CSL programmes are commonly organised in non-for-profit organisations and focus on enhancing students' sense of civic engagement and social responsibility (Saltmarsh & Hartley, 2011), while other work-integrated programmes are usually focused on developing professional skills (Johnston, 2007). Curricular CSL is embedded in university courses (students participate in unpaid community projects or placements for approximately 20 hours over the semester), while programmes like cooperative education usually involve a semester of paid full-time work for a local, usually private sector employer interspersed with full-time university studies.

Given these differences, one might expect student outcomes from programmes to be quite different. In particular, because of their broader focus, we wonder if CSL experiences are more likely to promote a socially critical vocationalism, involving a critical awareness of the societal and social policy issues influencing the professional role in work-related and community contexts (Peach, 2010). Service learning outcomes are usually described in terms of students' personal, social, and learning outcomes; career development; and a stronger relationship with their institutions (Chambers, 2009; Eyler et al., 2001). But many CSL students are also preoccupied with employability; responses to our survey of university graduates who had participated in service-learning students found that 49% of local service-learning (CSL) and 20% of international service-learning (ISL) students were motivated to participate in service learning to develop employability skills.

This paper draws on our mixed-methods study of graduates from an eastern Canadian university who participated in local and international service learning to explore how it impacted their university experiences, self-reported employability, and subsequent learning and work pathways. Our data include 313 completed surveys with these graduates and 22 interviews. Our analysis of survey data suggests that service learning influenced 39% of students' further education plans and 51% of students' career plans. Interview data suggest further that while service learning was transformative for a small number of students in terms of shaping their career pathways, for a greater number, the experience of participating in service learning helped them learn how to move out of their comfort zone, to become reflective about their learning and relationships with others, and more socially aware. While these kinds of impact may not be included in lists of employability skills, they are arguably critical in contemporary workplaces.

## Keywords:

work-integrated learning, employability, university students



# Relational Agency for Shared Understandings Towards an Integrated Education and Training System of Quality

Reddy, Julie; Heidi Bolton (South African Qualification Authority)

Under apartheid South African society including its whole system for education, training, development and work, was racially segregated and uneven. Following the establishment of democracy in 1994, the system was integrated. Some 17 education departments were merged into a single schooling system. Race-based Higher Education Institutions were merged within regions in the country. A single system for qualifications for Trades and Occupations was developed, that is open to all. The South African National Qualifications Framework (NQF) was the means used to integrate the education and training system, to make it accessible to everyone, and to enable redress, qualifications of quality, and transparency. The approach to standard setting and quality assurance was initially centralised under the South African Qualifications Authority (SAQA) Act; the NQF Act legislates a differentiated approach. Umalusi, the Council on Higher Education (CHE), and the Quality Council for Trades and Occupations (QCTO) oversee the NQF Sub-Frameworks for General and Further Education and Training (GFETQSF), Higher Education (HEQSF), and Trades and Occupations (OQSF).

The three Quality Councils each develop, implement and manage one of the NQF Sub-Frameworks. SAQA's role is to advance the objectives of the NQF, to oversee its implementation and further development, and to coordinate the Sub-Frameworks. From the promulgation of the NQF Act, SAQA has sought to foster and enhance communication, collaboration, and coordination not only between the three Quality Councils, but between NQF organisations in South Africa in general. SAQA's coordinating role through the development and implementation of *inter alia* the NQF Level Descriptors and policies for registering qualifications and part-qualifications on the NQF, recognising professional bodies and registering professional designations, for evaluating foreign qualifications, verifying national qualifications and for recording and reporting misrepresented qualifications and for assessment, Recognition of Prior Learning (RPL) and Credit Accumulation and Transfer (CAT); and the National Learners' Records Database (NLRD), has sought to enhance the over-arching nationally desired character of education and training.

The NQF objectives of systemic integration, quality, access and redress, learner mobility in the system, and lifelong learning for personal and socio-economic development are addressed collaboratively by the main NQF partners. SAQA plays a leadership role; guidelines are provided by the Minister of Higher Education and Training. The main NQF partners are bound to collaborate in line with *NQF Implementation Framework* and the *System of Collaboration*.

Relationship-building is central for the implementation and development of the NQF and under the NQF Act, SAQA has sought to develop 'relational agency' (Edwards, 2014) in the system. Four ideas are central to relational agency (ibid.). The first idea is that relational expertise involves additional knowledge and skills, over and above specialised core expertise. Second, relational expertise involves understanding and engaging with the motives of others. It allows the expertise (resources) offered by others to be surfaced and used. Third, relational expertise is useful vertically (in authority hierarchies), but it is also relevant for horizontal collaboration across practices at similar levels in authority hierarchies. Lastly, relational expertise respects history, but is focussed on the common knowledge created through shared understanding of the different motives of those collaborating, and going forward together. SAQA utilises these principles in the development and implementation of the NQF policy suite. This paper uses Edwards' (2014) concept of relational agency to analyse the extent to which relationships are being built and sustained in the integrated system for education, training, development and work in South Africa.

## Keywords:

NQF, education and training system, relational agency, collaborative inter-institutional relationships

# Implementing Residential Learning Communities at a Liberal Arts College in Japan: A CHAT Analysis

Reid, James (Akita International University)

This paper employs Cultural Historical Activity System Theory (CHAT) to qualitatively analyse the implementation of residential learning communities, known as Themed Houses, at an English medium of instruction Liberal Arts College in Japan. The study examines the practice of implementation from the point of view of administration, faculty supervisors and the student residents. It identifies contradictions arising from the dynamic activity systems that mediate the implementation of Themed Houses, examines how these contradictions have been or could be resolved, and then develops generalisable findings that can be used by other colleges that may be considering similar initiatives.

Research by Lenning and Ebbers (1999) documents the benefits of learning communities that are linked by a common theme. Brower and Dettinger (1998) contend that learning communities are designed to promote group identity and create supportive learning environments that integrate social and academic activities and enhance interdisciplinary connections. Residential learning communities are often implemented on the basis that students with similar interests living in close proximity are enabled to have more out-of-class interactions and supplementary, experiential and reflective learning. It is argued that active faculty members are able to mentor other faculty and students, and that student development can be both academic and socially mediated. Empirical support for the positive effects on student participation in residential learning communities is provided by Frazier and Eighmy (2012) who show that students have reported higher satisfaction levels with their living facilities when the theme that unites their residence is related to their major and they receive intentional faculty interaction. Other research (St. Onge et al., 2003; Tinto, 1998) positively correlates successful residential learning communities with student satisfaction, translating into higher retention rates (Levitz et al., 1999). Additionally, retention of marginalised students can be enhanced when residential learning communities provide a space for these groups to thrive on campus, though these have been criticised for imposing self-segregation (Lum, 2008).

Cultural-Historical Activity Theory (CHAT) is a practice-based research approach used to analyse professional work practices (Engeström, 1987). By incorporating the roles of mediating artefacts (tools), cultural and historical motives of community members, rules conventions and norms, the *use* and *exchange value* of actions and the psychological dimensions of externalised and internalised operations, CHAT provides a multi-layered and multi-voiced way of understanding how communities work toward an objective and provides a lens through which communities can reflect on their practice. In CHAT, a *contradiction* is the term given to a problem or breakdown that occurs when a misfit occurs within the system as a whole. CHAT views *contradictions* not as problems that need money or other tools to be dealt with, but as opportunities for innovation and development. Based on an analysis of *contradictions* in the implementation of Themed Houses, I identify seven findings that could be generalised to other institutions: (1) **Cultural Context** – An understanding of the culture's need for residential learning communities is vital to improve retention, empower marginalized groups, aid students' social, spiritual and academic growth, cultivate future careers and promote intercultural exchange; (2) **Communication** – The rationale for and benefits of residential learning communities should be clearly communicated to the *Community of Significant Others*: students, faculty, staff and other stakeholders. Without clear communication, satisfaction and motivation may decline; (3) **Tools** – Appropriate mediating artefacts are needed. Ideally, a themed residence should be designed like a conventional house to aid students' natural interaction; (4) **Community identity** – Residential learning communities need to be organised around common themes of interest for students that require regular interaction and practice; (5) **Motivation** – an understanding of the *Use Value* and *Exchange Value* of an activity is required. Money and credits extrinsically motivate faculty and students; (6) **Time constraints** – Residential learning community activities must complement rather than detract from academic commitments and/or club activities; (7) **Rules** – *Rules*, norms and conventions need to be continually analysed with reference to the *Object*, and need to be respected while some may need to be reassessed.

## Keywords:

residential learning communities, themed houses, Cultural Historical Activity Theory

## Researching Green Work – An Opportunity to Rethink How We Determine Skills Demand

**Rosenberg, Eureka; Daryl Mclean** (Rhodes University)

In the past decade there have been increasing efforts to 'green' national economies, opening up a new field of research on green work (see CEDEFOP, 2012; ILO, 2011). A green economy is "one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive" (UNEP, 2011). Green work could involve new specialisations within existing occupations, for example environmental engineers (Ramsarup, 2016). Most often, it would involve sensitisation in existing occupations to new environmental requirements. Sometimes it could involve completely new occupations. And, it could result in jobs losses (ILO, 2011).

There is widespread agreement that human activity within the dominant cultural-economic systems has exceeded planetary boundaries through the build-up of pollution and the loss of natural resources (Rockström et al., 2009). At the same time, Earth's citizens do not equally share the benefits from this activity, so while we are overshooting planetary boundaries, we also have shortfalls (Raworth, 2017) resulting in poverty and injustice. For long time, a dominant socio-political discourse has been that Africa in particular could not afford to address environmental issues, because it would negatively affect development and jobs. Now, the notion of a green economy brings the promise that, by taking better care of nature, we can create new development opportunities and new jobs (see Maia et al., 2011). However, how to do this is not necessarily clear.

South Africa has struck a green economy accord between government, business and civil society (DED, 2011) and the National Development Plan (RSA, 2011) notes it as a key direction. Almost every sector and region in the country has a green economy policy. However, a review of these policies (Rosenberg et al., 2016) indicates that they tend to be vague on specifics and at times contradict each other. Death (2014) argued that there is a lack of consensus in South Africa's green economy discourse, and that some of the prevalent discourses, if put into practice, may create more inequality and injustice. Greater clarity is therefore needed on the contours of the transformation required to address environmental issues while achieving inclusive development opportunities and investing in work for all. What we do know is that green work requires new skills. To both inform the debate on the transformation required, and advise educational planners on the kinds of skills required, skills demand studies are needed. CEDEFOP, ILO and others (e.g. CEI, 2011) have proposed methodologies for green skills studies. This paper contributes by proposing a critical analysis of the notion of 'demand' and associated concepts, and the use of a multi-layered methodology for determining demand. It does so by reviewing a number of 'green skills demand' studies recently undertaken in South Africa (some of which have been published on [www.greenskills.co.za](http://www.greenskills.co.za)) against a critical realist framing that takes economic and environmental injustices into account.

During 2015-2017, several demand studies were undertaken in the Green Skills programme, a multi-university project supported by the Department of Environmental Affairs' Green Fund. These studies used contextual driver and value chain analyses to identify leverage points in the system, where the introduction of 'green' skills could unlock ecological, social and economic benefits. The studies encompassed mining, agriculture, the chemical industry, motor industry, natural resource management in public works programmes, energy efficiency and renewable energy, sustainable transport, and green procurement in government. They explored the competencies needed to do this work, the associated occupations and in some cases, the supply of these skills. A learning assessment funded by UNITAR took an in-depth look at the competencies of individuals and teams driving green economy initiatives. This paper will present the methodological insights gained in the review of these studies, in relation to new economics theory and the depth ontology of critical realism as under-labourer for multi-layered methods to determine demand in systems. An example of insights are as follows.

- The studies on Mining, Paints and Catalytic converters showed that conventional market based value chains need to be extended to include regulatory functions; this is supported by Raworth's (2017) point that the market is only part of the economy; there are also household economies; state economies; and the economy of the commons. If these are taken into account, latent demand for green work becomes visible.

- Other common concepts to interrogate are cost-effectiveness (challenged in the procurement study) and the primacy of industrial scale processes (challenged in agriculture for emerging and organic farmers) as well as the re-introduction of ethics into food production practices.
- Triangulation of data sources is important but findings need to be analysed not only in terms of their convergence, but also their divergence; here the critical realist ontology is useful for interpreting contradictions in the data.

It is hoped that a discussion of these and other emerging insights will further inform insights on shifting mainstream economic discourse and associated practices including skills demand determination, towards greater social-ecological sustainability and economic justice

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**Keywords:**

green economy, green skills, skills demand

## Exploring Convergence and Differences in Theorising Learning in, for, and with Work

**Olesen**, Henning Salling (Roskilde University); **Helen Bound** (IAL, Singapore); **Yrjö Engeström** (University of Helsinki); **Peter Sawchuk** (Akita International University)

The symposium will include a presentation of and dialogue between a number of approaches to the theorising of learning which base their understanding in people's life experience in a broad sense. Much mainstream research in our field is still based in either the idea that the logic of work processes and requirements seamlessly define and enable learning processes, or reversely that learning is an individual process of acquiring skills and competences which can be didactically engineered by appropriate teaching and/or management. Both fail to grasp the holistic subjective process of work and life experience and its structuring of the emotional and cognitive process of learning as an aspect of meaning making and work identification. In order to establish a more theoretical understanding, it is necessary to "flip the lens" (Bound) from teaching to learning, and likewise to realise that work is not only a targeted technical process, but a life world in its own right. People learn while living for reasons that are not defined by set goals.

But there are also a number of approaches which seek to establish new frameworks, not defined simply by the objective work process but the subjective meaning of it, and other approaches which strive to understand the individual subject as a result of social, historical and situational circumstances. A relatively broad stream of research developments has taken cultural psychology and activity theory (CHAT) as a broad framework emphasising the historical and cultural nature of work in and for which learning may take place. Studying work in its form as independent and transferred social practices – or discourses – that have set and also enabled the learning of mastery, form another important orientation. Finally a stream of research into the subjective aspects of reflecting individual and collective life experiences, formed by class, gender and ethnicities for example, have studied the subjective aspects of particular careers, occupational orientations and also political engagements. The symposium will seek to illuminate some of these approaches and facilitate a dialogue between different traditions of thought that seem to converge or overlap in many ways, yet also express different perspectives and priorities.

It is the presumption that this dialogue will involve, among others, questions like:

- How does each approach relate to work – as work process, as workplace, as form of economic exchange, as a form of socio-economic struggle, as cultural construction, and so on?
- How does each approach theorise the significance of work in individual subjects?
- How are the concepts of work identification and orientation treated?
- How are historical environments and dynamics – e.g. economic, sectoral or technological change – attended to in each approach?
- How are the requirements of work on an individual level accounted for and with which concepts – e.g. knowledge, skills, competences, attitudes, habitus, and so on?
- How are inter-cultural diversities in culture and socialisation and the changes of globalisation attended to in each approach?
- Which concepts of collective consciousness and collective agency are included?
- What is the role of training, education and informalised learning in the development of knowledges, skills and competences?

The presenters at the symposium will contribute with a background paper on some of these issues. In the symposium, each will give an introduction to their paper (20 minutes), and we will structure a real dialogical discussion among them, and between them and the audience.

### Keywords:

learning theory, work, cultural history, activity, life history

# Liminal Ecologies of Learning: Perspectives on Learning and Agency

Savin-Baden, Maggi (University of Worcester)

ID081  
PAPER AVAILABLE

At the heart of ecological learning are the concepts of liminality, transition, transformation, and fluency. However, in order for students to progress through an ecological learning journey engagement with the liminal tunnel, it is necessary in order to shift through liminal learning zones and move into a state of learning fluency. Liminal zones are not to be seen as dead, wasted or terrible stuck places but instead as places of growth. There is often a sense that liminal spaces or tunnels, in which these liminal zones exist, are abandoned lots or graveyards. It will be argued here that liminal ecologies of learning can be mapped in ways that help learners and teachers to view 'the liminal' as (a) space(s) to examine not only human learning relationships but also as valuable suspended states where the past is held in transition and new moves toward learning fluency can be made.

This paper presents and critiques the shift into the liminal tunnel, through liminal zones, the subsequent ecologies of transformation and the transitions into different forms of learning fluency. It draws on a range of studies and literature across higher education, including work on digital fluency, learner identity, disjunction and recent work on virtual humans.

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## Keywords:

liminal ecologies, learning, transformation

# Methodology Development for Researching Work and Learning: The Glow of Unwork? Issues of Portrayal of Qualitative Research

**Savin-Baden, Maggi; Gemma Tombs** (University of Worcester)

In this paper, we suggest that portrayal of research is often undervalued and seen as 'unwork' (Galloway, 2012). Portrayal is often seen as issues that are relatively straightforward by qualitative researchers, and invariably refers to putting the findings of the study together with excerpts from participants and usually, but not always, some interpretation. It tends to be seen as the means by which the researcher has chosen to position people and their perspectives, and is imbued with a sense of not only positioning but also a contextual painting of a person in a particular way. Yet there are an array of issues and challenges about what portrayal can or might mean in digital spaces. In this paper we argue that researching education in a digital age provides greater or different opportunities to represent and portray data differently and suggest that these ways are underutilised. For example, for many researchers, legitimacy comes through the use of participants' voices in the form of quotations. However, we argue that this stance towards plausibility and legitimacy is problematic and needs to be reconsidered in terms of understanding differences in types of portrayal, recognising how researchers position themselves in relation to portrayal, and understanding decision-making in relation to portrayal. We suggest that there need to create new perspectives about portrayal and concept, and ideas are provided that offer a different view. Three key recommendations are made:

- Portrayal should be reconceptualised as four overlapping concepts: mustering, folding, cartography, and portrayal. Adopting such an approach will enable audiences, researchers and other stakeholders to critique the assumptions that researchers on tour bring to portrayal and encourage reflexivity.
- Researchers on tour should highlight the temporal, mutable and shifting nature of portrayed research findings, emphasising the need for continued and varied research to inform understanding.
- There is a significant need for greater insight into the influence of portrayal, as well as the difference between representation and portrayal. Future studies should prioritise this, and ensure that portrayal is considered and critiqued from the outset.

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## Keywords:

portrayal, reflexivity, research, qualitative research, representation

# Dialectical Materialist Methodologies for Researching Work, Learning, Change: Implications for Class Consciousness

Sawchuk, Peter H. (University of Toronto)

ID083  
PAPER AVAILABLE

In this paper I propose to review and discuss the application of dialectical materialist methodologies for research on work and learning with special attention on the notion of class consciousness. While the bulk of my attention in this paper is devoted to outlining these methodologies, their nature and their uses, the matter as a whole will be framed by a concern for a robust appreciation of workplace learning throughout its full range of variation, and, ultimately, the role of class conflict and the emergence of class consciousness in the context of the workplace.

Specifically, I will begin by presenting and explaining two premises. The first premise revolves around the broader claim that the concrete reality of work, learning and change may be seen to depend upon—ontologically and epistemologically—the inter-penetrating connections of parts and whole summarised by the dialectical materialist methodological notion of a “philosophy of internal relations” (e.g. Ollman, 1993). The second premise involves the significance of granting the existence of thinking, feeling, knowing, choice-making and acting human subjects who can and do play a role – within and beyond themselves vis-à-vis a philosophy of internal relations – in change. Taken together, I will argue these two main premises suggest a reason for considering the value of dialectical materialist methodologies in our efforts to carry out research on the phenomena of work, learning and change.

The bulk of the paper, however, is devoted to exploring what Bertell Ollman (1998) referred to as the dialectical “Humpty Dumpty problem” (Ollman, 1998): i.e. “No one will deny, of course, that everything in society is related in some way and that the whole of this is changing, again in some way and at some pace. Yet, most people try to make sense of what is going on by viewing one part of society at a time, isolating and separating it from the rest, and treating it as static. [...] As a result, looking for these connections and their history becomes much more difficult than it has to be.” (pp. 339-340). In response to this I will lay out the meaning and usefulness of various specific methodological procedures and considerations. I will argue these procedures and considerations each contribute to examining complex empirical realities that constitute work, learning and change phenomena. Specifically, this portion of the papers will apply a philosophy of internal relations in a discussion of the following: (a) key procedures (involving the recognition of “extension”, “level of generality”, “standpoint” and “contradiction”) (Ollman, 1993); (b) discussion of a “systematic-categorical” approach to research and concept development; and, (c) the important caveats/considerations provided by Adorno’s argument on “negative dialectics” (1973). Illustration(s) from the author’s own previously published work, involving public sector workers in Canada, will be discussed in order to help demonstrate the use of such methodological procedures and considerations, with attention to practical concerns of methods as well as analysis.

The closing section of the paper comments on how various concepts and theories of human learning may relate to dialectical materialist methodologies with an emphasis on the example of what has been termed the Vygotskian Project and Cultural Historical Activity Theory (Stetsenko, 2009). I will address examples from the research literature that have sought to make an explicit link between dialectical materialist methodologies on the one hand, and learning, work and change on the other (e.g. Langemeyer & Roth, 2006; Engeström, 1987; Roth, 2007; Sawchuk, 2003, 2013; Stetsenko, 2016), while summarising the challenges and prospects for understanding class consciousness as a vital dimension of such research.

## Keywords:

dialectic, methodology, learning, CHAT, class consciousness



# Transformation of the Professional Class Structure? Negotiating Power, Skill Use and Political Attitudes in Emergent “Knowledge Economies”

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The economic class structure of advanced capitalist economies has been shifting in recent decades with the decline of traditional working classes and growth of professional and managerial positions. Prior research on professional occupations has conflated four distinct class positions: professional employers; self-employed professionals; professional managers; and professional employees (see Livingstone, 2014). This paper focuses on a comparative analysis of these four professional classes and particularly on change and continuity in their differential negotiating power based on ownership and control of relations of production, the differential utilisation and recognition of their skills and knowledge, and their views on the rights of employers and employees as well as preferred future organisation of work. Comparisons will be made between professional classes generally, as well as among engineers and nurses as two of the most prominent professional occupations. Data sources include five national surveys of the entire labour force in Canada conducted during 1982, 1998, 2004, 2010 and 2016, as well as sub-samples of engineers and nurses from the 2004 national survey and surveys and in-depth interviews with engineers and nurses in Ontario, the largest province, conducted in 2016-17.

A working assumption is that professional employees are playing an increasingly pivotal role in the labour process of advanced capitalism economies as their specialised knowledge is used to design, perform, review and adapt more information-based production activities. The “capture” of this specialised knowledge is seen as especially vital to continuing productivity and profitability by private capital. Conversely, it can be argued that professional employees are among the most highly organised groups of hired skilled labourers, with substantial potential to lead progressive labour movements early in the 21st century. We can posit that professional employees with greater negotiating power (as indicated by their association and union membership as well as delegated workplace authority) may experience greater skill recognition and reward, as well as a stronger sense of employee rights and preference for self-management. These relations among professional employees will be assessed for those in private, public and non-profit sectors of the economy. Comparisons will also be made with these relations among professional owners, self-employed professionals and professional managers.

In addition to these comparative trend analyses based on the data from the 1982-2016 national surveys for professional owners, self-employed professionals, professional managers and professional employees, closer analyses of these relations in the current period will be conducted based on the large-scale surveys of engineers (N=585) and nurses (N=1120). In addition to surveys that replicate the same information as the national surveys, these surveys probed other issues specific to engineers and nurses respectively and were followed by in-depth interviews that addressed relevant questions in more detail. Selected comparisons will also be made with similar data on engineers and nurses from the 2004 national survey.

Finally, comparisons between the national samples of these four professional classes and the 2016-17 samples of engineers and nurses will be made to assess similarities and differences in relations between negotiating power, skill recognition and political attitudes between professional classes across these general and specific occupational groupings.

The findings suggest the need to distinguish between these four professional classes in future research on professions. Implications of these findings for the transformation of relations between work demands and training requirements for professional occupations, for improving job design and use of specialised knowledge, and for the future of the labour movement are suggested.

## Keywords:

professional classes, workplace power, professional training, skill use, political attitudes, knowledge economies

# Taking Care Seriously: Transforming Practices by Design

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The research on the design and use of information systems within healthcare settings has often focused on electronic patient records and top-down implementation of large-scale information systems. What this paper explores is two cases of bottom-up design processes within small-scale digitalisation processes within healthcare where the design vision has been to preserve the values that are essential for caring practices. The paper takes point of departure from the organization of work and learning from a socio-technical perspective.

Learning takes place everywhere from when we are born until we die. Work is being fundamentally transformed due to technology developments and new digital services at hand, not merely by automatisation of existing tasks, replacing routine jobs and making work more effective, but also by leading to completely new tasks and creating new ones as well. Thus, the learning conditions and challenges at the workplace call for redefining and designing competences and strategies for socio-technical environments that make the individuals, practitioners and professionals more prepared for their adoption of and engagement in new technological advancements, i.e. learning in a digitalised context. Learning encompasses formal, informal and incidental learning at the workplace in context, taking into account organisational, social and technological aspects which influence how, when and why the learning takes place.

Adult learning takes the point of departure from an increasingly digitalised workplace. It no longer makes sense to use the division between schooling, as a place for learning, and the rest of life, as a place for applying what has been learned (Fischer, 2000). The blurring of boundaries between work life and private life, between public and society means that we need to study something as a moving target, i.e. changes. Studying ongoing changes of digital infrastructures at the boundaries will contribute to the understanding of how industry and businesses can facilitate for their professions and workforce to keep up the pace with the advancements of digital infrastructures and also to the understanding of the blurred boundaries between private life and working life.

Boundaries come from having different backgrounds and diverse ways of communication (Wenger, 2000). Within communities of practice, boundary bridging is described as a boundary relation, which consists of two intertwined parts: boundary objects (artifacts, will be elaborated on below) and brokering (activities and situations) (Wenger, 1998; Wenger, McDermott, & Snyder, 2002). Understanding boundaries and differences between groups is crucial when considering "social learning systems", according to Wenger (2000).

The empirical data is based on a two-case analysis, where two action research projects are the grounds for the empirical data. In both cases, the focus has been on designing digital artifacts in care settings and both empirical cases were two years long, with a range of action research interventions which will be further discussed in the paper. The empirical data consists of observations, interviews, focus groups and workshops. The paper discusses values and designing at the boundaries alongside workplace learning issues as a basis for conceptualising deeper knowledge of how a digital artifact can facilitate these changes. The paper focuses on the caregivers and how being a part of a design process can also be a workplace learning process. The learning aspects are analysed from a boundary learning perspective. The formation of boundary practices where the caregivers and the patients meet, is also explored and discussed from a learning perspective. The research question that this paper explores is: *How can the digitalisation of caring situations and learning in design be understood from a boundary perspective?*

## Keywords:

design, workplace learning, learning at the boundaries, boundary practice, information systems

# Transition at Work: Introducing Video-mediated Consultation to Cancer Rehabilitation

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The research on virtualisation of work and education is in its infancy. Even though video-technology has been in place in many classroom settings as well as in many business areas, virtualisation of the workplace has not been explored to the full extent. For teachers, virtualisation is concerned with much more than how digital technology can be used for learning in classrooms or be used to support and change administrative and communication tasks; it is also concerned with the essence of education; that of what kind of knowledge, competencies and skills, students need to be prepared for living and acting in a digitalised society. Similarly, for nurses in a caring work context virtualisation is concerned with the essence of caring – what kind of knowledge patients need to handle for living and acting for their quality of life. Thereby, learning at work is different from learning in school as at work, learning is rarely the primary task but is concurrent with ordinary work tasks. However, in this case, a part of the nurses' work is to educate the patients so that the patients become more skilled and empowered in self-care, which means that in this particular case, learning at work is an articulated and integrated part of the clinical practice. Further, the learners are adults who already have developed professional skills and identities including habitual ways of working in specific contexts within specific communities.

In this paper *we explore the question of whether virtualisation may have impact on the co-creation of caring conversation and what learning aspects can be derived from using such virtual clinic*. The paper is based on a study of video consultations when caring for patients that have radiotherapy induced damage to their pelvic area after cancer treatment. The empirical data consists of observations of the video consultations and interviews with the patients and the nurses. The empirical data is also based on observations of face-to-face consultations at the clinic, at the Swedish hospital where this study has been conducted. The patients have problems with urgency; for instance not being able to control their bowel movement or urination or, dealing with constant pain, this particular group of patients had problems getting out of the house to visit the clinical practice. The nurses and patients have been using a video-consultation tool as a means to conduct their caring conversations. Patients are able to stay in the privacy of their own homes, due to the virtual clinic.

The nurses were quite nervous about this part of the project; they had low expectations on this working and actually thought that the patients would feel the need to tidy up their homes or put on make-up. What we have seen from this ongoing study is that the patients do not do this; instead, they invite the nurse into their kitchens with their dirty dishes and run to the toilet during an ongoing video consultation which they do not do at the clinic when they have regular consultations. Patients also point towards the pain areas meaning that they use the full potential of the technology. However, physical contact is not possible and some patients missed being able to hug the nurse during a consultation. One patient that had been a part of the clinical practice for years opened up tremendously, stating afterwards that she was so comfortable that "something just happened" and she told the nurse everything. This was information that she had been withholding for years and that was most definitely the deeply buried source of problems that was affecting her progress. This implies that, though the study is ongoing and the results are preliminary, the virtual-ness and the notion of staying home, has most definitely had influence.

The learning aspects for both the nurses and the patients are explored and the so-called "golden standard" that is known from the medical literature, where the face-to-face consultation is the key element in care is discussed as a part of our findings where we see the need for a new, digitalised "golden standard". This standard is needed in a more digitalised society where, in some cases, such as this one, patients appear to be more comfortable in the virtual clinic than in the face-to-face consultations. What this paper thereby explores is the learning aspects of conducting such virtual consultation as an alternative way of the golden standard and aims to explore how a virtual clinic can be understood.

## Keywords:

cancer rehabilitation, virtual clinic, workplace learning, information systems

# Work Integrated Learning for Educators: The Case of the Fundisa for Change Teacher Education Programme

Songqwaru, Zintle (Rhodes University)

The South African policy on the minimum requirements for teacher education qualifications specifies requirements for the development of learning programmes. One of the key underpinning principles that has been identified is competent learning. Competent learning is framed as a 'mixture of the theoretical and the practical; the pure and the applied; the extrinsic and the extrinsic; and the potential and the actual' (DHET, 2015: 10). The policy also provides guidelines on practical and work-integrated learning (WIL). The policy describes five types of learning and knowledge that should be selected and mixed based on the purpose of the learning programme.

In 2011, the Council for Higher Education, which is the Quality Council for Higher Education, responsible for quality assurance and promotion produced a Work-Integrated Learning Guide for Higher Education Institutions. The guide was intended to prompt programme and curriculum developers to consider the educational purpose and role of work-integrated learning in teaching and learning (CHE, 2011).

Fundisa for Change is a South African national teacher education programme that aims to enhance transformative environmental learning through teacher education. The programme is predominantly offered to in-service educators. The programme has been established as a collaborative partnership initiative aimed at combining sector (state, parastatals, NGOs) efforts to strengthen systemic impact. The core objective of the programme is to strengthen the teaching and learning of environmental and sustainability content knowledge and concepts in schools.

The focus of this paper is to examine the Fundisa for Change programme's practice in work-integrated learning in relation to (i) conceptual framework for WIL, (ii) curriculum design and development for WIL, (iii) teaching and learning for WIL, (iv) assessment for/of WIL, (v) partnerships for WIL, and (vi) the management of WIL in the programme.

## Keywords:

professional development, transformative learning, environmental learning, work-integrated learning

# Mobilising Freirean Pedagogical Practices in South Africa and Canada during Facilitator Training

Steer, Ashleigh (University of Cape Town)

Popular education: “it’s about making the invisible, visible” or “denaturalizing the natural” so that both learner and teacher can be empowered in an exchange of knowledge. This paper sets out to discuss findings from a comparative study of four Popular Educators using Freirean pedagogical practices in Canada and South Africa and discusses how different country’s social, cultural and historical contexts affect their pedagogies.

This study explores how critical pedagogy addresses the mobilisation of theory and its application into practice. It adds to the literature on how pedagogies are contextualised and the factors that influence this contextualisation. A rationale for this study was that increasingly through globalisation, communities are continuing to change, expand and flourish; because of this, it has become increasingly evident that the field of education would greatly benefit from the addition of knowledge regarding how different social, historical and cultural contexts influence and affect pedagogical practices.

The research took place in both Cape Town, South Africa and Toronto, Canada and utilised three forms of qualitative data collection tools: interviews, observations and document analysis. The researcher observed two days of workshops for each organisation in order to observe the interactions among participants as well as between facilitator and participants, and to examine the pedagogical practices of the facilitators. Through the four days of observation, detailed field notes were generated. The researcher also conducted interviews with two facilitators from each programme to gain a better understanding of the personal experiences and resulting personal perspectives, as well as the theoretical perspectives that have influenced their pedagogical practices.

Interviews were also conducted with two participants from each organisation. The sample of the population was determined based on pre-selected criteria that would allow for the representation of the diversity amongst the participants from each organisation. Document analysis was conducted using annual reports and organisation information pamphlets from each organisation to acquire a more holistic understanding of some of the other contextual factors that could affect the facilitators’ pedagogical practices.

As a result of conducting these different forms of qualitative data collection, the researcher found that the different forms, such as observations and interviews, often resulted in contradictions within the data and thus used results from the document analysis to explain some of the potential contributing factors to these contradictions.

Preliminary findings suggest that it is not only the country’s social, cultural and historical contexts that influence the facilitator’s pedagogical practices but also their individual experiences throughout their lifetimes, such as experiences involving racial and gender discrimination. Another factor affecting the facilitator’s employment of Freire’s pedagogical model within their pedagogical practices is the individual organisation’s contexts, including factors such as stakeholders, organisational funding and pre-determined programme outcomes.

These preliminary findings indicate that further research into what and how contextual factors influence and affect pedagogical practices, is imperative in order for a more holistic understanding of how to construct and mobilise contextually appropriate pedagogies.

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## Keywords:

context, pedagogy, Freire, conscientisation, power dynamics, indigenous knowledge

# Exploring a Conceptual Framework for Understanding Workplace Knowledge: The Case of RPL (APEL)

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Historically, Recognition of Prior Learning globally “was proposed as an assessment-led practice for establishing the validity of equivalence claims without risking the integrity of academic standards or the public confidence in the institutions offering such qualifications” (Cooper & Ralphs, 2016: 2). RPL, or Prior Learning Assessment (PLA) in the USA and Assessment of Prior Experiential Learning (APEL) in the UK, elicits various connotations depending on the country and ideological focus. As Harris pointed out, RPL is ‘both a philosophy and a method’ (Harris & Andersson, 2006: 8). Internationally, RPL fits within the context of both the discourse of lifelong learning and the provision of labour market opportunities (Cooper & Ralphs, 2016). Although this is true for the South African context as well, within South Africa there is a further, more specific, focus and context for RPL. This is evident in both the SAQA and QCTO policies that govern the implementation of RPL in the South African occupational sector (SAQA, 2013; QCTO, 2016), as well as the White Paper for Post-School Education and Training (DHET, 2013).

In South Africa, the aim of RPL is not merely to promote labour mobility or lifelong learning; rather it is seen as a tool for transformation and redress (DHET, 2013). This focus is still seen as so critical in the South African context that the Department of Higher Education and Training (DHET) in South Africa has implemented a new national Coordination of Recognition of Prior Learning (RPL) Policy (March 2016) to ensure that RPL remains at the forefront of the national agenda for the Post School Education System. It intends to be “a strategic policy which places RPL firmly on the national education and training agenda, and holds SAQA and the QCs accountable to perform their roles in relation to RPL as stated in the NQF Act” (DHET, 2016). The use of RPL as a tool for equity and transformation links to the definition of RPL in the 2013 SAQA RPL Policy as “a process through which non-formal learning and informal learning are measured, mediated for recognition across different contexts and certified against the requirements for credit, access, inclusion or advancement in the formal education and training system, or workplace” (SAQA, 2013: 5). This provides for the use of RPL as a tool to align the prior learning and workplace knowledge of candidates to a relevant occupational qualification.

This paper sets out to explore the first stages of the application of a conceptual framework to identify different kinds of knowledge and its components in the workplace. It is based on research into a Recognition of Prior Learning (RPL) pilot project, which is aimed at drawing out the knowledge of machine operators who operate a high-speed packaging line in Cape Town, South Africa. The pilot project is focused on aligning and accrediting that knowledge to an appropriate occupational qualification in order to assist the operators in achieving the qualification based on their prior workplace knowledge.

The paper will first contextualise and discuss the significance of RPL in the South African context, and then address the question of how knowledge within the workplace has been identified during the implementation of the conceptual framework. Questions around what, and who, defines knowledge in this context, require critical evaluation. While the official occupational qualifications provide a specified framework for the kinds of knowledge required for different occupations, it is not always possible to link this codified knowledge to the more tacit ‘prior knowledge’ of candidates in the RPL process. The discussion in this paper draws on the work of both Gamble (2016) and Winch (2012) and explores the implementation of a conceptual framework to determine its capability to identify the different types of knowledge that were encountered, and to operationalise these conceptual categories as they relate to the empirical data gathered during the RPL pilot project. Working from the context of the workplace, the implementation of this conceptual framework attempts to extrapolate, using the conceptual categories, from the workplace knowledge back to the occupational qualification, instead of drawing on the qualification to determine the workplace knowledge.

## Keywords:

vocational knowledge, RPL, APEL, occupations, workplace knowledge

# Datafication of Professional Practices: A Posthuman Exploration of New Accountabilities and Fluencies

Thompson, Terrie Lynn (University of Stirling)

The growing datafication of professional work is evident in responsibilities, activities, and decision-making increasingly distributed across crowdsourced data, predictive analytics and machine learning; the traces of online activities populating global databases; bots that automate online tasks; and new regimes of accountability and surveillance implicit in many digital interactions. Most days, most workers will generate, interact with, and interpret some kind of digitally-rendered data: some knowable and accessible by workers and much that churns quietly in the background.

Gray (2016) describes the processes of datafication as “ways of seeing and engaging with the world by means of digital data” (para 3). As work processes and professional work and learning practices are increasingly outsourced to digital actors it seems the digital – and particularly digital data – evokes more complex ways to engage with the world. Datafication, digitalisation, and automation are part of the new discourse in work and learning practices now taking on a new intensity. Transformations and transgressions abound. This paper examines one thread of this debate: how professional practices and accountabilities are being reconfigured as new assemblages of digital data stir up a myriad of tensions. Alongside this are questions of how datafield work and work-learning can be better researched.

Some of the enthusiasm driving the scale of digitisation and computerised analyses seen today is the way issues can be made simpler and different things made visible. But this visibility brings new predicaments. Sylvester (2013) suggests that datafication turns processes, previously invisible, into data that can then be “tracked, monitored, and optimized” (para 6). Marsden (2015) warns that the outsourcing of the management of data to algorithms has created a significant shift in responsibility and control. Yet amidst these troubling developments, Edwards and Fenwick (2016) point to the presence of a powerful discourse that encourages professionals to view digital technologies as a “natural and naturalised part of their work” (p. 215).

To examine changes in digitally-mediated professional practices – specifically, datafication – I report on the findings of a research project of a 16-week online postgraduate course (43 students) that examined how the use of learning analytics, alongside social network analysis and visualisation software, informed and influenced both research and online teaching practices (see also Wilson et al., in press). The growing swaths of trace and archival data online have opened up new ways to scrape, analyze, and visualise data; data that often then informs professional decisions. I draw on posthumanist heuristics (Adams & Thompson, 2016) to reframe notions of data and the ensuing collateral effects of datafication.

Issuing fundamental challenges to how we envision humans and their relational surroundings, posthumanism asks us to attend to the everyday things of our world. Posthumanism is not about letting go of our humanity and machines taking over (Adams & Thompson, 2016). Rather, it seeks to correct humanist assumptions that “we are autonomous beings who are unambiguously separated from our ... earthly surround” (p. 2). Posthumanism takes an emphatic turn towards nonhumans. Called into question is the givenness of the differential categories of “human” and “nonhuman” (Barad, 2003: 808).

Attuning to the material forces and relations of digital data in this study affords insights into how workers’ ways of working and knowing are increasing distributed across an array of digital things. Given that our “intimate and often ubiquitous relationships” with digital things must be reckoned with (Adams & Thompson, 2016: 2), there is a need to understand and critically question changes to, and implications of these changes, across a range of professional practices. Looking more closely at how such work is performed helps to question who-what is doing this work. In the swirl of datafication practices, who-what is being datafied? At the very least, those researching and working in digital spaces are looking at a re-distribution of labour between human actors and their digital counterparts.

However, Gray (2016) draws attention to asymmetries of resources and capacities to participate in digital data-related processes. Such asymmetries highlight the need to consider a range of new digital fluencies required not only to

manage day-to-day work but also to invite workers to critically question the implications of increasing datafication on them and their work amidst larger global developments. Gray (2016) highlights the importance of theorising the political interventions needed to “reshape processes of datafication” and offer “new vocabularies of ‘data speak’ and new repertoires of ‘data work’ to ensure that different publics have the required literacies and capacities” (para 16). I conclude by considering the findings of this study in light of capabilities required by professionals as they engage in new forms of “data speak” and “data work” to reckon with, and interrupt, de-up/skilling of professional work. To reconceptualise human beings in relation to the other-than-human world also means re-thinking research practices. This paper creates openings to explore new ways we go about researching these kinds of questions.

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**Keywords:**

posthumanism, datafication, digital research methods, digital work, digital literacies, learning analytics



# The Workplace in Transition: Exploring Emerging Challenges and Demands for New Competence

**Hult, Helena Vallo** (University West, NU Hospital Group); **Katrina Byström** (Department of Archivistics, Library and Information Science, Oslo and Akershus University College of Applied Sciences, Norway)

Digitalisation of society and the workplace is transforming the ways we work and learn. Not merely by automating existing tasks, replacing routine jobs and making work more effective, but also creating new tasks as well redefining competence, challenging and reshaping the professions. There has been renewed attention on the interplay between the social and the technological in context of digitalisation and recent trends toward self-service and IT consumerisation, i.e. blending consumer and enterprise technologies at work. Room is given to employees and customers rather than IT departments as leaders in the digital transformation, and research topics have evolved from computer-aided work towards reflections of the technological development and digitalisation in general. While there is no common definition of the digital workplace, one definition that emphasises the social, instead of the technological change is that digital workplaces occur when people collectively perform their work in digital, rather than physical work spaces, where the transition towards “peopleless offices and officeless people” brings new opportunities and challenges.

In this paper, we argue that there is a severe need for a broader conceptualisation of the digital workplace, beyond focusing on specific IT applications or tools. The paper sheds light on emerging challenges related to the digitalisation of workplaces, aiming for an understanding of the changing prerequisites for work practices and competence. The research question is: *What kinds of changes are emerging and how do they challenge the (digital) workplace?*

This paper reports on preliminary findings from an R&D project in Swedish healthcare and a follow-up focus group interview on the digital workplace. The research approach is qualitative and action-research oriented, with an aim to gain knowledge through collaboration and intervention in real settings. Preliminary issues on emerging changes and challenges related to the digital workplace are listed below.

- Flexibility, performance and workplace learning
- Transformation of work practices
- Security and integrity issues
- Leadership and issues of responsibility

This paper has addressed challenges related to emerging digital workplaces. Clearly, as digitalisation increases, the conditions for work and workplace learning changes. Digital tools are already an integrated part of everyday work. Along with this integration, work practices have changed and new workplace norms, attitudes and cultures have emerged. The flexibility and simplicity that comes with constant access to information and support for collaboration and knowledge also demand leadership, teamwork and new competences.

The broad implications of digitalisation illustrated in this paper point to the tendency to focus on technology (e.g. how to use a particular system) as outdated. The need for a socio-technical perspective that also introduces new ways of working and development of work practices is now unavoidable. We argue that in the development of digital workplaces, a sole focus on information systems, along with training and education from the systems’ perspective is insufficient. An understanding of work and its goals rather than systems ought to be central. Thus, more focus is required on generating a joint purpose and the bigger picture, where the systems are *one* part of development, not *the* development.

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## Keywords:

digitalisation, digital workplaces, workplace learning, information systems, change

# The 'Jobless Generation': The Role of Internships in Addressing Unemployment among Graduates

Vass, Jocelyn (Department of Trade & Industry & Wits REAL Centre)

Youth unemployment is a global concern and the notion of the 'jobless generation' is now more pervasive given the negative consequences for youth, following the 2009 global recession. For the first time in recent history, youth in selected European countries now have unemployment rates of 20% and higher, matching those of countries with a well-documented youth unemployment crisis, such as South Africa.

The transition from education to work takes place within the context of low employment growth, new types of jobs given digitalisation and automation and often a skills mismatch. Even university graduates no longer have a smooth transition into the world of work or finding their first job. Most employers require relevant work experience for entry-level jobs. However, young people are caught in a vicious cycle, as they are faced with a labour market with low or non-existent employment growth, and thus limited opportunities for relevant work experience; equally, without relevant work experience they have reduced chances of successfully securing an entry-level job. In this context, active labour market (ALM) programmes, including internships for graduates may be a mechanism to bridge the gap between education and work.

This paper reflects on the evaluation of *Itukise*, an internship programme for unemployed graduates, run by the Department of Trade and Industry in 2015-2016. *Itukise* is a Sotho word, and means "prepare yourself", in this case, for the labour market. The internship programme provided one year of work experience to 1 455 interns in selected companies, with stipends paid by government. The key issues for evaluation included: firstly, the capabilities of companies to host interns; secondly, the impact of the internship on the interns' perceptions of their work-readiness and work-related skills; thirdly, the impact on the chances of interns to find employment.

Firstly, company size did not matter, as two-thirds of participating companies (66.3%) employed between 5 -50 employees, thus relatively small companies. Thus, company size may not be a reliable predictor of the ability to host interns, a very positive finding given the prevalence of smaller companies in the economy.

Most companies had little experience in conducting internships, as 69% had never participated in a graduate recruitment programme. Also, only a third of companies had an in-house training centre (36%). Both findings point to the poor state of readiness (training capability and experience of running internships) of companies to host graduate interns. Further, 49.2% of assigned mentors had experience in mentoring, while 50.8% had no such experience. The lack of mentorship capability is a major factor in company readiness, as it determines much of the success of any internship programme. At least 30% of mentors felt that they needed a 'manual and information' on how to implement the internship. Of those who had mentored previously, 47% had done so for 1-5 years, and another 25% for 6-10 years. Thus, experience of mentoring is very uneven.

A related finding indicated that 41.4% of interns had a performance agreement with their mentor. The absence of an agreed outline of tasks and functions may hinder the quality of the internship, and may reflect the relative inexperience of mentors. About 50.9% of interns received on-the-job training, with the remainder receiving formal training, whether inside or outside the company. The relative prevalence of formal training may point towards deficiencies in the standard and quality of training possessed by the interns. Overall, the culture of internships among companies is not widespread, but, as shown in the next section, this may not be a hindrance to successful outcomes.

The second area of evaluation related to the perception of interns regarding the impact of workplace learning on their skills and expertise, before and after the *Itukise*. Most interns reported that they improved their skills in computer and technical literacy, critical thinking, positive attitude and adaptability from 60% to close to 100% pre-and post-*Itukise*. Further, skills in interpersonal relations, time management and decision-making improved from below 50% to more than 85% pre-and post-*Itukise*. These were perception-based responses, but they translate in major boosts in confidence as 84.7% felt more employable.

A significant proportion of interns (68.4%) found employment immediately after the internship. Mentors also had a very positive attitude towards post-internship employment, as 60.7% indicated that they would recommend employment. More than 70% of host employers indicated that they had offered employment to interns. Of these, 52.5% offered employment to at least one intern and 21% to at least two interns. The overall employment effect was very positive, both in terms of those who took up employment and offers of employment.

Interestingly, one-fifth (20%) of interns seeking employment had qualifications in engineering, and 14.1% in information technology (IT). This suggests that qualification type is not the only success indicator in finding employment or work experience. Overall, the study suggests that there are very complex dynamics at play in the transition from education to work and the potential of internships as an intermediary mechanism.

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**Keywords:**

graduate unemployment, internships, transition to work, youth unemployment

# A Skills Intervention Analysis

Wall, Kevin; Adrienne Vienings (University of Pretoria, Water Concepts)

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The Department of Water Affairs (DWA) of South Africa appointed the Water Research Commission (WRC) to manage the development of the methodology of a “skills intervention map”, based on a sector skills gap analysis, for the public infrastructure sector. Its application thus far has, as was the intention, been in the water and sanitation sector.

The motivation for this initiative lay in a perception by DWA that:

- There was no standardised /uniform approach and methodology of conducting skills audits in the sector;
- HR departments in water sector organisations recognised the need for skills audit interventions only to a limited extent (and did not generally conduct skills audits);
- The South African water and sanitation sector lacked a coordination point for sector skills development (audit, planning, funding, implementation, monitoring and evaluation); and
- There existed limited alignment between audits, on the one hand, and, on the other hand, current plans for the water and sanitation sector skills development.

The long-term plan of DWA and WRC is to:

- Attract and retain skilled staff in the public water sector institutions;
- Monitor and proactively respond to emerging market forces and sector skills needs (sector intelligence);
- Address existing technical skills gaps;
- Improve planning and design of water sector skills at all levels (school to post-school);
- Align sector skills development strategy with sector strategy (i.e. the National Water Resource Strategy) and country strategy (i.e. the National Development Plan) by means of audits every five years; and
- Document lessons and share best practice.

The initial application investigated three dozen water sector institutions of different functional types – also of different sizes and different levels of competence – to represent the entire public water services sector in South Africa. For each of these institutions, it then determined the suitable organograms, the number of posts per job title, and the percentage of these posts that were filled and vacant. It then, using a sample of five representative public service water institutions, determined the gaps between the skills required for technical posts as per job titles and the inherent skills of the incumbents in the posts. Three innovative aspects of the methodology have been:

- The development of a Water Sector Competency Framework (this is a structured table of over 2 500 skills required in the sector).
- A method, based on technical criteria of the nature of work and the extent of the responsibility (e.g. the quantum of infrastructure, and its nature and type and complexity), to determine the number of staff per job title required in four types of organisations, namely, Catchment Management Agencies, Water User Associations, Water Boards and Water Services Authorities.
- An online qualitative skills audit questionnaire for individuals to rate themselves against the skills in the Competency Framework.
- Other features have included guidelines on skills shortfalls of particular individuals – that is, on the specific differences between their current skills and the skills required for the posts to which they have been appointed.

It was noted that the method should never be implemented without concurrently assessing and addressing the abilities of HR staff to write job profiles, do HR planning, manage skills audits (and analyse results), and match training to staff needs.

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## Keywords:

competency framework, skills gap, skills self-assessment, skills intervention map, water infrastructure

# The 'New Skills for New Jobs' Skills Development Initiative for Infrastructure Delivery

Wall, Kevin (University of Pretoria)

In 2012 the South African government adopted a National Infrastructure Plan to transform the nation's economic landscape while simultaneously strengthening the delivery of basic services and creating significant numbers of new jobs. This Plan sets out the challenges and enablers to which South Africa needs to respond in developing infrastructure which fosters economic growth and poverty alleviation. It was immediately recognised that skills shortfalls and mismatches would inhibit implementation of the Plan. However, it was also recognised that its implementation would provide many opportunities for improving skills. The (national government) Department of Higher Education and Training (DHET) accordingly developed an "Infrastructure Skills Plan Framework", the purpose of which is to ensure that the skills will be in place to meet infrastructure requirements and also that the infrastructure projects will themselves provide workplace learning opportunities to support individuals' lifelong learning and pathways. Implementation of this requires considerable foresight, as in for example identifying the skills needs way in advance, and ensuring inter alia: recruitment of suitable trainees; the provision of training facilities and training staff; the adequacy of training and mentorship support (including workplace skills transfer); qualifications frameworks and mechanisms (including Recognition of Prior Learning (RPL)); and the accreditation of qualifications.

The European Union (EU) Delegation to South Africa, very aware of the initiatives described above, drew the attention of DHET to a planning methodology developed in Europe within the context of a ten-year strategy for advancement of the economy of the EU, but which could be harnessed to support lifelong learning in a South African context. Known as the "New Skills for New Jobs" methodology (abbreviated NSNJ), its purpose is to:

- Promote better anticipation of future infrastructure skills needs
- Develop better matching between education, skills, labour market and industry
- Bridge the gap between the worlds of education and work.

In 2013 the EU agreed to fund a limited three-year SA version of NSNJ, with a focus on understanding European experience which could be of value to SA skills planning, for two selected sectors, in the face of significant changes in technology and work organisation. The three SA partners in the project have been DHET, the Council for Scientific and Industrial Research (the CSIR) and the Passenger Rail Authority of South Africa (PRASA).

- The DHET became a partner because it is responsible for Post-School Education and Training across SA.
- The CSIR became a partner because of its role in developing and/or testing new technologies and building methods, in infrastructure asset management, and in improved infrastructure sustainability (including topics such as energy efficiency).
- PRASA has commenced a massive (10 billion US\$) 20-year modernisation programme of traction and signaling systems, requiring extensive training (and retraining) of existing staff and of staff to be recruited. Thus it became a partner because it foresaw how the NSNJ initiative could complement the major effort which it is already making to ensure that it has the right skills on board to both:
  - optimally operate – and maintain – its new infrastructure as this is progressively commissioned over the next 20 years; while simultaneously
  - operating and maintaining that of its existing infrastructure, some of it of significantly different technology to that being acquired, which is expected to remain in service for many years to come.

The project, which was completed mid-2016, has particularly sought European experience / information / research / benchmarking for South African use which is:

- effectively implemented, with clear benefits sustained into the long-term;
- relevant to the skills planning needs of DHET, especially with regard to implementing education and lifelong learning for sustainable development; and
- relevant to the infrastructure needs of DHET, CSIR and PRASA.

In respect of the last of these: the main area of concern is the lifelong learning pathway of current and to-be-recruited employees of all three institutions (DHET, CSIR and PRASA) many of whom are already being called upon, or will be called upon, to operate and maintain:

- the existing infrastructure which will remain in service for years to come,
- the existing infrastructure which is being upgraded to use new technologies, and
- the new infrastructure with new technologies which will be commissioned progressively over the next 20 or more years.

Finally: whereas DHET has broad responsibilities for Post-School Education and Training across the nation, the NSNJ initiative has suggested principles, and specific approaches, which the DHET is considering for application beyond the infrastructure sector.

To sum up the way forward for the NSNJ project:

- in the built environment infrastructure sector generally, CSIR and DHET (and in the rail sector, PRASA and Transnet) have responsibility for implementing, and taking much further, the lessons of the project;
- DHET has the broad responsibility, across all sectors, for applying the lessons of the project.

These initiatives have considerable potential to support the lifelong learning of individuals. However it can also be argued that they are essential for the socio-economic development of the country.

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**Keywords:**

identification of skills needs, workplace learning opportunities, rail infrastructure, infrastructure sustainability

# A Social Exchange Model: Implementing Education and Lifelong Learning for Sustainable Development

Wall, Kevin; Oliver Iwe (University of Pretoria, Amanz'abantu Services)

Employment is vital to the social, economic and political development of South Africa (SA); it is a key mechanism for addressing widespread poverty. However millions of South Africans are unemployed – SA's economic participation rate is far below the average for emerging economies. But the education and training system is producing young people who find it difficult to get jobs. Given that so many people in the country have low skill levels, SA needs more jobs of a type which people *can* do – and which will enable their lifelong learning while working. Furthermore, jobs have the potential to generate a sense of accomplishment, dignity and participation in citizenship. Many of the soft skills needed to improve a person's employability – such as punctuality, self-discipline, the ability to work in a team, and the ability to be proactive – are developed on the job. The workplace is a preferred site for the acquisition of these soft skills – as well as for the acquisition, or improvement, of task skills.

Engineering infrastructure (reservoirs, pipes, treatment works, bridges, roads, rail, harbours, electricity distribution, etc.) supports quality of life and the economy if it delivers accessible and reliable services. Clearly, in order to achieve its purpose, infrastructure must be operated and maintained correctly, year after year. However there is no lack of evidence of widespread poor maintenance of infrastructure in SA. Its failure is in some areas negating the impact of the development undertaken to date, with serious consequences for human development, poverty alleviation and economic growth. Thus:

- Much more maintenance needs to be done than is carried out at present.
- Much maintenance can only be done, or can best be done, by labour-intensive methods, and/or by people who only need entry-level skills.
- Maintenance work provides opportunities to learn at work.
- It makes good sense therefore to find ways to create, and manage, infrastructure maintenance jobs.

Addressing maintenance backlogs would generate extensive opportunities for job creation and skills development. However, while there is considerable job creation potential in maintenance, (the Council for Scientific and Industrial Research (CSIR) estimates half a million jobs), substantial effort must go into managing the process, and to controlling quality – by no means easy to do. Ways have to be found to make this work.

This paper describes an innovative model for skills exchange and job creation, which utilises concepts formulated by the CSIR, and developed by the CSIR in collaboration with the Water Research Commission (WRC). The model involves creating partnerships for skills development and job creation on the basis of exchange principles relating to quality control and mutual incentives.

Proven in two extensive pilots in the Eastern Cape province of SA (one pilot at schools and one for households – both of which are described in the paper), and since rolling out on a financially self-sustaining basis, this initiative has simultaneously brought about both:

- Maintenance of selected infrastructure, and returning it to service, and
- Microbusiness development and nurturing, job creation, and skills development of (mostly) rural people who had never before received training which enables them to do wage-earning jobs.

In brief, the concept, as it is being implemented, provides appropriate training, a quality management system and procedures, and the backup of the development partner. It is important to note also that the social exchange partnerships for services operation and maintenance concept addresses the requirements of many of SA's national goals, particularly:

- **development of skills in the workplace;**
- **job creation** at the lowest economic levels where unemployment is highest and workplace skills very limited;

- **microbusiness creation and nurturing;** and
- **infrastructure and service delivery,** through infrastructure maintenance activities that increase the quality and reliability of services.

In particular, the social exchange model has already:

- helped to address the state of schools' water and sanitation facilities, a neglected infrastructural element of the education system which has too often deprived learners, especially girl learners, of regular access to the classroom (this is described in the paper); and
- provided people outside the education/training and work system with opportunities to obtain skills suitable for employment and opportunities for lifelong learning – and, if they have sufficient enterprise and drive, the further opportunity to become micro-entrepreneurs in their own right.

This pioneering work has been undertaken, and ownership taken, by the CSIR and WRC (both government agencies), with a mid-size private sector partner and local emergent micro-enterprises – all these entities accountable through creating learning environments and skills development in the communities.

Finally, it should be noted that social exchange partnerships are locally led and deliver services locally. That is, it is within the communities served that they create jobs, enable transfer of workplace skills, and retain income.

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**Keywords:**

social exchange partnerships, workplace skills acquisition, water and sanitation infrastructure, operation and maintenance



## Popular Education at/as Work

**Walters, Shirley; Astrid von Kotze** (University of Western Cape); **Jane Burt** (Environmental Monitoring Group); **Anna James** (Rhodes University)

February 2017, Budget Day, members and representatives of some 15 civil society organisations and social movements have come together outside the Houses of Parliament in Cape Town, South Africa, to demonstrate their anger. Banners and posters proclaim opposition to 'a secret trillion rand nuclear deal'; they demand a stop to the deal; they detail how such funds would prevent the construction of millions of houses and better education and health... Passers-by hoot approval – or avert their eyes, as the calls of '*phantsi* (down) trillion rand nuclear deal, *phantsi!*' get louder. A man in a South African flag-T-shirt with a different poster that asks for the removal of the president has picked up a loud-hailer and, using call-and-response, invites the protesters to join in the slogan of 'Down with the President!' One of his supporters responds. An organiser from one of the hosting organisations goes across and requests the 'comrade' to step aside. Quietly, she invites him to desist from his call: this demonstration has a clear focus and purpose and while he and his organisation are most welcome to join in, this is not the forum for anti-party-political sloganeering. They are joined by others and a dialogue ensues. The organiser explains the strategic importance of staying focused; she contextualises the protest and reiterates the invitation to join in – but insists they do not attempt to take over. This would be in breach of the collective purpose underlying this protest. A little while later, they part, laughing together, and he hands over the loud-hailer and resumes his place behind the banner.

Eyerman and Jamison state that, "Social movements are not merely social dramas; they are the social action from where new knowledge including worldviews, ideologies, religions, and scientific theories originate" (Eyerman & Jamison, 1991: 14). This was a superb moment of political education and strategic learning on the picket-line, a lesson in the art of public protest and tactical action. It was a demonstration of particular knowledge and skill that was grown and nurtured in activist experience, politics in its purest form. As observers we saw how swift and convincing political education on the picket line can be when offered by a skilled and experienced activist in the role of both organiser and educator. We would argue, this was popular education at / as work: rooted in the experience and interests of ordinary people, highly charged politically and deeply democratic in process, arising out of a tension defined by the dynamics of time and place and aimed at action that would further opposition to a particular issue.

The symposium has its genesis in a three-year research project on 'Re-membering Traditions of Popular Education' based at University of Western Cape, which led to the publication of a book in 2017, *Forging solidarity: Popular Education at Work*. Each of the presenters has participated in the research project and in the production of the book, and in the symposium we will be drawing on these concrete experiences and analyses, as we collectively animate the symposium using 'transgressive' participatory processes to push, prod, poke and play with ideas of popular education as/at work, highlighting too the participatory research approach which has been the hallmark of the three-year project.

### Keywords:

popular education, work, social movement learning

# Aligning Policy, Strategy and Skills for Sustainability: An Occupationally Directed Study into Green Supply Chain Management in the Public Sector in South Africa

**Ward, Mike** (Creating Sustainable Value); **Nicola Jenkin** (Pinpoint Sustainability); **Eureta Rosenberg** (Rhodes University); **Presha Ramsarup** (Wits University)

As one of the global targets, the Sustainable Development Goals set the promotion of public procurement practices that are sustainable in accordance with national policies and priorities. In South Africa, the National Development Plan makes a commitment to ensuring that environmental impacts of public sector investment and spending are fully costed to promote the principles of full-cost accounting. These and numerous other international and national policies and strategies recognise that shifting to a green economy is vital for the achievement of more sustainable development paths. This requires that government, business, labour and civil society develop new ways of doing business and thus new occupations, new skills and new forms of institutional collaboration. It is in this context that National Treasury's commitment to use the R500 billion annual expenditure on goods and services by the public sector to support government's strategic priorities, could make a significant contribution to sustainable development. However, as the National Development Plan acknowledges, there is a real risk that South Africa's development agenda could fail because the state is incapable of implementing it. In response, the National Development Plan calls for a 'capable state' underpinned by effectively coordinated state institutions with skilled public servants who are committed to delivering high quality services whilst prioritising national development objectives. This presentation will report on an occupationally directed study into the policy, skills and institutional alignment that is required to drive green supply chain management in the South African public sector. It provides insights into frameworks, research methods and tools that support anticipatory approaches to skills development in the context of emergent environmental, social and economic challenges and opportunities linked to sustainability and in particular, the green economy.

In a proactive initiative aimed at identifying and developing the requisite occupations and related skills to support green Supply Chain Management (SCM) in the public sector, the Public Sector Education and Training Authority (PSETA) commissioned the GreenSkills Programme to explore three interrelated questions. These were:

1. What skills are required to effectively implement green SCM in the public sector?
2. Which occupations are involved and how should they be reflected in the Organising Framework for Occupations (OFO)?
3. What attendant organisational development and policy guidelines may be necessary?

Two literature reviews, focusing on international and national policies and practices, were conducted to develop insights into the different meanings ascribed to key terms and the contradictions, absences and innovations evident within supply chain management in the South African public sector. Using specific commodities and value chain analysis, two case studies were conducted that focused on procurement within a national department and a provincial department of government. Using value chain analysis at both the level of specific commodities that government procures and the procurement process itself, enabled a clear mapping of key processes, the environmental impacts and considerations across the full life cycle of products and supply chain management, and the different actors and multiple relationships within a given value chain. This in turn enabled the development of a comprehensive framework for identifying the different occupations within and related to the supply chain management value chain at multiple levels within national and provincial government.

The research revealed a number of mismatches within the public supply chain management in relation to building a green economy. These include a lack of policy alignment between global commitments, national policy and departmental processes; poor understanding of emerging environmental challenges and opportunities; an inability to develop procurement specifications that include environmental criteria; outdated costing models based on price rather than value; and narrow monitoring and accountability frameworks. For each of these mismatches, strategic leverage

points were identified. Associated with these leverage points, a number of recommendations were made related to the relevant policies and the need for policy alignment; the need to align policy and supply chain management strategy, the occupations associated with this policy alignment and implementation; the emerging skills required within these occupations; and finally, the institutional cooperation required to align policy, develop appropriate skills, implement green SCM and evaluate its effectiveness.

In addition to sharing the findings and recommendations outlined above, this presentation will provide an insight into the tools and research methods being developed within the GreenSkills Programme for assessing and anticipating the occupations, skills and learning required to drive a more sustainable economy.

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**Keywords:**

green supply chain management, sustainability, policy, research methods, tools, skills

# Sustainable Value Creation, Concept Formation and Expansive Learning: Exploring the Need, Potential and Mechanisms for Changing Business Models

Ward, Mike; Heila Lotz-Sisitka (Rhodes University)

The agenda of finding safe and just pathways of development is gaining international support, in the context of ecological and social limits, the transgression of which may threaten biophysical systems and human development imperatives associated with poverty eradication and equity. The Sustainable Development Goals are an articulation of this agenda and together with the Paris Climate Accord set an ambitious international commitment for change that was negotiated and endorsed by governments, business and civil society. These commitments will require fundamental changes in the way that businesses operate including a shift away from the maximisation of growth and profit that underpins current capitalist approaches to business. Emerging concepts and practices including corporate social responsibility, the creation of sustainable value and the creation of shared value have been suggested and critiqued by many authors. Less well developed in the literature is an articulation of the learning processes that will be required to initiate and support a reflexive engagement with these new approaches in businesses.

This paper presentation draws on two studies at the interface between business models, environmental sustainability and social justice. The first study, conducted by one of the presenters, focused on a multinational pulp and paper company, the Mondi Group, with a particular focus on its South African division. The second study forms part of a current PhD that seeks to take forward some of the findings of the initial study. More specifically, the PhD study seeks to answer the question: "Can critically engaged dialectical expansive learning processes, focusing on the object of sustainable value creation, potentially support transformations to more sustainable business models, and if so how does this occur?"

Development, sustainability, shareholder returns and stakeholder value could each be described as "runaway objects". The significance of these objects is that they provide the motivation for action and as they grow in motivational force, these objects shape and direct the activity of subjects within activity systems. However, although activity theory has been described as a theory of object-driven activity, the object remains partial, an horizon that is never fully reached. The activity system as it is motivated and given meaning by the object of activity simultaneously generates actions through which the object of activity is enacted and reconstructed. The object of development and the object of sustainability would thus motivate and create meaning for very different activity systems. Key to the creation of new and/or expanded objects and patterns of activity oriented to these objects is expansive learning. Learning is expansive in so far as it enables learners to learn "something that is not yet there" and in so doing "to construct a new object and concept for their collective activity" (Engeström, 2016: 37). This process of new object and concept formation is achieved through a dialectical method of ascending from the abstract to the concrete. From the contradictions within and between objects, "new theoretical ideas or concepts are initially produced in the form of an abstract, simple explanatory relationship, a 'germ cell'" (Engeström, 2016: 42). Through expansive learning, this initial concept is transformed into a complex, concrete object. The sequence of learning actions contained within the expansive learning process developed by Engeström is designed to support the ascendance of the abstract to the concrete. This paper seeks to, through reference to two case studies, explore this process of concept formation.

## Keywords:

expansive learning, social justice, sustainability

## W(h)ither TVET?

Wedekind, Volker (University of Nottingham)

The relationship between educational processes and preparation for work has been deeply entwined since the earliest human social groupings emerged. However, the emergence of Technical Vocational Education and Training (TVET) as a distinct category of education emerged more recently during the industrial revolution(s) and gained prominence as a vehicle for individual, national, and social development by the contribution of Human Capital Theory (HCT) to economic thinking. Despite some periods in the 20th Century when TVET was viewed as of secondary importance to basic education, there has been a recent resurgence in interest in the potential for TVET to address a range of social concerns, and increasing policy attention and resources are aimed at TVET and TVET institutions. The recently adopted Sustainable Development Goals (SDGs) for the first time include TVET as an aspect of the right to education, the new Continental Education Strategy for Africa (CESA) encourages member states to expand TVET, and developed countries like the UK and developing countries like South Africa place renewed emphasis on TVET in their national strategies. TVET seems to be in a strong position.

However, a number of factors suggest that this focus on TVET needs to be viewed with caution. The HCT that underpins the idea that investment in skills will lead to growth and progress is increasingly viewed as outdated and even fundamentally flawed. Investment in mass-based TVET does not in itself create the jobs that are needed to keep people occupied and in many instances TVET programmes act simply as a form of warehousing. At a more fundamental level, the very notion of growth underpinning development is itself being increasingly questioned as a realistic economic premise (Fioramonti, 2017; Raworth, 2017). Even where there is growth, the changes in technology that are associated with the 4<sup>th</sup> Industrial Revolution are hollowing out the job market by mechanising many aspects of the middle level skilled occupations as well as higher level occupations and professions. And the areas where new work is being created are changing so rapidly that it is almost impossible for a training curriculum to keep pace.

Given these wider social, technological, and economic transformations, what is the role of TVET? How could TVET play a constructive role in this period of rapid change? Or is TVET destined to wither away as a viable educational form and what will replace it? These are the questions this paper attempts to address by exploring the implications of some of the current critiques of contemporary economics, exploring the implications of environmental change and other future oriented projections, and by examining the debates about knowledge related to work. The paper suggests that TVET in its current form is not likely to survive, but that a wider debate about the role of vocational education in relation to all levels (schooling, intermediate and higher) of the system is urgently needed. Key to this is the development of strong institutions that are able to equip people with a wide set of skills that will enable them to adapt to the challenges of the new period.

### Keywords:

Technical Vocational Education and Training (TVET), transformations

# Collaborative Partnerships between Research and Practice: A Nordic Perspective on Open Science

**Wegener**, Charlotte (Aalborg University); Marie **Undheim**; Elisabeth **Willumsen** (Department of Health Studies, Norway)

The ambition to open up the processes and results of publicly-funded research has led to the emergence of a broad Open Science movement. The goal is radical: to make research accessible to everyone so as to enhance impact and innovation in society. Not only governments and funding agencies, but also universities across the Nordic countries see Open Science as a top priority. Discussions about open access and open data have dominated the agenda; however, how to actually make research democratic in all phases is a key concern as well.

The aim of this paper is to report on, and discuss the strengths and challenges of, an ongoing collaborative partnership in which researchers and practitioners work together, not only to solve but also to articulate problems and frame the research project from the very outset – as a case of an Open Science practice.

The collaborative partnership was established between research institutions and elderly care facilities to study social innovation as a phenomenon in institution-based elderly care. We received initial funding from the Research Council of Norway to work closely together on the main proposal, which was subsequently funded. Five research institutions (four Norwegian and one Danish) and five elderly care facilities and their leaders are involved. In addition, users (patient organisations and professional organisations) were included when designing the study, in accordance with official policies for Open Science practice.

A sequential mixed method design is applied, including qualitative approaches such as fieldwork and interviews. In addition, a survey questionnaire has been developed containing a psychometric evaluation representing the quantitative approach.

The main goals of the project are:

- 1) to identify innovation in daily practices in elderly care and to find characteristics related to how high-quality elderly care institutions are developed through everyday management and work, and
- 2) to make recommendations as to what is needed in the future, based on perspectives of healthcare personnel, patients, relatives and researchers in various fields (nursing, psychology, social work, health, sociology and anthropology).

This paper reports on the initiation of the collaborative partnership. First, we show how the leaders in the elderly care institutions, patient organisations and professional organisations were involved in co-creating the research questions, describing the research design and articulating the main themes and methodology of the study. Second, we analyse what we have learned from these processes so far: that is, what we as researchers can do to take co-creation with practitioners seriously, and what the advantages and pitfalls of this kind of collaborative partnership may be. Finally, we link our experiences to a broader Open Science agenda and discuss the potential impact of research carried out in research partnerships across domains and disciplines.

## Keywords:

innovation, elderly care, open science, research partnership, impact

## Providing a Bridge from University to Industry

**Wicomb, Samuel; James Garraway** (Cape Peninsula University of Technology)

The aim of this study was to uncover if authentic work practice at university (graphic design, CPUT) could serve as a developmental space for expansive learning and thus potentially assist graduates in making an easier transition to the world of work. The shift from the classroom to the workplace is not without its complexities, as verified by numerous studies. The two systems (university and work) are socially distinct and serve different purposes and outcomes. This study used Activity Theory as a theoretical framework to underpin the analysis in this qualitative study. Questionnaires, video footage and participant journals were used as instruments and individual interviews as a research method. The analysed data revealed participants do struggle in certain areas but overall, they learn and develop and this is aided by the collective, collaborative and purposeful – getting the job done – nature of the workplace. Transitioning between activity systems is not simply a difficulty but also offers students opportunities for learning as they enter into a Zone of Proximal Development (ZPD). Knowing what the main nodes of learning and development are, may help students to be better able to make this transition, for example through doing more purposeful, authentic and collective projects within the university.

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**Keywords:**

authentic work practice, developmental space, transition, Zone of Proximal Development

# A Society in Flux and the Purpose and Power of Professional Work: A Perspective from the South

**Wildschut, Angelique; Bongiwe Mcwango; Tamlynne Meyer** (Human Sciences Research Council)

The South African labour market, like many others across the globe, have over the past 20 years been characterised by a trend away from a dominant manufacturing sector, towards a service sector economy. Change to the occupational structure of the economy is also evident, with increasing employment in, and economic returns to, high-skill occupations, with occupations requiring intermediate level skills seeing a decline in proportional share of employment. At the same time, a quarter of the labour force is not able to find a job, and 51% of the labour supply does not have a Grade 12 qualification. On both political and economic fronts, the country is faced with deep and complex questions around how to shift its economic structure to become more inclusive, with less focus on the demands of a formal, very unequal and unsustainable labour market regime.

Complex labour market questions also remain unanswered: why do we have growing gender inequalities in certain types of employment, why is there a growing proportion of unemployed that do not want to take up jobs, why the ever expanding proportion of in-work poverty? There is also the notion of decent work, precariousness, growing concern around under-employment and ever expanding proportion of those in long term unemployment to consider.

These social and economic risk factors have seen the rise of protest action around fair wages, tensions within trade unions, questions around whether there is adequate representation of the needs of the working poor, concerns about basic conditions of employment, political debates and demands for a living wage, as well as access to skills and education. The recent university protests and unrest point to a society at breaking point due to years of unresolved issues of social justice that speak directly to the urgency for South African sociologists to re-appraise the current and changing relationship between work, the state and society, and to inform what this relationship should look like in the future drawing from a bigger body of empirical work.

It is clear that not only is this a labour market with grave contradictions, it is one in which there is great appeal in high skill and professional work, especially for those who have been marginalised under the previously segregationist political system. The emancipatory ideals that underlie this trend should not be underestimated as a social force. Not only does this raise questions that require South African scholars of work to re-appraise this continuing appeal to professions, but also points to the importance of understanding social attitudes and how they impact on labour market experience and behaviour. On both these aspects, South African literature has been lacking.

Historically, sociologists of work did not extensively consider the role of professions and professional work in South African society because of the extent of more pressing political and economic concerns. Furthermore, the country does not have an institutionalised national survey that routinely gathers information on the public's (working and non-working) subjective assessment of the labour market and qualitative experience of work.

In an attempt to address these gaps, this paper will draw from an emerging body of national survey data (2012/13 and 2016/17) on the South African public's attitudes to work and occupations, as well as a review of literature on professions in the South African context. In the main, this evidence is marshalled to argue for: 1) strengthening such an internationally comparative survey tool to support the expansion of sociological scholarship around work and inequality in the South African context; and 2) returning to sociological analysis of a continuing appeal to professional work and how this interfaces with processes of social closure in the South African context.

## Keywords:

professional work, professions, attitudes to work, social closure



# Workplace-based Learning Programmes and the Transition to the Labour Market

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In South Africa there is increasing recognition of the need for the post-school education and training system to expand and be capacitated, to offer more meaningful opportunities for more young people – particularly the large cohort who do not progress to grade 12, and those who pass matric, but do not qualify for higher education. Not all young people will have the aptitude, interest or ability to follow a higher education pathway, and nor can the system accommodate all. The widespread aspiration and desire for university credentials and upward mobility mean that the status of Technical and Vocational Education and Training (TVET) qualifications and occupations at the intermediate level is extremely low, and typically, not viewed as a first choice option. However, artisanal and technical skills at the intermediate level are critical for growth and development in South Africa, so there is heightened demand from employers for young people whose skills can be developed. One pathway to such jobs is through a qualification from the expanding public or private TVET college systems.

A more neglected pathway is that of workplace based learning (WPBL) programmes. Traditionally, these took the form of apprenticeships, where an individual acquired skills on the job alongside a master artisan over a number of years, supplemented by formal theoretical courses at a college, and culminating in a trade test. After 1994 in South Africa, in line with global trends, a new, 'modernised' and more inclusive system of learnerships was designed and implemented by the newly created Sectoral Education and Training Authorities (SETAs), aimed both at offering extended opportunities to young people leaving school and entering the labour market, and to provide skills upgrading for those in the workplace without the requisite qualifications, or to keep up with changes to the nature of work and technology. More recently, workplace-based learning in the form of internships has been promoted, as a means of strengthening the linkages between formal qualifications and workplace demands, and thus facilitating transitions into the labour market (Blom, 2015).

In a formal labour market system that often attributes mismatches between labour market demand and skills supply to a lack of work experience, expansion and better capacitation of such programmes has clear advantages. These have been recognised by government, which has recently prioritised funding programmes to promote workplace based programmes (internships, learnerships, apprenticeships and skills programmes) (DHET, 2015). However, we know very little about whether the workplace based learning system is actually functioning in the way expected. Should policymakers be providing greater resources to strengthen and further expand WPBL programmes as a component of the South African PSET system, and if so, how and where? To engage with the policy issue, we need to raise critical questions: First, do these programmes serve to include and skill a larger and more representative proportion of the SA youth? Second, what are the differences in the way in which these programmes provide opportunities for skilling? Third, do these programmes skill citizens in ways that will increase their opportunities for employment?

To interrogate these questions, this paper draws on two sources of evidence. First, we use administrative data managed by SETAs to create population datasets on learnerships, apprenticeships and internships. We analyse this data over two time periods, in order to analyse shifts in the scale and patterns of inclusiveness of provision. Second, we analyse an original dataset created from a tracer study using a pathways approach, of those who completed learnerships and apprenticeships in 2009/10 (Kruss et al., 2012; Wildschut et al., 2012). This allows the paper to contribute methodologically as well by illustrating that analysis of a combination of administrative and survey data provides for a very powerful assessment of impact. We conclude by arguing that WPBL offers a set of valuable and viable pathways enabling transition into the South African labour market, and that the current policy focus should continue and be deepened.

## Keywords:

apprenticeship, learnership, internship, transition into education, transition to work, pathways

# Transitions, Transformations and Transgressions: Reconceptualising Teaching Portfolios as Knowledge Objects in Professional Learning Systems

Winberg, Christine (Cape Peninsula University of Technology)

ID104  
PAPER AVAILABLE

Teaching portfolios are commonly used to demonstrate evidence of growth, competency or the attainment of excellence – and are also a means towards linking theory (or research) and practice in professional education. Several South African and many international universities require academic staff to present teaching portfolios when applying for tenure, promotion or teaching excellence awards. Teaching portfolios are thus important artefacts that have come to symbolise transitions in an academic career, in particular the transformation of teaching practice. Despite the common use of teaching portfolios, little attention has been paid to understanding the ‘genre ecology’ (Spinuzzi, 2002) of teaching portfolios as knowledge objects within a professional learning system. The particular focus of this paper is a re-conceptualisation of teaching portfolios, arguing their role in professional identity formation and as self-regulating devices in professional practice.

Data for the study was obtained from teaching portfolios submitted for tenure, promotion and awards. The research design draws on the research tradition around technologically-mediated communication in workplace settings (e.g. Kaptelinin & Nardi, 2006; Leonardi, Nardi & Kallinikos, 2012). A modelling methodology for visualising and representing knowledge work across the eportfolios, inspired by the modelling processes of Spinuzzi, Hart-Davidson and Zachry (2004), was developed for the analysis of portfolio data. This approach understands portfolio building as chains of coordinated communication events that are organised into a ‘genre ecology’ (Spinuzzi, 2002). These events become the primary unit of analysis in creating representations of portfolios and their related tasks, decision points, actors, documents, or combinations of these.

Three purposive case studies were selected for this paper. The first study, a teaching eportfolio presented for tenure, maps how a novice teacher tries out a range of repertoires and practices in support of an emerging academic identity. The second eportfolio case illustrates the complex professional ‘ecosystem’ that an academic navigates in revealing (and concealing) aspects of a teaching identity, while the third eportfolio study follows distributed knowledge work across wider networks and the artefacts that are associated with a more expert teaching identity.

Teaching portfolios have been understood to have the dual function of both showcasing teaching accomplishments as well as creating opportunities for further growth and development through reflecting on practice. While much is known about the role of reflective practice in professional development towards enhancing teaching, less is known about the portfolio as an artefact in a professional learning system. The study provides a conceptual framework towards reconceptualising teaching portfolios as knowledge objects, and offers suggestions to assist educational developers and those involved in professional learning to identify career trajectories through a study of the genre ecology of teaching portfolios. Teaching portfolios can also be transgressive in that they may challenge accepted ways of ‘being’ an academic.

## Keywords:

professional learning systems, teaching portfolios

# Assembling the Educator: Transforming Teaching for Professional Postgraduate Learning

Winberg, Simon (University of Cape Town)

The landscape of postgraduate education is changing – one of its features being the increased diversity of educational models and the growth of professional higher degrees in new fields. Professional postgraduate education is not focused on preparing candidates exclusively for a life in academia; rather it is expected to support students in a variety of positions in both industry and universities. A major change has been the increased demand for taught doctoral and Masters programmes to provide specialised skills and training for professionals, to expand their knowledge of state-of-the-art practices, tools and technologies related to their field. This paper investigates one such course, namely a Software Defined Radio (SDR) Master's degree course in which participants learn how to use technologies for the design and development of SDR systems. A SDR radio system is one in which parts of the radio system that are traditionally implemented in hardware, are instead implemented in software. This paper investigates the complex dependencies of tools, artefacts and other socio-material aspects of the course that were instrumental in sharing and building knowledge.

The conceptual framework for this paper combines Activity Theory (AT) (Engeström, 1999) and 'genre ecology' models (Spinuzzi, 2002). AT was used to reason about the learning and interactions that occurred in the course and genre ecology was used to model the building and sharing of technical knowledge related to using tools to solve design problems. Data were obtained for this study from meetings with students and lecturers, logs made during laboratory practicals, project reports, and course evaluations.

The findings show how the course, which was initially teacher-dominated, metamorphosed into a highly tool-dominant and peer-learning structure that supported the development and sharing of technical tool-based knowledge that the participants sought. While academic staff could address some gaps in the participants' fundamental knowledge of radio systems, the participants brought with them extensive specialised knowledge and tool experience; all the participants had gained experience in specific niche areas of radio systems, and some were experts in particular techniques. This created a complicated dynamic to interactions in the class. The course involved extensive engagements with technology artefacts, such as computer systems, peripherals and programme code from which knowledge was built. The course was thus to a large extent characterised by a richness of 'epistemic objects', which is to say objects that had knowledge-generating qualities (Nerland, 2008). A significant portion of the course curriculum had to be adapted, and the learning methods changed to accommodate new learning activities and the unexpected needs of the participants.

This paper explains the Masters course in terms of conflicts and innovations in its activity system and hybrid genre ecology to show how the structuring and resource dependence of the course transformed from its initial 'traditional' structure to a more entangled structure over time. It is hoped that insights from this paper may benefit other educators involved in the design and teaching of similar types of specialised postgraduate taught programmes.

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**Keywords:**

postgraduate, activity theory, technology

# Before & After Higher Education: Code Clashing and Misrecognition

ID106

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A great deal of literature has been devoted to addressing the articulation gap into Higher Education (HE) in South Africa, and measures to enable more effective systemic (CHE, 2013), affective and 'epistemological access' (Morrow, 2009) and support. Parallel to these challenges are the findings of numerous graduate and employability surveys highlighting the inability of graduates to 'apply theory' (Griesel & Parker, 2009) or demonstrate the required technical skills. Engineering (the focus of this paper) presents a particularly challenging area for education, given the rapid evolution of technologies and the inability of current curricula to accommodate the needs of a changing practice environment (Felder, 2012). Low retention and graduation rates suggest HE is not adequately preparing students for the increasing complexity of a profession located in the science-technology-nature-society nexus (UNESCO, 2010). This paper presents a theoretical and empirical argument demonstrating that our failure is a result of the misrecognition of both what students bring into the HE space, as well as what the profession values.

Using theoretical and analytical tools from the sociology of education, a PhD (and subsequent post-doctoral research project) sought to better understand the relationship between engineering practice and the curriculum from a disciplinary perspective. The Legitimation Code Theory (LCT) dimension of Specialisation (Maton, 2014) offers a knowledge-focused instrument – the *epistemic plane* – which is useful for the analysis of the relationship between the 'what' and 'how' of a knowledge practice. Set as two continua on a Cartesian plane, the vertical axis (what) refers to the 'boundedness' of a phenomenon – where 'strong' means a phenomenon is recognised by the field as having a particular nature, and weak means it is ambiguous or contested. The horizontal axis represents a fixed to multiple approaches continuum. The four quadrants manifest as different *insights* (ways of thinking). This tool was applied to 18 industry case studies to map how multidisciplinary engineering practitioners solve technical problems, while drawing on explicit or implicit forms of science, mathematics and logic-based thinking.

For the purpose of this paper, the same analytical tool has been applied to the textual analysis of engineering graduate attributes, as well as two case studies: a 2016 cohort of Grade 12 learners attending an engineering workshop and the 2008 cohort of first-year students at a University of Technology. Data for these case studies are drawn from anonymised scholar SWOT (strength, weakness, opportunity and threat) exercises and student motivation essays respectively. Findings from the original industrial case studies demonstrate that successful engineering practitioners recognise and code shift comfortably between the different *insights*. However, the research reveals that the greatest challenge for unsuccessful problem solvers is shifting to open-ended approaches or complex *knower*-orientated contexts. These quadrants (located on the left of the *epistemic plane*) represent not only the kind of thinking valued by industry, but are also explicitly captured as required outcomes in the engineering Graduate Attribute statements (IEA, 2013). Secondly, the case study analysis of learners wanting to study engineering reveals the participants perceive their strengths as creative, confident and curious, and their weaknesses or threats as socially-orientated. The first-year students in the second case study were predominantly motivated to study engineering by a desire to contribute to society and to creatively solve problems. Both case studies demonstrate that students entering the HE system have a strong orientation on the left-hand side of the *epistemic plane*.

However, formal engineering qualification curricula, access and progression are determined by the 'fixed' phenomena and approaches of the right-hand side of the *epistemic plane*. The paper argues that the focus on science-based fundamentals and technical or methodological procedures in HE engineering pedagogy is a misrecognition of the synergistic relationship between different disciplinary codes in enabling effective problem solving, and that entering students' natural predispositions towards open-endedness and complex social relations are a wasted opportunity in supporting the development of graduates equipped for complex 21st century work contexts.

## Keywords:

misrecognition, higher education, technology

# Comparative Analysis of Intercultural Competence and Interdisciplinary Competence in the Organisational Context: An Exploratory Study

**Zeeshan, Muhammad; Dane Lukic; Saud Al Taj; Rona Beattie** (Glasgow Caledonian University)

The concept of intercultural and interdisciplinary competence has been used in the literature and practice for quite some time (Chen, 2014; Singh, 2016; Wagner, 2010). This emphasis has led to significant developments in both areas. For instance, technological innovations in the fields of medicine, engineering and design have combined to produce cutting edge equipment. Similarly, large-scale global migration has led to increasingly multicultural organisations investing vast amounts of capital and time on training their staff and managers to work with each other effectively in diverse cultural contexts. Literature shows that often both interdisciplinary and intercultural competences are present at the same time in organisations (Bennet, 1998; Duus & Cooray, 2014; Nancarrow et al., 2013). Elements like communication, teamwork and leadership are important to both areas, and it is important to test them in practice. Moreover, dealing with intercultural and interdisciplinary environments might trigger similar abilities in individuals who deal with diverse settings conceptualised as 'cultures of knowledge' (Lukic, Yarosh & Martins, 2011). Numerous studies conducted on interdisciplinary and intercultural competence separately identify and highlight different competences that are required to be successful in each setting. However, no study has been conducted specifically on both interdisciplinary and intercultural competence in relation to each other.

Through a literature review and a small-scale empirical exploratory study as a form of proof of concept, the relationship between intercultural and interdisciplinary competence is explored in the present paper, and their interaction with each other examined. The paper also highlights other elements that are not identified in the literature but are of importance to both intercultural and interdisciplinary projects/organisations. The study's case is the KNEEMO project which is an Initial Training Network (ITN) for knee osteoarthritis research funded through the European Commission's Framework 7 Programme. The project is interdisciplinary and intercultural with researchers coming from different backgrounds both academically and culturally. This will provide an opportunity for an in-depth analysis into the competences applied in both intercultural and interdisciplinary contexts. The study uses a pragmatist research philosophy. The prime reason for using this approach is that it focuses on practical issues experienced by people, research questions posited and then studies of the consequences of actions. Additionally, a pragmatist approach supports a researcher to be sensitive to the political, social and historical context from which the investigation starts and considers morality, ethics, and issues of social justice to be important throughout the research process (Creswell, 2014). The methodology follows a qualitative approach based on semi-structured interviews with key practitioners. The sample is based on stratified sampling where emphasis is given to selecting participants based on their research and geographical background. Furthermore, the participants are divided into two layers i.e. management and researchers. This is deemed important as it helps in collecting and analysing data from both perspectives i.e. management and researcher/employee.

The exploratory study provides a proof of concept and investigates the similarity of intercultural competence and interdisciplinary competence in organisations. The study is a first phase of a larger project exploring competence elements that could be potentially applied in both interdisciplinary and intercultural environments. Additionally, this study could help managers by providing recommendations regarding policies and practices that a leader can implement when dealing with both intercultural and interdisciplinary projects. This is important as research highlights that leadership has an integral role in the success or failure of any organisation, so it is essential for organisations to have a set of guidelines and training which are provided to leaders to manage intercultural and interdisciplinary projects in an effective way.

## Keywords:

intercultural, interdisciplinary, competences, comparative analysis

# Educating in the Anthropocene

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ID108  
PAPER AVAILABLE

What education is of most worth for a generation inheriting an environment directly compromised by the human species, a global economy characterized by massive increases in inequality levels, and a technological world rapidly outdating some forms of human labour? This paper explores three current answers to this question. Firstly it discusses contemporary attempts to develop education for catastrophe in countries like Japan that have experienced such devastation. Secondly it sets out the latest technological innovations in education that hold promise in dealing with the question. Specifically, developments in Blockchain technology, artificial intelligence, big data, and digitization are discussed. Thirdly it opens out radical critiques of our current condition that suggest new ways of doing education for catastrophic times. Specifically, the work of radical theorists who combine issues of modern capitalist exploitation, the Anthropocene, and technological innovation are discussed in relation to current developments in education. The paper argues that new forces of production within the education apparatus have qualitatively changed the way education is done, and that we have to radically think through what the implications are for our current practices.

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## Keywords:

Anthropocene, education for catastrophe, innovation

# 'Sustainability Starts with Teachers': Mediating Change-oriented Professional Learning to Enhance Reflexive Praxis and Agency in Teacher Education

**Mandikonza, Caleb** (University of the Witwatersrand); **Heila Lotz-Sisitka** (Rhodes University)

One of the major findings emerging from ten years of Education for Sustainable Development in the United Nations Decade on Education for Sustainable Development (2005-2014) was that not enough is being done to support teachers' professional learning for sustainability. Sustainability concerns are complex and involve an epistemology that extends beyond traditional disciplinary boundaries to include wider ecologies of knowledge and praxis processes that are oriented towards transformative learning, and change in social and social-ecological systems. In 2004, and again in 2016, UNESCO reported that while environment and sustainability education (ESE) was one of the fastest growing curriculum areas in the world, this shift in epistemic framing was not reflected in teacher education.

This paper considers this issue critically and seeks to outline a reflexive, course activated model for change oriented professional learning of teachers in environment and sustainability education. The model is based on research undertaken in the Southern African Development Community's (SADC) Regional Environmental Education Programme's teacher education network, where in-depth qualitative research involving teacher educators in two countries was undertaken over a five-year period, tracking the mediation processes involved in supporting teachers' professional learning for change in both on-course professional development and in workplaces (Mandikonza, 2016; Mandikonza & Lotz-Sisitka, 2016). Of interest is the way in which the focus on a 'change project', designed as a central, expansive learning mediation tool in the courses, was carried into workplaces with various structural (SEPs), cultural (CEPs) and people emergent properties (PEPs) (Archer, 1995) shaping the ongoing emergence of reflexivity driven change in practice and agency around a developing change project. We found that practice exists in and emerges out of practice architectures that appear as practice arrangements that reflect the SEPs, CEPs and PEPs.

Archer's (1995) morphogenic theory helped us to show that capacity for mainstreaming environment and sustainability education can be facilitated through a praxis-located course mediated process. Here we found that the reflexive processes that focused on the mainstreaming of environment and sustainability as a learning process (also the object of expansion of learning experiences) were structured and woven around the change project as the organising framework. To this end, as illustrated in this paper, the change project was an important mediating tool that was used to challenge normalised practices and create opportunities for transformed teacher education practice towards environment and sustainability education in teacher education contexts. We understood practice as manifesting in mentally situated and technical forms, also known as 'habitus' (Bourdieu, 1998); it also included Kemmis's (2009) perspective of *doings*, *sayings* and *relatings*, as well as enhanced sustainability competences and capabilities for mainstreaming environment and sustainability education. Transformed teacher education practices towards environment and sustainability education constituted aspects of the expanded zone of proximal development of the teacher educators in the social reality of institutional practice.

Since this research, we have been working on the expansion of the model's application into a new round of teacher professional development involving 60 teacher education institutions in the SADC region where the development of change projects is being seeded via a professional development programme (Sustainability Starts with Teachers). We are aiming to further test the mediating tool through monitoring on-course sessions and in-situ work experiences.

## Keywords:

teacher education for sustainability, change projects, Archer's morphogenic theory





