

https://dspace.org/

Why academic depth and rigour in university-based coursework matters for prospective teachers

Rusznyak, L.; Balfour, R.; Von Vollenhoven, W.; Sosibo, L.

2016
UV/UFS
https://hdl.handle.net/10539/31777
Rusznyak, L., Balfour, R., Von Vollenhoven, W., & Sosibo, L. (2016). Why academic depth and rigour in university-based coursework matters for prospective teachers. Perspectives in Education, 34(1), 1-9.

Downloaded from a DSpace repository. https://dspace.org/

Lee Rusznyak
Robert Balfour
Willie Van Vollenhoven
Lungi Sosibo

DOI: http://dx.doi.org/10.18820/2519593X/pie.v34i1.1
ISSN 0258-2236
eISSN 2519-593X
Perspectives in Education
2016 34(1): 1-9
© UV/UFS

Why academic depth and rigour in university-based coursework matters for prospective teachers

1. The shift from teacher training to initial teacher education in South Africa

Initial teacher education (ITE) programmes are expected to prepare teachers who have the capacity to develop conceptually strong, responsive and inclusive teaching practices. The extent to which ITE programmes have been successful in this endeavour has been questioned both internationally (e.g. Lancaster & Auhl, 2013) and within the South African context (Council on Higher Education [CHE], 2010). In retrospect, it is not surprising that the review of initial teacher education (ITE) programmes conducted by the CHE between 2005 and 2007 found that the sector was experiencing tension between "the theoretical and conceptual rigour expected of a professional degree and the vocation-specific training of teachers" for classroom readiness (CHE, 2010: 103). The institutional mergers between teacher training colleges, faculties of education and universities of technologies meant that teacher educators were encountering approaches to the preparation of teachers very different to the ones they had previously used (Gordon, 2008; Kruss, 2008). The first national policy governing the provision of teacher education, the *Norms and Standards for Educators* (Department of Education, 2000) posed additional challenges to the newly merged sector: it stipulated that ITE programmes should prepare prospective teachers for 7 different 'roles of the educator'. By the end of their ITE, qualifying teachers should have achieved 10 exit level outcomes, verified against a set of 89 assessment criteria. South African teacher educators thus found themselves grappling with how to organise coursework and practicum expectations around these (extensive) lists of discrete roles, outcomes and competences (e.g. Fraser, Killen & Nieman, 2005). The CHE review noted that tensions around academic depth and contextual relevance were particularly prominent in programmes where a conceptual framework was absent.

In response to the findings of the CHE review and the imperative to strengthen ITE programmes offered to South African pre-service teachers, a symposium entitled '*Academic depth and rigour in initial teacher education*' was jointly organised by four universities in South Africa. This symposium, held in October 2014, attracted 125 delegates from 18 South African higher education institutions (HEIs). Representatives from the Department of Higher Education and Training (DHET), the Department of Basic Education and a delegation from the European Union also attended. The forty-eight papers presented over two days enabled teacher educators to engage in robust conversations about the academic depth and rigour of courses offered to pre-service teachers. Presentations ranged from considerations of the overall conceptual coherence of ITE curricula and benchmarking quality to contributions that grappled with academic depth and rigour in specific subjects and courses offered in ITE programmes. This special issue of *Perspectives in Education* arises from that symposium and provides a space for teacher educators who have been working to strengthen academic depth and rigour associated with ITE programmes to share their research, conceptualisation of courses, pedagogical innovations and assessment strategies with the sector more broadly. A contribution of this special issue to the national conversation about ITE is to show how a wide range of teacher educators, from different institutions and working in different subject areas, are working with academic depth and rigour to support the development of conceptually informed practice. Before introducing the papers included in this special issue, we make a case for why academic depth and rigour in university-based coursework is crucial for preparing prospective teachers for their work within the South African context.

2. Academic depth and rigour in initial teacher education

Since Shulman's (1987) seminal work on the knowledge bases for teaching and the importance of pedagogic reasoning for effective teaching, it has been increasingly recognised that a skills-based approach to teacher preparation is inadequate. This is especially true when the education system from which prospective teachers emerge and return to after qualification, is in dire need of transformation. Attention in the 'learning to teach' literature has increasingly turned to focussing on understanding the knowledge that supports the complex conceptual work that teachers do in their classrooms, their schools and their communities (Ball, Thames & Phelps, 2008; Cochran-Smith & Lytle, 1999; Darling-Hammond & Bransford, 2005; Loughran, Berry & Mulhall, 2006). Some of this complexity resides in the conceptual work teachers need to do as they select, organise and represent complex concepts in ways that learners find understandable. By the time they qualify, teachers need to have a solid grounding in the content and pedagogical knowledge required to mediate their subjects effectively (Banks *et al*., 2005; Darling-Hammond & Bransford, 2005). The complexity of teaching also exists in relation to managing the 'busyness' of classroom life and understanding the way that diverse learners think, learn and behave. This is especially crucial in the South African context, as schools become more inclusive and representative of the diversities in society. University-based coursework in initial teacher education has to ensure that prospective teachers understand how children develop and learn and what barriers might impede their ability to engage in learning opportunities. They also need to understand the complexity in the broad socio-economic, political and policy contexts in which they will begin their teaching careers. In addition, teachers have an ethical obligation to be agents of change for social justice in their institutions and the wider communities in which they work. To contribute to the transformation

of the education system, teachers need to recognise and resist exclusionary practices that exist and instead identify and promote inclusionary practices.

While skilled-based approaches to teacher training ensures that prospective teachers have mastered techniques associated with existing practices, theoretical knowledge is powerful precisely because it opens up possibilities for the transformation of present contextual realities and prevailing practices. It is for this reason that there has been recent critique (e.g. Shalem & Slonimsky, 2013; Young & Muller, 2014) of an 'anti-intellectual' approach in teacher training that undervalues the power of theoretical knowledge for enabling teachers to make sense of classroom interactions and guides the development of their teaching practices. Because teaching is so complex, university-based coursework in ITE, like in other fields, has a crucial role to play in enabling prospective teachers to undertake "conscious reflection on and systematic investigation of established knowledge" (Slonimsky & Shalem, 2006: 46), in order for them to expose, challenge and transcend prevalent assumptions about teaching and learning. This, we believe, is essential if newly qualified teachers are to develop the kind of teaching expertise that supports their core role of introducing their learners to the knowledge-based practices of the subjects they teach and support the development of rational judgement for ethical practices.

3. Understanding academic depth and rigour

Understanding the depth of a body of knowledge encompasses the structure, philosophy and skills of that discipline. Schwab (1978) distinguished between a subject's substantive knowledge (the ways in which subject matter is delineated and thought about within a discipline) and syntactic knowledge (how new knowledge is acquired and validated) and argues that both are essential for academic depth. The work of Winch (2013) contributes to an understanding of what it means to 'know' a subject and to use that knowledge for practical action. To claim to 'know' a subject it is necessary to know the existing stock of core knowledge (its propositions and the connections between them) and be able to make valid inferences from that knowledge (Winch, 2013). Furthermore, to 'know' a subject is to be able to identify and use the established methods for knowledge acquisition and creation in order to establish claims and validate inferences. Those who can claim to 'know' a subject can navigate its knowledge structures – such as the extent to which the subject develops by moving towards greater levels of abstraction (a vertical knowledge structure) or recognising how competing paradigms vie for dominance within that field (what Bernstein [1999] termed a horizontal knowledge structure). From our perspective, a further means of knowing a subject includes identifying its epistemological origins and thus being able to critique, counter and adapt the assumptions that underwrite such epistemes to be able to open them to further development arising from sources of knowledge not previously canonised into what is considered 'core knowledge'.

Rigour is regarded as an individual pursuit of careful, continual self-motivated action towards excellence in thinking, feeling, choosing, evaluating, relating to others, learning to learn and becoming one's own teacher (Unks, 1979). Increased opportunities for intellectual rigour prompt students to adopt a "deep approach" to how they engage with the content to be learnt (Trigwell, Prosser & Waterhouse, 1999). This kind of rigour is prevalent when students perceive their coursework to be intellectually challenging with high quality teaching and assessment. Strategic knowledge is activated when a student is confronted with situations or problems where no simple solutions are possible and opportunities for inference and the

application of knowledge are created. By way of contrast, a high workload paired with recall type assessments results in students adopting a less rigorous (surface) approach to learning characterised by memorising facts, procedures and routines. Rigour is thus compromised when students engage with coursework with the aim of knowledge reproduction merely to meet the requirements for assessment (Geiser, 2009).

Garber (2011) and Braxton (1993) contend that increasing rigour in academic coursework implies higher levels of cognitive demand in the assessment tasks that support student learning. Various frameworks have been devised for teachers and teacher educators intentionally to design and assess learning tasks that engage in rigorous ways with course content. The taxonomy for learning, teaching and assessing (Anderson, Krathwohl & Bloom, 2001) has reconstituted Bloom's (1956) taxonomy of educational objectives to describe increasingly complex ways one can work with knowledge. Teaching and assessing at higher cognitive levels can challenge students to engage with deep learning approaches, reaching the extent of their own abilities while participating in the thorough, logical and scientific process of solving real problems (Miller & Shih, 1999). Aside from setting learning tasks that promote rigorous engagement, the tools that teacher educators use to recognise and extend rigour in learning are equally important. The structure of the observed learning outcome (SOLO) taxonomy developed by Biggs and Collis (1982) suggest grounds on which teachers could recognise the structural complexity reflected in student responses to open-ended questions. The rigour revealed by an answer is demonstrated by students' ability to identify multiple relevant aspects of a phenomenon, explore relevant relationships between those aspects, account for or reconcile apparent contradictions and recognise a particular case as illustrative of a more generalisable concept.

4. The contribution of papers in this special issue to understanding academic depth and rigour in ITE in the South African context

A common theme that runs through the papers in this special issue is the extent to which theoretical knowledge in university-based coursework is able to strengthen the teaching practices of prospective teachers and prepare them for the challenges that exist within the South African schooling system. Several contributors grapple with academic depth and rigour as a means of deepening content and pedagogical knowledge. Others contribute to debates on providing prospective teachers with the conceptual knowledge that teachers need to address legacies of apartheid through opportunities for personal and institutional transformation. The importance of conceptual depth in ITE programmes is reflected in the current policy, the *Minimum Requirements for Teacher Education Qualifications* (DHET, 2015). It firmly rejects "a purely skills-based approach [to ITE], which relies almost exclusively on evidence of demonstrable outcomes as measures of success, without paying attention to how knowledge should underpin these skills for them to impact effectively on learning" (DHET, 2015: 9). The shift of emphasis in the design of ITE qualifications from technical training to a graduate level of expertise demands that teachers develop a "deep and systematic understanding of current thinking, practice, theory and method" with "intellectual enrichment", so that as practising teachers, they will be able to work with "flexibility in changing circumstances" (DHET, 2015: 54). The authors who have contributed papers to this special issue have interrogated these

principles and demonstrate how they can be embodied in the courses they teach so that academic depth and rigour enhances the development of students' teaching practices.

Two papers, one by Taylor and another by Bowie and Reed, analyse the extent to which HEIs are producing primary school teachers who have the capacity to improve the levels of literacy and numeracy among South African learners. In their paper, Bowie and Reed find that the depth and rigour in which primary school teachers are prepared for teaching English and mathematics varies between and within the ITE programmes offered by five HEIs. While pre-service teachers who elect to specialise in one of these subjects have high levels of content and pedagogical knowledge, those who have not specialised in these subjects do not even demonstrate basic levels of competence in these subjects. These findings are troubling when considering that many intermediate phase teachers find themselves teaching English and mathematics (often through the medium of English), irrespective of whether they specialised in these subjects or not. Taylor argues that the ability of teachers to use inferential reasoning is crucial for prospective teachers, as it establishes the conditions for their own literacy and supports their ability to engage in professional reasoning. Moreover, he argues that rigour and depth in the content and pedagogy of mathematics and English should be essential for all primary school teachers. Bowie and Reed take this further and suggest what types of university-based coursework would prepare primary school teachers to teach mathematics and English competently.

In their paper, Walton and Rusznyak consider the trade-offs in authenticity and academic depth that occur when an inclusive education module adopts knowledge-for-practice, knowledge-in-practice and knowledge-of-practice approaches to assessing student learning. Drawing on examples of actual assessment tasks, they show that when a knowledge-for-practice approach is used to assess student learning, academic depth is privileged at the expense of authenticity. The converse is true when a knowledge-in-practice approach to assessment is used. A knowledge-for-practice approach to assessing learning has the potential to contribute to academic depth and practice-based authenticity. Based on this analysis, the authors suggest ways in which assessment tasks for prospective teachers can be designed to enhance academic depth without compromising authenticity.

The special issue contains two papers that consider academic depth and rigour in relation to mathematics education for secondary teachers. In his paper, van Jaarsveld tackles the contentious matter of discipline-specific language use by teachers within a reconsidered perspective concerning ambiguity and correctness. With reference to discourse excerpts from a mathematics teacher's actual teaching, van Jaarsveld demonstrates how ambiguity in language use concerning mathematics creates misunderstandings and incorrect knowledge, unwittingly making it impossible for learners to solve mathematics problems. Arguing for an authentic language of mathematics as an aspect of academic rigour, the paper shows such usage can promote meaningful mathematical dialogue and problem solving. In the second paper in mathematics education, Pournara analyses two incidents from a course on financial mathematics, which created opportunities for pre-service teachers to explore their understanding of compound and exponential growth. When a student unexpectedly produced a quadratic model for an exponential relationship, opportunities opened up to study the usefulness of the quadratic function as a model of the given situation. Pournara's article reflects on how suitable opportunities for engaging with peers' mathematical contributions

might be included in a pre-service programme for secondary mathematics teachers in order to enhance depth and rigour.

A theme addressed by four papers in this issue considers the potential of university-based coursework for enhancing transformation at a deeply personal level for teacher educators and prospective students. A paper by Geduld and Sathorar included in this special issue reflects on how a framework of a humanising pedagogy helped diverse staff in a merged institution confront the pain and limitations of their own personal and educational pasts, reconstitute their identities as South African teacher educators and move towards a shared vision of teacher education. Geduld and Sathorar examine how this process of personal transformation enhanced the conceptual coherence of their ITE curriculum design and enabled connections to be made between course offerings. Mendelowitz and Dixon provide a pedagogical framework for rethinking the role of risk in teaching and learning, with particular reference to linguistic diversity and students' lived experience as part of the curriculum. They demonstrate how a heteroglossic pedagogy, with reference to students' discourse concerning risky topics in the context of literary discussions enables awareness of genre and register. In another paper on this theme, Giorza reports on her use of artworks displayed at the Constitutional Court of South Africa as a basis for undertaking enquiry-based teaching. By asking pre-service teachers to respond to works of art through a social semiotic approach, they develop their understanding of concepts such as art, justice, equality and humanity in a very personal process of meaning making. This, Giorza argues, is important for them as students of art, as academics and as prospective teachers. Also in the field of visual art education, Westraadt demonstrates that visual art provides opportunities for students (in ITE programmes and in schools) to develop as readers, writers and thinkers. Her paper reports on a research project in which pre-service teachers 'read', interpret and decode works by contemporary artists and then negotiate the meaning generated in their interpretations in writing. She argues that this process strengthened the reading comprehension and visual literacy of the pre-service teacher who participated in her study.

Two papers in this issue consider how introducing student teachers to metacognition with respect to their own experiences of being assessed can enhance their professional development. Steinberg and Waspe's paper emanates from a realisation that pre-service teachers' expectations of assessment were fundamentally different from those of their lecturers. Students expected high grades with minimum effort whereas lecturers expected student learning with high effort. The authors argue student expectations need to be informed by deep theoretical understandings of what constitutes rigour in assessment for their development as intellectuals and as prospective teachers. Rembach and Dison draw on Biggs and Collis' (1982) SOLO taxonomy to prompt pre-service teachers to analyse their own responses to the demands of assessment tasks. Working across the studies of social science and inclusive education, the authors argue that the SOLO taxonomy provides a useful instrument for pre-service teachers to participate meaningfully in identifying the strengths and weaknesses of their assessment responses, thereby developing students' metacognition with respect to their own learning. This is directly beneficial to understanding assessment and evaluation in their future classroom practices.

Two papers in this special issue discuss the challenges of preparing pre-service teachers for the complex and differentiated nature of South African schools and society. A paper by Nomlomo and Sosibo analyse student voices and reflect on the inherent limitations of a one-year PGCE

programme in terms of the exposure of pre-service teachers to contextual diversity, which they argue is a trade-off with respect to the depth of subject content knowledge gained by a three-year bachelor's degree. Their paper explores the implications for the disconnect that PGCE graduates experience as newly qualified teachers teaching in contexts very different to the context in which they had undertaken a teaching practicum. In seeking academic depth, they remind us of the necessity of listening to the voice of all stakeholders. The second paper, by Pennefather, considers the converse: exploring how a practicum experience for PGCE student teachers in a rural schooling context contributes to their personal and professional development. The model she presents seeks to understand the student teacher learning through three interconnected and complementary aspects: situated learning, rurality and early professional learning. Pennefather is concerned that the preparation of pre-service teachers should not reproduce the existing schemata of rurality or replicate examples of ineffectual teaching in the rural context.

5. Conclusion

This special issue provides a timely contribution to discussions in the sector regarding the academic depth and rigour in university-based coursework offered to prospective teachers. The knowledge-based work undertaken by teachers includes the advancement of literacy, deepening of knowledge practices and the ability to recognise and resist marginalising practices that exist in schooling. The contributions exemplify what Wally Morrow alluded to when he referred to teaching as a "theory-laden practice" that "cannot be understood independently of the theorising (understandings and concepts) that make it the practice it is" (Morrow, 2007: 79). As the editors of this special issue, we have been encouraged by the manner in which contributors have turned to research to strengthen the design, pedagogy and assessment of coursework offered in ITE programmes. In so doing, they create potentially powerful opportunities for prospective teachers to think deeply and critically about teaching and learning in their subjects, about exclusionary and inclusionary practices in schools and about opening up opportunities for student teachers to think meta-cognitively about their development as teachers. Although there is still much work to do in this regard, the set of papers included in this special issue open possibilities for further interrogation. Through a deepening engagement with knowledge the integration of theory and practice becomes possible so that knowledge becomes a critique of marginalising practices found throughout South Africa's education system and a means of enabling teacher educators, prospective teachers and ultimately learners alike to move beyond the assimilation of knowledge to using it for advancing transformation.

References

Anderson, L.W., Krathwohl, D.R. & Bloom, B.S. 2001. *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives.* New York: Allyn & Bacon.

Ball, D.L., Thames, M.H. & Phelps, G. 2008. Content knowledge for teaching: What makes it special? *Journal of Teacher Education,* 59, 389-407.http://dx.doi.org/10.1177/0022487108324554

Banks, J., Cochran-Smith, M., Moll, L., Richert, A., Zeichner, K., LePage, P. & Duffy, H. 2005. Teaching diverse learners. In L. Darling-Hammond & J. Bransford (Eds.). *Preparing teachers for a changing world: What teachers should learn and be able to do.* San Fransisco: Jossey-Bass. pp. 232-274.

Bernstein, B. 1999. Vertical and horizontal discourse: An essay. *British Journal of Sociology of Education,* 20(2), 157-173. http://dx.doi.org/10.1080/01425699995380

Biggs, J. & Collis, K. 1982. *Evaluating the quality of learning: The SOLO taxonomy*. New York: Academic press.

Bloom, B.S. 1956. *Taxonomy of educational objectives. Vol. 1: Cognitive domain.* New York: McKay.

Braxton, J. 1993. Selectivity and rigor in research universities. *Journal of Higher Education*, 64, 657-675. http://dx.doi.org/10.2307/2960017

Cochran-Smith, M. & Lytle, S. 1999. Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education*, 24(1), 249-305. http://dx.doi.org/10.3102/0091732X024001249

Council on Higher Education (CHE). 2010. *Report on the national review of academic and professional programmes in education*. Pretoria: Council on Higher Education.

Darling-Hammond, L. & Bransford, J. 2005. *Preparing teachers for a changing world. What teachers should learn and be able to do.* San Francisco: Jossey Bass.

Department of Education (DoE). 2000. *Recognition and evaluation of qualifications for employment in education based on the norms and standards for educators.* Pretoria: Government Printers.

Department of Higher Education and Training (DHET). 2015. *Policy on the minimum requirements for teacher education qualifications*, as revised 2014. Pretoria: Government Printers.

Fraser, W.J., Killen, R. & Nieman, M.M. 2005. Issues in competence and pre-service teacher education, part 2: The assessment of teaching practice. *South African Journal of Higher Education*, 19(2), 246-259.

Garber, J. 2011. Differentiated academic rigor: An opportunity for increased student success. Unpublished paper. Ohio: John Caroll University.

Geiser, S. 2009. Back to the basics: In defense of achievement (and achievement tests) in college admissions. *Change*, 41(1), 16-23. http://dx.doi.org/10.3200/CHNG.41.1.16-23

Gordon, A. 2008. Reconfiguring the (con)text: Initial professional education of teachers at the Wits School of Education. In G. Kruss (Ed.). *Opportunities and challenges for teacher education curriculum in South Africa*. Pretoria: HSRC Press. pp. 152-180.

Kruss, G. 2008. *Teacher education and institutional change in South Africa*. Cape Town: HSRC Press.

Lancaster, J. & Auhl, G. 2013. Encouraging pattern language development in a pre-service inclusive education course: A comparative study. *International Journal of Disability, Development and Education*, 60(4), 363-381. http://dx.doi.org/10.1080/1034912X.2013.846466

Loughran, J., Berry, A. & Mulhall, P. 2006. *Understanding and developing science teachers' pedagogical content knowledge*. Rotterdam: Sense Publishers.

Miller, G. & Shih, C. 1999. A faculty assessment of their academic rigor of on- and off-campus courses in agriculture. *Journal of Agricultural Education*, 40, 57-65. http://dx.doi.org/10.5032/jae.1999.01057

Morrow, W. 2007. *Learning to teach in South Africa*. Pretoria: HSRC Press.

Schwab, J.J. 1978. Education and the structure of the disciplines. In I. Westbury & N.J. Wilkof (Eds.). *Science, curriculum, and liberal education, selected essays*. Chicago/London: The University of Chicago Press. pp. 229-272.

Shalem, Y. & Slonimsky, L. 2013. Practical knowledge of teaching practice – what counts? *Journal of Education*, 58, 67-86.

Shulman, L.S. 1987. Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review,* 57(1), 1-22. http://dx.doi.org/10.17763/haer.57.1.j463w79r56455411

Slonimsky, L. & Shalem, Y. 2006. Pedagogic responsiveness for academic depth. *Journal of Education*, 40, 35-58.

Trigwell, K., Prosser, M. & Waterhouse, F. 1999. Relations between teachers' approaches to teaching and students' approaches to learning. *Higher Education*, 37, 57-70. http://dx.doi.org/10.1023/A:1003548313194

Unks, G. 1979. The scholastic perspectives on understanding children's undersdtanding. *Childhood Education*, 72, 258-259.

Winch, C. 2013. Curriculum design and epistemic ascent. *Journal of Philosophy of Education*, 47(1), 128-146. http://dx.doi.org/10.1111/1467-9752.12006

Young, M. & Muller, J. 2014. From the sociology of professions to the sociology of professional knowledge. In J. Muller & M. Young (Eds.). *Knowledge, expertise and the professions*. London: Routledge. pp. 3-17.