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The scholarly impact of doctoral research conducted in the field of education in South Africa

CC Wolhuter

School for Education Studies, North-West University, Potchefstroom, South Africa
Charl.Wolhuter@nwu.ac.za

The aim of this study is to investigate the scholarly impact of knowledge generated as part of doctoral studies in the field of education in South Africa. The transition rate of the 97 doctoral theses completed in the various fields of education in South Africa in 2008 into peer-reviewed articles and chapters in scholarly books, as well as the citation impact of these theses, were studied. It was found that the transition rates of these theses to journal articles and book chapters were low, as was their citation impact. Eighty three of the 97 theses did not transfer into any kind of publication, 70 out of the 97 made no citation impact, and 65 theses neither transferred to an article/a book chapter, nor did they receive any citation. The low scholarly impact of doctoral research in education in South Africa is related to a number of contextual and field-specific factors, identified in the survey of literature. The main recommendation made is the mapping of fields of education scholarship, making possible the identification of lacuna for research with high impact potential.

Keywords: citation impact; doctoral education; doctoral education in South Africa; educational research; educational research in South Africa; mapping of fields of education scholarship; quality of doctoral education

Introduction

Concerns over the low research output generated in South Africa, the low research productivity at South African universities in particular, and the meagre contribution of South Africa to the global knowledge pool, are frequently noted. Doctoral study not only consumes financial and resources as well as time, but receives substantial investment of effort from doctoral students. Laying claim to a major part of the time of the senior sector of academic staff attached to South African universities, doctoral theses represent perhaps the biggest source of material that might build the edifice of scholarly knowledge. The question can justifiably be asked as to the function of this pivotal part of the knowledge production project in South Africa, i.e. the transition rate of knowledge generated as part of doctoral studies, into subsequent scholarly books and journals. Given the meteoric rise in doctoral enrolments worldwide (*confer* (cf.) Wolhuter, 2011), unmatched by a commensurate rise of the size of the academic profession on the one hand, and on the other, the increasing pressure on universities to perform as centres of knowledge production (research) in knowledge-driven economies, this question as to the scholarly impact of doctoral education is of concern not only to South Africa, but indeed has global relevance. The aim of this research was to determine the scholarly impact of doctoral theses produced in the various fields of education in South Africa during the five-year period between 2008-2012 (inclusive), a to relate thesis-to-publication rates and citations of theses to contextual and field-specific factors, which impact on education scholarship in South Africa. The article commences with a survey of the relevant literature. It is followed by an explanation of the research methodology. The research findings are then presented and discussed.

Survey of the Relevant Literature

This survey can be logically divided into six parts, namely: low research output in South Africa; the international impact of research done in South Africa; the state of educational research in South Africa; problems pertaining to the field of education that have a bearing on the thesis-to-publication transition rates (in general, i.e., worldwide, and in South Africa in particular); research on doctoral education in South Africa; and research on the transition of doctoral research into scholarly articles.

The low research output of South African researchers

In recent history, the number of scholarly publications emanating from South African researchers has grown substantially, where the total number of articles published by South African scholars in ISI-Thomson Reuters-indexed journals increased from 2,200 in 1981, to 3,617 in 2000, to 7,468 in 2010 (Pouris, 2012). Yet this represents but 0.65 percent of the total pool of articles in these journals, and it places South Africa in the 35th position of countries producing research, and in 2012 only two positions above what it was in the year 2000 (Pouris, 2012).

In the recently completed Changing Academic Profession (CAP) International Survey of the Academic Profession, academics at South African universities reported the lowest research output of the 22 participating countries. In the three-year period leading up to the survey, South African academics had, on average, authored only 3.0 articles in peer-reviewed journals and book chapters, compared to values of 4.4 seen in Brazil, 5.1 in Argentina, 7.0 in Canada, 5.9 in the United States of America, 10.4 in Hong Kong, and 10.9 in South Korea (Wolhuter, 2014a). One causal factor of this may be the time-consuming, energy-tapping and demoralising

double-barreled managerialism (from two sources: university management and national government) that has descended on the South African academic profession – with greater speed and intensity than in the rest of the world – in the post-1994 era (cf. Wolhuter, Higgs, Higgs & Ntshoe, 2011).

It should be added that for South African academics attached to departments/schools/faculties of education, the research output is lower than that of the academic profession as a whole. According to the CAP data, it transpired that in the three-year period leading up to the survey in question, the average South African academic attached to a department/school/faculty of education, authored or co-authored only 1.33 books, compared to the 2.56 recorded for academics attached to other units. During the same period, the average number of articles or book chapters published by South African academics attached to education faculties /schools/departments was 3.68, compared to 3.71 for academics attached to other units (Van der Walt, Potgieter, Wolhuter, Higgs, Ntshoe & Higgs, 2010).

The international impact of research done in South Africa

During the past decade, a number of studies have been conducted regarding the international impact of South African scholarship. Surveying the Institute for Scientific Information (ISI) pool of journals for the period 1997-2001, King (2004) found that South Africa accounted for 0.31% (i.e. three per thousand) of the world's citations. Although the years do not correspond, this is even lower than the South African share of the global research output quoted above. The 2006 Academy of Science of South Africa (ASSAf) research on research publishing in South Africa calculated the relative impact factor (viz. the citation impact of articles by South African authors divided by the world citation impact for articles from the particular discipline) with respect to 106 disciplines, for five-year periods, from 1981 to 2004. While there was in the case of most disciplines an increase from 1981-1985 to 2000-2004, for the period 2000-2004 only 18 of the 106 disciplines had a value of 1.0 or more (ASSAf, 2006).

Tijssen, Mouton, Van Leeuwen and Boshoff (2006) carried out a citation-impact analysis of a set of 253 South African peer-reviewed journals for the period 1994-2002, and concluded that the vast majority of local journals are virtually invisible on the international circuit. The 2009 ASSAf Report on Scholarly Books in South Africa included reference to a study on the citation impact of 332 South African-authored monographs produced between 2001 and 2006. Just over half of these received citations; the average number of citations in this group was 8.47; while, 55% of the citations were published in ISI journals (ASSAf, 2009).

These results show a skewed pattern of impact: a large proportion of monographs without any impact (neither nationally nor internationally); but those that did succeed in making an impact, made a substantial impact, locally as well as internationally. Finally, the 2011 ASSAf report on the State of the Humanities in South Africa, details a study investigating the impact (in the ISI journal pool) of South African-authored research published in ISI journals. The study found strong evidence of growing internationalisation of South African-scholarly publications (ASSAf, 2011).

Field-normalised citation scores (viz. the number of citations of articles with South African authors over the world average number of citations in that scholarly field) were also calculated. While there is, once again, evidence of growing internationalisation, the international impact of South African authors does not measure up to the global norm. For example, the field of normalised citation scores for South African-authored articles within the field of Economic and Management Sciences rose from 0.33 during the 1995-1998 period, to 0.39 during the 2004-2007 period (ASSAf, 2011) (i.e. still far below 1.0, which would signal equality with the global norm).

To summarise all these studies, there appears to be a rising tide of international impact of South African scholarship. On average/aggregate, this impact is still well below the international level. International impact is also very unequal, with certain research attaining high international visibility, while some research having (even nationally) no noticeable impact.

The state of educational research in South Africa

Turning to the state of educational research in South Africa, the most extensive survey, although it is now starting to become dated, is the National Research Foundation Report published in 2009 (Deacon, Osman & Buchler, 2009). The Report summarised the volume of educational research produced in South Africa as both prolific and growing. The total output of research (comprising journal articles, book chapters, conference papers, research reports, theses and books) increased from 541 in 1995, to 1,027 in 2006 (the years bracketed for study by the authors) (Deacon et al., 2009). The Report concluded that most (94%) of the research done was small-scale research; and the Report lamented what it called the lack of rigour (breadth and depth) in educational research in South Africa, noting particularly the absence of large-scale surveys and quantitative analyses (Deacon et al., 2009).

The Report contains no citation analysis of the impact of educational research; but when it comes to international profile, it mentions that 27% of journal articles were published in non-South African journals (Deacon et al., 2009). With

regards to the absence of large-scale research projects, it can also be inferred that this absence constitutes a force preventing a high international impact of South African research in education, as it is large-scale studies and rigorous analysis that tend to produce material attracting the interest of an international readership (Muller & Hoadley, 2013:178; Wolhuter, 2011).

The 2006 ASSAf Report referred to above also contained a calculation on the absolute and relative impact of South African-authored articles in the field of education in the ISI journal pool for the five-year cycles between 1981 and 2004. The absolute impact declined from 0.72 in the period of 1981-1985, to 0.46 in the period of 2000-2004 (ASSAf, 2006). In contrast to most other fields, however, the relative impact also declined – from 1.01 in the period of 1981-1985, to 0.46 in the period of 2000-2004 (ASSAf, 2006).

After undertaking a citation analysis of the articles published in the *South African Journal of Education*, for the period of 2000-2010, Wolhuter (2011) came to the conclusion that these articles had a low impact, both nationally and internationally. Of the 489 articles of South-African authorship published in that journal in the period under investigation, 220 (or 41%) had no citation impact; while 366 (75%) had no international impact (Wolhuter, 2011). In the 2011 ASSAf study cited above, the field-normalised impact score for articles by South African authors in the field of education was also calculated. This score rose from 0.22 during the period of 1995-98 to 0.49 during the period of 2004-2007 (ASSAf, 2011), i.e. an increase of more than 100 percent; but from a low base, and still below (less than half) the international norm.

The general picture emerging from all these studies is a rising volume of research in the field of Education by South African authors. There is, likewise, an increase in citation impact; but the citation impact remains, compared to international benchmarks, very low.

Problems pertaining to the field of education and South African context which have a bearing on the thesis-to-publication transition rates

The low impact described in the preceding section can be linked to a number of field-specific and contextual factors. To begin with the field-specific factors, education as an autonomous field does not have a long history at universities (Furlong, 2013:14-16). The first professor of education was appointed only as late as 1776 (in Göttingen, Germany) and even in a country such as England, with a history of universities spanning over almost a millennium, the institutional presence of education dates back only one and a half centuries (University of Manchester, in 1852) (Furlong, 2013:16). Faculties, schools or departments of edu-

cation enjoy low prestige at universities worldwide (Gardiner, 2008; Labaree, 1998), and these faculties/schools/departments tend to be oriented towards the education of teachers, rather than towards engaging in research (Levin & Qi, 2013:8), a feature aggravated by the trend of recent decades for teacher education programmes to change from providing the student a grounding in the basic disciplines of education (such as philosophy of education, history of education, sociology of education, etc.) to equipping the student with a set of techniques deemed necessary for good teaching, not unlike artisanal training (Altbach, 1991:492; Schweisfurth, 1999:94). Whatever research does take place is mainly directed at addressing issues or problems in practice (i.e. in schools and in classrooms) (Whitty, 2006), so much so that Ermenc (2013:137) states that in continental Europe there has been, since the 1960s, a school of thought in the educational research community that rather than being a field of scholarship with its own theories and methodological and theoretical core, education should be conceptualised as an applied research area, which develops proposals for the operation of schools and for the improvement of educational practice. Funding levels of research in education, compared to other fields, are low. A recent Organisation for Economic Cooperation and Development (OECD) report states that research in the health sciences receives about 15 times more funding across member countries than does education, despite the fact that in fiscal terms, health is not even twice as large as education (OECD, 2012). Under these circumstances, it comes as no surprise that education is an incoherent field characterised by uncertain, non-accumulative knowledge (Furlong, 2013:10-11). Many subfields draw so heavily on the theoretical frameworks of related fields (e.g. educational psychology on psychology, or sociology of education on sociology) that it is sometimes difficult to make a case for the existence of an autonomous scholarly field of education. One of the most eminent scholars in comparative education, Erwin Epstein (1994:918) discounts comparative education as a discipline (with, for example, its own object of study, methodologies and theoretical frameworks), preferring to define it as an interdisciplinary field of study that applies historical, philosophical and social science theories and methods to international problems in education.

Within the South African context, a number of factors aggravate field-specific factors, which render that much more difficult the scholarly impact of doctoral research done in education. The international academic boycott, which was waged against the country from *circa* 1960-1990, effectively cut academics off from the international scholarly community. The current senior corps of the academic profession (who are likely still to

form the majority of available supervisors for doctoral students), were badly affected by this boycott (cf. Harricombe & Lancaster, 1995) in the formative years of their academic careers. It is not only the fact that the boycott insulated the South African academic profession, but it is worth noting that academic community in education at the historically Afrikaans universities went in an academically idiosyncratic direction, with members proclaiming sub-disciplines such as “metagogics” (cf. Coetzee, 1983:36) or “ephebagogics” (cf. Beyers-Nel, 1973:1), which often had but one proponent, proclaimed in a single publication, which the outside world took no notice of. These developments had no national, let alone international value as nodes or reference points of scholarship. On the other hand, the progressive pre-1994 scholarship in education, located at the historically white English universities and their rising generation of black scholars, were so strongly fixated on a critique of the education dispensation of the time, that they did not spend much attention to the furthering of basic education knowledge and the building of a theoretical corpus of such knowledge (cf. Wolhuter, 1999). After 1994, a general malaise took hold over the South African intellectual community, during which time a critical voice can be observed to have become somewhat mute. This has been described by Gumede and Dikeni (2009) more broadly, and also pointed out with respect to education, for example in Weeks, Herman, Maarman and Wolhuter’s (2006) assessment of post-1994 comparative education in South Africa. Further to the uncongenial professional environment of managerialism in the post-1994 era, as described above, academics attached to Faculties of Education have had to contend with the ceaseless avalanche of policy documents and changes pertaining to (school) education, leaving little, if any time for basic education research (cf. Van der Walt et al., 2010). The new (post-1994) Norms and Standards for Teachers (cf. Brunton & Associates, 2003) brought about the same movement in teacher education, away from the basic sub-disciplines of education as was happening internationally, seeing the same dominance of practice oriented research – no doubt accentuated by the post-1994 restructuring of the education system – while the preference for such research by funding agencies, as happened elsewhere in the world, was to be seen in South Africa as well (cf. Muller & Hoadley, 2013).

Research on doctoral education in South Africa

In a survey of research on doctoral education in South Africa, Wolhuter (2011) has concluded that, in contrast to the veritable explosion of research on doctoral education abroad, only a minuscule number of publications on this topic have appeared on South African soil. This study identified two lacu-

nae in the research on doctoral education in South Africa, as well as internationally, namely: an empirical validation of the claimed rates of return to doctoral education; and research on the scholarly contribution/impact of doctoral education, respectively (Wolhuter, 2011).

Research on the transition of doctoral research into scholarly articles

Broadly speaking, the transition rate of graduate student-generated research into peer-reviewed articles and scholarly book chapters is surprisingly low around the world. For example, Conley and Önder (2014) investigated research productivity (that is, overall research productivity, not just the publications emanating from theses) of PhD recipients in the field of economics from universities in the United States of America and Canada between 1985 and 2000. They found that only the top 10-20 percent of PhD graduates are likely to accumulate a research record good enough to secure a post at a mid-ranking university (Conley & Önder, 2014). On topic of the transition of doctoral research to publications, Lee and Kamler (2008) have developed a pedagogy aimed at increasing the number of publications from doctoral research. This pedagogy differs from the conventional doctoral education model (supervisor-student, one-to-one apprenticeship model), to deliberately working for publication. Key elements of the pedagogy are: the use of writing groups, a supervisory process deliberately aimed at publishing from the thesis research, and principles of recontextualisation that involve moving away from thesis chapter to journal article in terms of part-whole genre and audience (Lee & Kamler, 2008). Mallette (2006) investigated the publication output of doctoral education graduates from the University of California, for the five-year period after their graduation, found that 36.7 percent of PhD graduates in Education, and 13.7 percent of EdD graduates produced at least one publication in this five-year period. This study dealt with the general research output of the education doctoral graduates; it found that in the literature, no study on the scholarly impact of doctoral research, or on the rate and nature of the development of publications from the material contained in these theses/dissertations could be found.

In summary, despite the impressive growth in recent years, the research productivity of the South African academe remains low. Furthermore, the scholarly impact of research is below the international norm, once again, despite a marked improvement in recent years. This also applies to the field of Education. Research on doctoral education in South Africa as well as abroad widely omits study of the scholarly impact of doctoral research, as well as on the transition of doctoral research to subsequent publications. A number of field-specific (education) and (South African)

contextual factors create an unfavourable environment for doctoral research conducted in South Africa in the field of education to make a strong scholarly impact.

Research Method

From the Nexus database of the National Research Foundation (NRF), all the doctoral research projects (i.e. theses) completed in 2008 in all the scholarly fields of education were extracted. By means of a Google Scholar search and a search of the ERIC database (Education Resources Information Center), the following facets of the impact of these theses on the scholarly work in education until the end of 2013 (to allow for a five-year term, i.e. comparable to the conventionally used 5-year impact factor of journals) were determined:

- How many theses resulted in publications of the following types:
 - chapters in books published nationally?
 - chapters in books published internationally?
 - articles in national journals?
 - articles in international journals?
- How many self-citations came from these theses:
 - in books published nationally?

-in books published internationally?

-in articles in national journals?

-in articles in international journals?

- How many times were these theses cited by authors, other than the author of the thesis:

-in books published nationally?

-in books published internationally?

-in articles in national journals?

-in articles in international journals?

Findings

According to the Nexus database, a total of 97 South African doctoral theses were produced in the fields of Education during 2008. The distribution of these theses through the various fields of educational scholarship is presented in Table 1. The field with the largest number of theses was organisation, administration and management (of primary and secondary education), followed by the teaching of specific subjects (at primary and secondary-school levels). This was followed by the fields of comparative and international education, and the sociology of education, in a combined third position.

Table 1 Doctoral theses produced in South Africa in 2008 in various fields of education

Field	Number of Theses
Organisation, Administration and Management (of Primary and Secondary Education)	24
Teaching of Specific School Subjects	10
Comparative and International Education	8
Teaching Science (General)	8
Sociology of Education	8
Tertiary Education (General)	6
Adult Education, Lifelong Education, Non-formal Education	6
Counselling (Primary and Secondary Education)	4
Curriculum Planning	4
Organisation, Administration and Management of Tertiary Education	3
Curriculum Planning (Tertiary Education)	3
General	2
Special Needs Education	2
Teacher Education and Teacher Training	2
Tests and Measurements	2
Teaching Profession (Primary and Secondary Education)	1
Education Law	1
College/University Lecturers and their Education	1
Sociology of Education (Tertiary Education)	1
Student Financing (Tertiary Education)	1
Total	97

The figures in Table 1 shows the pragmatic or practice-based orientation of education research in South Africa during the period in question. The foci of study of fields such as organisation and management of education and teaching of specific subjects reflect concerns that are to be found 'at the coalface' of everyday school and classroom life. Even the theses in sociology of education and comparative education mostly deal with a practical problem (such as inclusivity of education or the impact of vocational education) in a very narrowly

circumscribed geographical area, rather than by means of a given theoretical frame. On the other hand, some of the foundation subjects, such as philosophy of education or history of education, are totally absent from the list of theses from this period.

The total numbers of the various forms of scholarly impact, which theses have had up to the end of 2013, are presented in Table 2 and in Figure 1.

Table 2 The various forms of scholarly impact which theses completed at South African universities in fields of education from 2008-2013 (inclusive). (Figures indicate number of theses)

Category of Scholarly Impact	Sub-Category of Scholarly Impact	Number of chapters/articles/citations				
		0	1	2	3	3<
Thesis going over into:	Chapter in nationally published book	95	2	0	0	0
	Chapter in internationally published book	94	3	0	0	0
	Article published in national journal	87	8	2	0	0
	Article published in international journal*	87	10	0	0	0
Self-Citation	Chapter in nationally published book	96	1	0	0	0
	Chapter in internationally published book	96	1	0	0	0
	Article published in national journal	92	3	0	2	0
	Article published in international journal*	90	5	1	0	1 (7 times)
Citations by other scholars	Chapter in nationally published book	93	4	0	0	0
	Chapter in internationally published book	94	2	1	0	0
	Article published in national journal	88	6	2	0	1 (5 times)
	Article published in international journal*	85	9	2	0	1 (4 times)

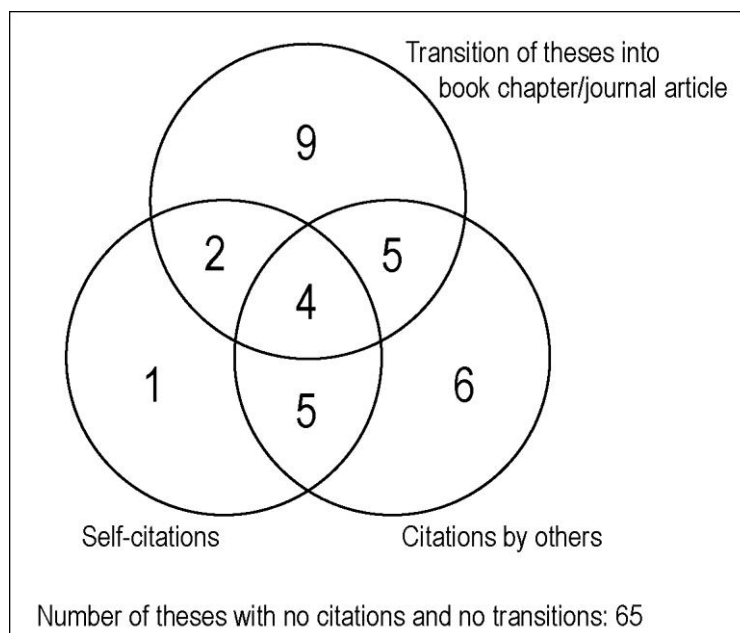


Figure 1 Scholarly Impact of Theses
(Total number of theses: 97)

In this research, as in that of Wolhuter (2011), ISI accredited journals with a South African-based editor, and with a predominantly South African editorial committee and South African authorship of articles, were considered to be national journals.

In each of the rows in Table 2, the output /impact seems to be meagre. This verdict can be motivated more graphically (see Figure 1), when it is stated that 77 of the 97 theses did not go over into any kind of publication (i.e. neither a book chapter nor an article), that 74 out of the 97 made no citation impact (be it self-citations or citations by other scholars), and in particular, that 65 theses neither went over to an article/a book chapter, nor were they cited anywhere; thus, for 65 of the 97, or 67 percent of the theses, the thesis was the end of the road; and the doctoral research was not

integrated into the edifice of national or international scholarly knowledge. Only five theses made the impressive impact of going to publication (be it a book chapter or an article) and subsequently being cited by other scholars as well. This overall low scholarly impact of doctoral research may be linked to the following contextual factors identified in the literature survey above: the managerial grip which has taken hold of the South African academic profession; as well as the extraordinary workload of academics attached to Faculties of Education. Here it is noteworthy to mention the assignment to keep up with the ceaseless restructuring of education and revision of education policy, which consumes an inordinate amount of time and energy, leaving little time left for the pursuit of research, and the pragmatic orientation of research,

induced by contextual factors and funding patterns alike.

To commence with the transition of doctoral research to book chapters, and to articles in scholarly journals, only two book chapters in nationally published books, and three chapters in international books, were derived from the 97 theses. The theses produced 11 articles in national journals, and 10 articles in international journals. A preference for journal articles over book chapters, is evident – probably reflecting the national and international academic protocol of attaching more prestige to articles in peer-reviewed scholarly journals than to book chapters. While this is a sound reason for lending preference to journal articles, the neglect of books and book chapters cannot be left at that. Scholarly books (be they single authored, multi-authored or coherent collective volumes around a central theme) fulfill an irreplaceable role in the academic project. This is mainly because, as rightly pointed out by the recent ASSAf report on the state of the production of scholarly books in South Africa, the way in which these publication mechanisms make possible the extensive, academically rich and thorough coverage of a topic to the extent that no one article can and, in that way, build

a systematic structure for the persistent and cumulative investigation of a scholarly field (ASSAf, 2009). Added to this is the problem of the dominance of small scale research in education research in South Africa (as described in the literature survey above). Van der Westhuizen, Van der Walt and Wolhuter (2011) have also provided an analysis of reviewers reports of submissions to the *South African Journal of Education*, finding that the single biggest reason for the rejection of manuscripts was the lack of a literature/theoretical framework (and it can surely safely be assumed that a substantial part of rejected manuscripts were based on doctoral theses), where it is clear that this low transition of theses into scholarly books and book chapters represents a serious lacuna in the education research project in South Africa. A case can be made that turning thesis research into material for articles alone (to the exclusion of books) serves to reinforce the incoherent, non-accumulative nature of the South African education research project.

National and international journals in which these articles were published are presented in Tables 3 and 4, respectively.

Table 3 South African journals in which articles were published derived from doctoral research completed in fields of education in South Africa in 2008

Journal	Number of Articles
<i>Acta Academica</i>	1
<i>African Journal of Research in Mathematics and Science and Technology Education</i>	1
<i>Discourse: Southern African Linguistics and Applied Language Studies Journal</i>	1
<i>Education as Change</i>	1
<i>Journal of Psychology in Africa</i>	1
<i>Pythagoras</i>	1
<i>SAHARA: Journal of Social Aspects of HIV/AIDS</i>	1
<i>South African Journal of Education</i>	1
<i>South African Journal of Higher Education</i>	2
<i>Tydskrif vir Geesteswetenskappe</i>	1

Table 4 International journals in which articles were published derived from doctoral research completed in fields of education in South Africa in 2008

Journal	Number of Articles
<i>Compare</i>	1
<i>Critical Issues in Curriculum, Pedagogy and Learning</i>	1
<i>Educational Technology and Society</i>	1
<i>Interactive Learning Environments</i>	1
<i>International Journal of Educational Development</i>	1
<i>Journal for Language Teaching</i>	1
<i>Journal of Language, Technology and Entrepreneurship</i>	1
<i>Journal of Social Sciences</i>	1
<i>The Journal of Educational Enquiry</i>	1
<i>US-China Education Review</i>	1

While the journals are generally highly rated journals – ISI-indexed journals in the case of international journals, and, in the case of national journals, at least journals acknowledged for university subsidy purposes by the Ministry of Higher Education, the top journals in the various fields of Education are absent. For example, in the field of

Comparative Education, while the journals *Compare* and *International Journal of Educational Development* appear, the top journals, namely the *Comparative Education Review*, *Comparative Education*, and *International Review of Education* are absent. This absence amongst the upper-echelon journals in the field can be indicative of three field-

specific and contextual-related features, namely the small scale of most research projects in education in South Africa, the fact that such studies are not placed in a well-constructed theoretical framework, and the practice-oriented, even seemingly parochial nature of much of education research done in South Africa.

The total numbers for self-citations are less than those for theses transferring into publications (cf. Table 2). It appears as if those few doctorate graduates who do engage in publishing activities after graduation, choose rather to convert thesis material into fully-fledged publications, so as to use the material to substantiate statements made in other publications that they may author. It also seems, in the few cases where a publication is

derived from doctoral research, that such publication is a terminal exercise, i.e. that it is not the beginning of a long-term project of research on a theme. This, once again, can be taken as symptomatic of the small scale nature of most of education research done in South Africa, and – at least as far as the high scholarly impact of research can be understood as one of its central objectives – a case can be made for the fact that this dominance of small scale research, also as far as doctoral research is concerned, is not an optimal employment of research sources.

The national and international journals in which self-citations appear are presented in Tables 5 and 6, respectively.

Table 5 South African journals in which self-citations are to be found from doctoral research completed in fields of education in South Africa in 2008

Journal	Number of Citations
<i>African Journal of Health Professionals Education</i>	1
<i>Education as Change</i>	3
<i>Perspectives in Education</i>	1
<i>South African Journal for Natural Science</i>	1
<i>South African Journal of Childhood Education</i>	1
<i>South African Journal of Psychology</i>	2

Table 6 International journals in which self-citations are to be found from doctoral research completed in fields of education in South Africa in 2008

Journal	Number of Citations
<i>Educational Technology and Society</i>	1
<i>International Journal of Adolescence and Youth</i>	1
<i>International Journal of Educational Science</i>	1
<i>International Journal of Qualitative Studies in Education</i>	1
<i>International Journal of Scientific Research in Education</i>	1
<i>Journal of Moral Education</i>	1
<i>Journal of Social Sciences</i>	5
<i>Journal of Systemics, Cybernetics and Information</i>	1
<i>Teaching and Teacher Education</i>	2

While ISI and nationally accredited journals are visible, whereas the very top journals in these fields are, as in the case of theses developed into articles, notably absent. The wide range of journals, showing the extent of the striking power of doctoral research, is commendable. However, the fact that it is so thinly spread (see the overwhelming dominance of single instances of citation) is once again indicative of research with a low intensity, non-sustainable scholarly impact, and possibly of an academic community occupied with small-scale research, which is also not properly integrated in the theoretical edifice of the field.

Chapters and journal-article citations of theses by authors, other than those of doctoral students, are presented below in Table 7 (national journals) and Table 8 (international journals).

The numbers of citations appearing in the tables above are rather small. At least, when tallied, these citations are higher than the number of self-citations, allowing for the observation that the doctoral research does not appear to feed into a

self-contained or self-isolated research enclave, but is connected to a wider community of scholars, however small and fragile the links are. Likewise, it is heartening to see that the number of citations in international journals exceeded a good number of citations in South African journals, where it is possible to conclude that the doctoral research is not relegated to the closed parochial system that only includes the university where it is conducted, but is – however indirectly – connected into a wider international academic community and network of knowledge. Notwithstanding these comments, overall there are low totals of citations, and the dispersed nature of these citations (here too, as in the case of self-citations, where most theses are cited only once) are indicative of the absence of large scale research, the non-accumulative nature of research, field incoherence, and of the anchoring of research into a legitimate and coherent theoretical framework.

The distribution of the various forms of scholarly impact, with respect to the various fields

of educational research in which the theses were completed, is presented in Table 9.

Fields with the highest impact are teacher education and curriculum planning, although still low; and, in the case of teacher education, this conclusion is drawn from a small base. Fields with exceptionally low impact scores are educational law, the teaching profession, special-needs education, educational tests and measurements, the sociology of education (primary and secondary education), organisation, administration and management (tertiary education), university/college lecturers and their education, the sociology of education (tertiary education) and student finances (tertiary education); although in most cases, this judgment is also based on a small base. All these fields should make a much stronger impact, on the international circuit in particular. To motivate this statement, the first two, namely educational law and the teaching profession, will be taken as examples. South African education takes place within a legal context of one of the most progressive Bills of Human Rights in the world,

and research on court rulings and legal developments on cases involving issues in education that are topical far beyond the borders of South Africa, should be much more visible internationally. The teaching profession in South Africa is 410,000 strong. The members of this profession have been given a significant assignment in the seven roles allotted to them since the 2003 Norms and Standards Policy Statement (cf. Brunton & Associates, 2003). Furthermore, they find themselves in an education system described as “a worldwide education reform programme telescoped into an instant time-space” (Wollhuter, 2010). All these factors justifiably create the expectation that research dealing with the teaching corps of South Africa should be of interest to the global community. Reasons for the low impact of research in all these fields can be searched for in the problems of the poor theoretical base of education research done in South Africa, the small-scale nature of research, and the finding as to the narrowly geographically circumscribed scope of much of the theses reported above.

Table 7 South African journals in which citations can be found from doctoral research completed in fields of education in South Africa in 2008; Citations by authors other than the doctoral student

Journal	Number of Citations
<i>African Journal of Research</i>	1
<i>Curationis</i>	1
<i>Journal for Juridical Science</i>	1
<i>Journal for Language Teaching</i>	1
<i>Koers</i>	1
<i>Per Lingua</i>	4
<i>Perspectives in Education</i>	1
<i>South African Journal for Natural Science</i>	1
<i>South African Journal of Education</i>	3
<i>South African Journal of Higher Education</i>	1

Table 8 International journals in which citations can be found from doctoral research completed in fields of education in South Africa in 2008; Citations by authors other than the doctoral student

Journal	Number of Citations
<i>African Journal of Teacher Education</i>	2
<i>Current Psychology</i>	1
<i>Educational Philosophy and Theory</i>	1
<i>e-international Journal of Educational Research</i>	1
<i>Electronic Journal of Educational Research</i>	1
<i>Information, Knowledge and Management</i>	1
<i>International Business and Economics Research Journal</i>	1
<i>The International Journal of Children's Rights</i>	1
<i>International Journal on School Disaffection</i>	1
<i>International Scientific Journal of Science and Mathematics Education</i>	1
<i>Journal of Pan African Studies</i>	1
<i>Journal of Sustainable Development in Africa</i>	1
<i>MIER Journal of Educational Studies, Trends and Practices</i>	1
<i>Research Papers in Education</i>	1
<i>SCRIPTA</i>	1
<i>Teaching and Teacher Education</i>	1

Table 9 Distribution of the various forms of scholarly impact with respect to the various fields of educational research in which the theses were completed

Form of scholarly impact:	Number of chapters/articles from theses				Number of self-citations in			Number of citations by other authors in					
	Total number of theses completed in field	Chapters in nationally published books	Chapters in internationally published books	Articles in South African journals	Articles in international journals	Chapters in nationally published books	Chapters in internationally published books	Articles in South African journals	Articles in international journals	Chapters in nationally published books	Chapters in internationally published books	Articles in South African journals	Articles in international journals
Education general	2	0	0	0	0	0	0	0	0	0	1	1	0
Teacher education and teacher training	2	0	0	1	1	0	0	3	0	0	0	0	0
Educational law	1	0	0	0	0	0	0	0	0	0	0	0	0
Comparative education	8	0	0	0	0	0	0	3	1	0	0	0	2
Educational organisation, management and administration (primary and secondary education)	24	1	1	3	4	0	0	0	2	0	1	2	7
Teaching science (general)	8	1	0	1	4	1	0	0	3	0	0	1	2
Teaching of specific school subjects	10	0	1	2	1	0	0	1	0	0	0	1	1
Curriculum planning	4	0	0	0	0	0	1	0	7	1	0	0	0
Teaching profession (primary and secondary education)	1	0	0	0	0	0	0	0	0	0	0	0	0
Special needs education	2	0	0	0	0	0	0	0	0	0	0	0	0
Educational tests and measurements	2	0	0	0	0	0	0	0	0	0	0	0	0
School counselling (primary and secondary education)	4	0	0	0	0	0	0	0	0	0	2	1	0
Sociology of education (primary and secondary education)	8	0	0	0	0	0	0	0	0	1	0	2	0
Tertiary education (general)	6	0	0	1	0	0	0	1	0	1	0	0	0
College/university lecturers and their education	1	0	0	0	0	0	0	0	0	0	0	0	0
Organisation, administration and management of tertiary education	3	0	1	0	0	0	0	0	0	0	0	0	0
Sociology of education (tertiary level)	1	0	0	0	0	0	0	0	0	0	0	0	0
Curriculum planning (general tertiary level)	3	0	0	1	0	0	0	1	0	1	0	5	5
Student finances (tertiary level)	1	0	0	0	0	0	0	0	0	0	0	0	0
Adult education, lifelong education, non-formal education	6	0	0	2	0	0	0	0	1	0	0	2	0
Totals	97	2	3	11	10	1	1	9	14	4	4	15	17

Conclusion

On all counts, the scholarly impact of South African doctoral research is low. For the 65 out of the sample of 97 theses accounted for in this research (67%), no scholarly impact could be traced, i.e. they did not transfer into a book chapter or article in a scholarly journal, nor were they ever cited after completion. It could, therefore, be concluded that the thesis was the end-of-the-road for the research reported in these 67 percent of theses; and that the research was never properly integrated into the corpus of scholarly knowledge in the field in question.

This represents a huge wastage of resources for the doctoral student, for the academic staff who had supervised this research, and for the amount of public resources invested in these research efforts. The fact of this wastage is underscored by the already poor research productivity of South African universities.

It is not only quantitatively but also qualitatively the case that the scholarly impact of doctoral research in South Africa is low. While in terms of theses being reworked into scholarly articles, and in terms of citations, those theses that do make an impact, generally do so in (nationally and ISI) accredited journals, but do not succeed in breaking through to the top journals in various fields. This poor performance can be traced to a number of factors: the extraordinary work-load and managerialism of the working environment of South African academics attached to faculties of education; the training of many current supervisors during the academic boycott; inadequate funding and the resultant small-scale nature of much of education research taking place in South Africa; and the absence of coherency in the scholarly field of education more broadly. Furthermore, scholars of education in South Africa are under pressure to conduct practice-oriented research, and scholars of education in South Africa neglect to build strong theoretical frameworks for their research, resulting in a non-accumulative pattern of knowledge production.

One positive aspect is to be found in the fact that an impact of any kind is reflected internationally, thereby showing education research as corresponding to the general pattern of South African research, namely, that it is becoming progressively successful in attaining an international profile.

A number of recommendations regarding follow-up research can be made. The first relates to the development of pedagogies for the purpose of turning doctoral research to publications. The pedagogy of Lee and Kamler (2008) saw international publication, where, as described in the literature review, the authors have developed a pedagogy of doctoral education with a proven track record, of turning thesis (doctoral) research into

publications. Research on the implementation and successful adaptation of this pedagogy to the South African context would thus prove a valuable way in which to follow up on this research.

While this research has encompassed the entire set of theses completed in the Educational sciences in South Africa in one year (2008), adding up to 97 theses, amongst the individual fields of educational research, it breaks into small numbers. It is therefore recommended that the scholarly impact of such theses, in each of these various fields, be the subject of cross-sectional research over a number of years (so as to provide a substantial database), and that the scholarly impact of these be studied. That would allow for more certainty as to the scholarly impact of doctoral research in these fields, as well as recommendations as to how to improve and increase the scholarly impact.

It should also be mentioned that the methodological framework for this study – which was *inter alia* determined by the NRF's classification of the fields of research in education – does not allow many significant aspects of scholarly research to be made visible. For example, Hart and Metcalfe (2010) recently published an analysis of citation patterns of feminist, female-authored and gender-issues research in higher education, and a similar exercise with regard to doctoral research in education in South Africa would be an interesting venture. When invoking the dimension of power relations, there is huge scope for research on the scholarly impact of doctoral research in South Africa. Not least important in this regard are global (North-South) power relations, and the manifestation of this on scholarly publication and citation patterns.

The main recommendation to be tabled, and the only one that can reveal all the identified possible causes of the unsatisfactory scholarly impact of doctoral research in education in South Africa, is the mapping of fields of education research. What is argued for here is the macro-mapping of fields, such as philosophy of education, educational management, educational psychology, etc., presenting graphically the main paradigms and points of foci of research. Examples of such exercises are indeed scarce, but Paulston's (1997) or Wolhuter's (2008) surveys of the field of comparative education can be cited as examples. Social cartography (cf. Paulston, 1996), in terms of mapping the field of comparative education, offers a possible technique by means of which to explicate a field of scholarship visibly, and can be recommended for this exercise of mapping fields of education scholarship. Fields of education scholarship ought to be mapped both internationally and nationally, in order to compare national and international foci of scholarship in particular fields, as was done in the field of higher education by

Wolhuter (2014b), for example. These mapped fields ought then to be examined in two aspects, where on the one hand, both foci and lacunae in the national and international foci should be identified, on the other hand, sight should not be lost of South African education practice, lest the reality of education in South Africa be ignored. Keeping both these aspects in mind, promising areas for scholarly inquiry, that is, areas with a sustainable impact on the international corpus of educational knowledge can be identified. Mapping entire fields of education scholarship thoroughly is beyond the capability of individual researchers. It is recommended that a research Centre of Excellence be established for this purpose. Currently none of the 14 research Centres of Excellence in South Africa deals directly with education, despite education and training being identified by the National Research Foundation as a top priority area of research (cf. National Research Foundation, 2015). Frick (2012:123) cites a number of studies abroad, which have found immersion into domain-specific knowledge, as a critical factor in doctoral and other research towards identifying problems and gaps in the present corpus of knowledge; and in establishing something new, in being creative and in getting research published. Hence, establishing a Centre of Excellence whose mandate is the mapping of fields of education scholarship, will ultimately be of importance far beyond the borders of South Africa. Such a centre will undoubtedly make a significant contribution to ensuring that not only South African doctoral research, but educational research at large, might make its impact felt internationally.

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