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THE RATIONALE, CHALLENGES AND BENEFITS OF JOINT DEGREES AS A NEW FORM OF DOCTORAL EDUCATION

Magda Fourie-Malherbe, Jan Botha
& Dorothy Stevens

INTRODUCTION

The phenomenon of international joint doctoral degrees¹ where two (or more) higher education institutions across national borders assume joint responsibility for the offering, examination and award of a doctoral qualification, is a relatively recent trend in higher education worldwide. Little research has been done on this form of doctoral education, and virtually none in South Africa where universities started exploring the offering of joint degrees about 10 years ago. For the purpose of this chapter we examined this new form of doctoral education at Stellenbosch University in South Africa – a medium-sized research-intensive university with approximately 35% postgraduate students. Our investigation was guided by the following research question: What is the rationale for engaging in joint doctorates and what are the challenges and benefits associated with this new form of doctoral education as experienced at Stellenbosch University?

EVOLUTION OF JOINT DOCTORAL DEGREES INTERNATIONALLY

The emergence of the phenomenon of joint international doctoral degrees needs to be understood against the background of a global academic revolution in higher education during the last half a century (see Altbach, Reisberg & Rumbley 2010). This development is summarised by Hazelkorn (2015:3ff) under four headings: (a)

¹ For the purpose of this paper the term 'joint degrees' will be used throughout as the phenomenon of joint degrees was the focus of our empirical investigation. However, the authors acknowledge that other forms of collaborative doctoral and master's programmes such as 'double degrees' and 'cotutelle' exist.

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the transition to knowledge-intensive economies, (b) demographic pressures and the global pursuit of talent, (c) the criticality of higher education to the economy and society and the importance of research universities, and (d) informed student choice and consumerist attitudes towards higher education. In this context there has been an intensification of a range of joint activities and cooperation between universities across national borders (Knight 2008, 2013). Likewise, new models of doctoral education have been developing that enhance the need for inter-institutional and international cooperation (Kehm 2007).

In Europe the introduction of double and joint degrees was given momentum by the Lisbon Recognition Convention and the Bologna Process. The Convention on the Recognition of Qualifications concerning Higher Education in the European Region, signed in Lisbon in 1997, was aimed at facilitating academic mobility between and among European countries. The Convention states that a joint degree refers to

... a higher education qualification issued jointly by at least two or more HEIs or jointly by one or more HEIs and other awarding bodies, on the basis of a study programme developed and/or provided jointly by the HEIs, possibly also in cooperation with other institutions (Council of Europe and UNESCO 1997).

This convention is an important instrument of the Bologna Process, a series of ministerial meetings and agreements between European countries designed to ensure comparability in the standards and quality of higher education qualifications (Witte 2006; Spexard 2015). The process was set in motion by the Bologna Declaration in 1999 which formulated a set of goals, including the development of a European Higher Education Area, to promote citizens' mobility and employability, to achieve greater compatibility and comparability of the systems of higher education, and to increase the international competitiveness of the European system of higher education as well as its world-wide attraction for students and scholars (Bologna Declaration 1999). Thanks to the support of European funding programmes, such as Erasmus Mundus, the offering of joint degrees in Europe became widespread. The Bologna Process culminated in the Budapest–Vienna Declaration of 2010 through which the European Higher Education Area became a reality.

Although the main thrust for the offering of joint degrees can be ascribed to these developments in Europe, joint degrees have also become part of the internationalised higher education landscape in many other parts of the world (Altbach & Knight 2007). For example, the Transatlantic Declaration on European Union–United States Relations provided the framework for the ATLANTIS Programmes in terms of which consortia of higher education and training institutions are supported to work

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together, *inter alia* through the offering of double and joint degrees (Knight 2008). Universities in various Asian countries initially favoured opportunities to offer double and joint degrees with American, European and Australian universities, but have since also moved towards setting up such programmes among Asian universities themselves and beyond (Chan 2012). Today, double and joint doctoral degrees are offered across the world (Kuder, Lemmens & Obst 2013), including South Africa.

JOINT DOCTORAL DEGREES IN SOUTH AFRICA

In South Africa the recent discourse around doctoral education has been dominated by the findings of the Academy of Science report entitled *The PhD study: An evidence-based study on how to meet the demands for high-level skills in an emerging economy* (ASSAf 2010). This report brought the country's performance in PhD production into sharp focus with the clear message that the country is in grave danger of not having the required human capital to compete in the knowledge economy. The South African National Development Plan (NDP) emphasised the importance of the doctorate as the key to unlocking a positive chain reaction in South African universities where an increase in the number of academics with PhDs would not only improve the quality of student outcomes, but would also mean that these better qualified academics could supervise more students and enhance the research productivity of the sector (Cloete, Mouton & Sheppard 2015). The NDP set optimistic targets for PhD enrolments and graduates, and while it acknowledged the lack of sufficiently qualified staff at universities to supervise these new enrolments, it identified three potential sources to enhance supervisory capacity (Cloete *et al* 2015):

- Local institutions with 'embedded research capacity' that should, in return for recognition of this niche, assist with supervision at other universities that only focus on teaching and learning;
- Partnerships with industry and commerce; and
- Partnerships and exchanges with international universities.

Although the offering of joint degrees is generally considered as one of the means to enhance and strengthen partnerships with international universities, there is no national policy in terms of which such arrangements are currently governed. In 2014 the Department of Higher Education and Training established a task team to develop a national policy framework for collaborative international offerings with the expectation that it would form part of a broader Policy Framework for the Internationalization of Higher Education in South Africa (Mabizela 2014). Offering joint degrees implies a level of engagement between academic collaborators that goes beyond exchange programmes and research collaboration. It implies that

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partner institutions are willing to accept joint responsibility for the supervision, examination and certification of the qualification of a doctoral student. It also implies that the candidate is someone whom a professor from another university would be willing to supervise.

JOINT DOCTORAL DEGREES AT STELLENBOSCH UNIVERSITY

In 2006 Stellenbosch University initiated a process to develop a policy on joint and double degrees in response to two imperatives. The first was the emigration of a few highly productive, senior academics. There was a desire to formally continue collaboration with these individuals, and the possibility to award joint degrees with these professors at their new institutions meant that Stellenbosch University would gain recognition for its academic input into joint projects while retaining postgraduate students in the process. This was and remains an attractive option, especially to a country like South Africa where skills are scarce and 'brain retention' is desirable. The second imperative was the institution's commitment to enter into an agreement with an important industrial partner who made their funding contingent upon Stellenbosch University enrolling PhD candidates jointly with a foreign institution. The aim of the project was to develop capacity among South African graduates by exposing them to the expertise at the foreign institution in a strategically important field.

Acting on the second imperative, Stellenbosch University started developing its own institutional policy on international joint degrees in 2007. Advice and guidance was sought from the Department of Higher Education and Training to ensure that even though existing national policy documents did not make specific provision for joint or double degrees, by contemplating these and engaging in partnerships that could result in such awards Stellenbosch University was not acting outside the spirit of the current regulations.

The Stellenbosch University Policy Regarding Joint Doctoral Degrees was approved in 2008 (Stellenbosch University 2008). This policy limited the scope of these activities to joint PhDs. Since then, the policy has undergone two revisions (2010 and 2012). The first revision was to also allow for joint and double master's degrees with foreign universities, and the 2012 revision was an effort to clarify definitions and to make provision for lessons learned from hands-on experiences gained during the first years of implementation.

In terms of the Stellenbosch University policy the outcome of a collaborative degree programme is a single qualification. Partner institutions cannot award the qualifications independently of one another. The fundamental difference from single degrees (awarded by only one institution) and joint degrees therefore lies in the

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shared nature of the jointly defined study programme leading to a joint degree, and therefore also the depth of the collaboration. Joint degrees can be seen as representing the deepest level of collaboration.

Upon reflection, an individual institution's experiences allow us to connect a number of threads. The policy grew out of an important international relationship, which made provision for the training of high-level skills that are needed in the South African economy, but it required institutional involvement from a foreign institution. The way forward was through joint degrees. In order to facilitate this outcome, an institutional policy was required and so one was put in place. At more or less the same time, the ASSAf report (2010) on the PhD in South Africa was released; it sent shockwaves through the higher education sector because it made clear the challenges that the system faced in terms of capacity and delivery. The question then arose as to what extent joint doctoral degrees afford the possibility of addressing these challenges and of developing high-level person power in a developing country that needs to compete in a global knowledge economy. In an attempt to find answers to these questions and learn from the experience of joint degrees at one university, the authors carried out the small-scale research project in which we sought to establish how joint degrees contribute to addressing the needs of the knowledge economy, but also how joint degrees contribute to the shaping of doctoral graduates and supervisors.

METHOD

Much of the research done on collaborative programmes (or 'joint degrees' as we refer to them in this chapter) has focused on international and national policies, qualification frameworks, quality assurance and accreditation, certification and financial arrangements (Kuder *et al* 2013). The fact that joint degrees are issued in the framework of partnerships between higher education institutions located in different countries and within different higher education systems gives rise to a host of other interesting matters.

Since 2009 Stellenbosch University has been offering joint degrees in partnership with a number of universities in other countries. Thus far no assessment was done of the rationale, challenges and benefits of these joint international doctoral programmes. In examining these programmes we used the framework of McAlpine and Norton (2006) to interpret the interaction and influence of multiple factors across the different contexts the role-players find themselves in at four levels: the individual context, the context of the academic department/discipline, the institutional contexts

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of each partner and the societal or systemic context that the role-players are located in (see Figure 19.1).

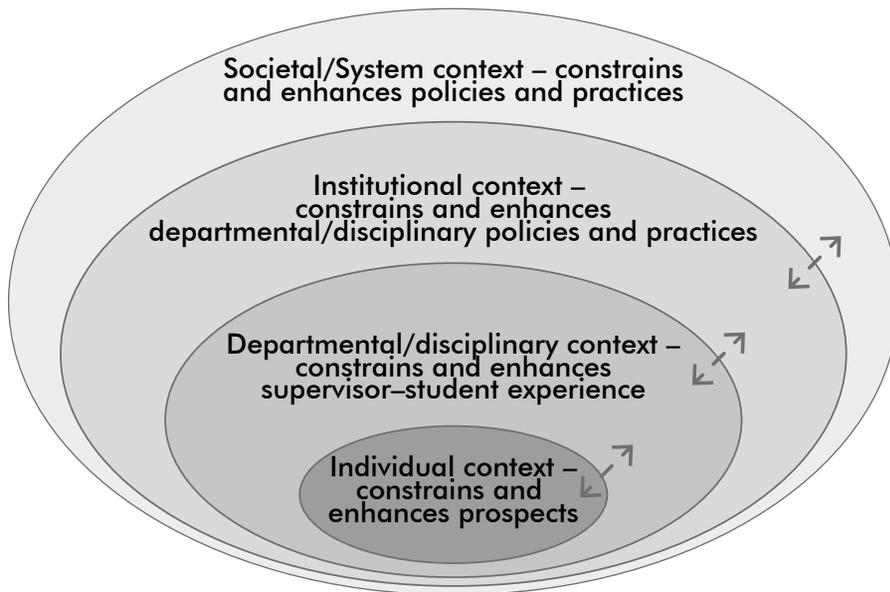


FIGURE 19.1 Nested contexts influencing doctoral retention and completion (Source: Adapted from McAlpine & Norton (2006))

Our goal was to determine and interpret the perceptions of all these role-players regarding the rationale, challenges and benefits of joint doctoral programmes offered by Stellenbosch University and its partner institutions.

Data-gathering consisted of document analysis and interviews with the institutional representatives of the partner institutions, with doctoral candidates enrolled for joint international degrees after 2008 and graduated by 2014, and with their supervisors. The document analysis included the Stellenbosch University Policy Regarding Joint and Double Degrees at Master’s and Doctoral Level with Foreign Universities (2008, as amended in 2010 and 2012) and the seven general framework agreements for joint degrees between Stellenbosch University and its partner institutions. The texts were appraised and themes were identified and classified in terms of the factors influencing doctoral experiences as suggested by McAlpine and Norton’s (2006) integrative framework.

At the time of the research seven PhD candidates had graduated under joint agreements between Stellenbosch University and partner institutions in Germany, the Netherlands, France, Belgium and Scotland. Our population consisted of 28 individuals (seven doctoral candidates, 14 supervisors and seven institutional

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representatives). We invited all of them to interviews and succeeded in interviewing five of the seven doctoral graduates, 10 supervisors (five each from Stellenbosch University and partner institutions) and two institutional representatives, for a total of 17 interviews. We used a semi-structured interview protocol, and the individual interviews were conducted face to face, telephonically or by e-mail. Interview participants shared interesting perspectives and provided us with rich data. While there was a high measure of congruence between the perspectives of the participants there were a few outliers that contributed to the richness of the data.

The interviews were transcribed and analysed, using the heuristic framework of McAlpine and Norton (2006), to identify and explain the influence and interaction of factors in joint doctoral programmes at the different levels. We were able to identify a total of 139 discrete statements on the rationale, challenges and benefits of international joint degrees from the interviews. We classified these into 30 aggregated statements, resulting in the following breakdown: rationale (12), challenges (13), benefits (15).

FINDINGS

First we report how the statements of the interviewees on the rationale, challenges and benefits of joint degrees are distributed across the adapted McAlpine and Norton model. In the second part we elaborate on the findings at each of the four levels individually. Due to word count restrictions, in this part we only highlight the most salient findings at the different levels.

The distribution of statements on the rationale, challenges and benefits of joint degrees across different levels

The expectation that joint degrees would increase the number of PhD graduates, and that the leveraging of more funding would consequently be enabled, were the only two items that were listed at all four levels as rationale for joint degrees (see Table 19.1). Nine of the statements on the rationale were indicated as relevant at departmental/disciplinary level and nine relevant at individual level, although they are not the same statements. Seven of the statements on the rationale were indicated as relevant at institutional level. There seems to be a significant convergence in the manner in which the rationale for joint doctoral degrees is motivated in terms of its relevance for institutions, departments and individual doctoral students.

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TABLE 19.1 Statements on the rationale for joint degrees

DISTRIBUTION OF STATEMENTS ON THE RATIONALE FOR JOINT DEGREES ACROSS LEVELS				
	Society / system	Institution	Department / discipline	Individual
To capitalise on existing institutional cooperation formalised in a framework agreement		X	X	X
To give effect to institutional strategies (internationalisation) and faculty / departmental initiatives		X	X	
To formalise existing scientific cooperation between individuals / research groups			X	X
To increase the number of PhD students	X	X	X	X
To gain confirmation of quality / standards		X	X	
To expand knowledge base and hold qualifications from different institutions		X	X	X
To leverage more research grants / funding opportunities	X	X	X	X
To share resources and expertise to benefit all parties		X	X	X
To work on a topic specifically related to the South African context				X
European degree important for employability of graduates				X
Successful candidate to serve as catalyst for more students to do joint degree			X	
To expand cultural horizons				X

As far as challenges are concerned, it transpired that individual doctoral students experienced the widest range of challenges of all role-players in joint international doctoral degrees, followed by challenges experienced at institutional and departmental levels (see Table 19.2). Three challenges were noted as relevant at all

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four levels, namely for the partners to come to an agreement, to leverage additional research funding, and to cover the extra expenses resulting from such a programme.

TABLE 19.2 Statements on the challenges related to joint degrees

DISTRIBUTION OF STATEMENTS ON THE CHALLENGES RELATED TO JOINT DEGREES ACROSS LEVELS				
	Society / system	Institution	Department / discipline	Individual
Commitment of key role-players		X	X	X
Regulations and rules		X	X	X
Additional work			X	X
Coming to an agreement	X	X	X	X
Sharing of resources and expertise		X	X	X
Leveraging more research grants / funding opportunities	X	X	X	X
Additional expenses	X	X	X	X
Uncertainty		X		X
Institutional culture				X
Issues related to co-supervision				X
Academic differences				X
Language and culture				X
Reputation		X		

Two benefits of joint doctoral degrees are relevant at all four levels, namely the scientific benefits and reputational gains emanating from such degrees. However, there is a significant convergence across all four levels of the statements on the benefits of joint degrees, as shown in Table 19.3.

TABLE 19.3 Statements on the benefits of joint degrees

DISTRIBUTION OF STATEMENTS ON THE BENEFITS OF JOINT DEGREES ACROSS LEVELS				
	Society / system	Institution	Department / discipline	Individual
Scientific benefits gained	X	X	X	X
Enhanced research cooperation		X	X	X
More PhDs enrolled	X	X	X	
Visibility of science and researcher	X		X	
Standards and quality confirmed		X	X	X
Reputation enhanced	X	X	X	X
More funding accessed		X	X	X
Mutual learning		X	X	X
Co-supervision			X	X

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DISTRIBUTION OF STATEMENTS ON THE BENEFITS OF JOINT DEGREES ACROSS LEVELS				
	Society / system	Institution	Department / discipline	Individual
Employability enhanced	X		X	X
Typical benefits of study abroad		X	X	X
System level knowledge gained	X			
New research opportunities			X	
Success of candidate served as catalyst for more students to do this		X		
Complementarity of supervisors				X

Rationale, challenges and benefits of joint degrees at systemic level

Stellenbosch University’s policy came to be in the absence of a national policy on joint and double degrees. When the institutional policy was formulated, there were no national guidelines available to give structure to the policy, so examples were sought from elsewhere in the world. In the policy, reference is made to the expectation that when national regulations are eventually developed, they will specify how joint degrees are to be certified. In the absence of such regulations, however, Stellenbosch University went ahead and defined how it would certify joint degrees. The document analysis highlighted a number of potentially challenging issues.

In some of the inter-institutional agreements, national acts, decrees or government decisions were noted that constrain the offering and awarding of joint doctoral degrees. Intellectual property law is one such consideration. Legislation governing intellectual property differs in different countries and the ownership and possible commercialisation of research results is a source of potential conflict should the ownership of the research results emerging from joint agreements be contested.

The notion of a ‘public defence’ of a doctoral thesis is another difference. The public defence of a doctoral thesis, or *viva*, is common practice in Europe. A requirement of some of the partner countries is that there may only be one such defence and it has to take place in that particular country. Other systems are more flexible and allow it to take place at either partner institution and both parties then agree to recognise the results of the single defence.

In the document analysis we also found that neither the Stellenbosch University institutional policy on joint and double degrees nor the inter-institutional agreements made explicit mention of the benefit of joint degrees from a societal or systemic point of view – the focus was on the benefits for the institution.

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These perspectives from the document analysis need to be juxtaposed with the perspectives of the interview participants, consisting of international supervisors (IntSup), South African supervisors (SASup), doctoral students (Stu) and institutional representatives (IR). Some of these interviewees pointed out both challenges and benefits that could have an impact at the level of the respective national (higher education) systems.

The absence of a clear national legal framework for joint and double degrees in South Africa and in partner countries was identified as a challenge. One institutional representative referred to joint doctorates as legally permissible in her country, but at the same time she highlighted challenges such as difficulties for partner institutions to meet the requirements for racial diversity of students in terms of the South African transformation agenda.

Another challenge at the systemic level that was pointed out was the possibility of a reduced state subsidy for joint doctoral degrees that may influence the willingness of institutions to participate in such programmes in future. Furthermore, even though joint degree programmes play an important role in driving the internationalisation agenda of participating institutions, “the popularity and use of university ranking lists at European universities ... might set limits to the choice of institutional partners in South Africa” (IR1). Partner institutions are thus clearly taking into account potential reputational risks attached to entering into joint doctoral programmes with universities in developing countries. One of the participants quite frankly stated: “The joint degree from Stellenbosch and XXX is, at least for German students, more valuable than a purely South African degree” (IntSup3).

The value added by joint degrees at the national or systemic level was somewhat overshadowed by the challenges and frustrations experienced by institutional representatives working in very different higher education systems. This is to be expected, because these officials are responsible for drawing up the agreements and they are the best informed about the (potential) obstacles in the way of joint international degrees. On the other hand, the doctoral students and their supervisors were more positive and pointed out potential benefits of joint degrees for national science systems. Some of these will now be discussed.

Pooling of and access to resources

Benefits resulting from the pooling of resources, particularly for South Africa, and by implication for the African continent, were highlighted by more than one participant. To quote one: “In particular for the African continent with its limited academic and financial resources this type of collaboration is an attractive way to increase its

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involvement in cutting-edge research, which ultimately benefits the entire society” (Stu1). This was reiterated by one of the South African supervisors: “The facilities at the other university ... made the scope of the study bigger ... The biggest benefit is that people pool their resources” (SASup3). The pooling of resources and expertise led to “enhanced value” (SASup5), that is, research of a higher quality than what a study at a single institution would have produced. This was eloquently described by one of the students: “In the end we could achieve some truly remarkable results that had a large impact on international scale and that demonstrated the true potential of our cooperation” (Stu1).

The benefits accruing from the pooling of resources are not limited to South African universities. One of the international supervisors explained that “such joint programmes also provide a wider competence and technology basis for the research work and improve by this way the efficiency and quality of a PhD programme” (IntSup2). A similar sentiment was expressed by a colleague from another partner university: “It broadens the scope of the academic or disciplinary expertise. It bundles the expertise of the two partners. This is advantageous for ... all the scientists involved” (IntSup4). Access to more funding opportunities was pointed out by another international supervisor who believed that joint degrees make it “easier to leverage research support [and] grants through international agreements, [and] allows [one] to make things that would otherwise not be possible” (IntSup5).

Expanding PhD student numbers

Referring to the NDP imperative for increased PhD production discussed above, our study found that entering into a joint degree was in some cases motivated by the need to “enrol a greater number of PhD students” (SASup4). More than one South African supervisor was convinced that joint degrees contributed to increasing numbers of PhD students: “So the possibility of a joint degree meant that I got a PhD student which [I] otherwise would not have had” (SASup1). This view was supported by another South African supervisor: “The main benefit is being able to tap into a bigger pool of potential PhD candidates” (SASup4). Enrolling larger numbers of PhD students is also made possible by the access of South African universities to more funding and more supervision capacity – this is particularly important in the light of the relatively low percentage of South African academics with doctorates, which in 2012 stood at 39% (DHET, cited in Cloete *et al* 2015:113). A successful first joint degree collaboration certainly created opportunities for more students to subsequently follow this route. One of the students commented: “I was the first one from XXX University in France to try to do a joint degree with Stellenbosch ... And now we are two more French students that are doing the same thing” (Stu2).

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A supervisor added: "It has worked exceptionally well and has expanded from one student ... to five" (SASup4).

Further spin-offs and lasting collaboration

Another benefit for the South African science system lies in the spin-offs from joint degrees into further collaborative projects, explicated as follows by one South African supervisor: "So ... the working on the joint doctoral project is leading to further projects and further cooperation ... joint outputs and new initiatives that would strengthen the partnership but that also goes beyond the partnership at the broader level" (SASup5). This was confirmed by other participants: "These relationships are lasting and in this way we are securing bonds that are [otherwise] difficult to do" (SASup3), and "... the joint degree had the effect of cementing the cooperation" (SASup5).

The discussion above provides evidence of the value added by joint degrees to the science systems of both countries where universities are engaged in joint degrees. Similarly, ample evidence of the benefits of the joint degree experience for both supervisors and doctoral candidates was found.

Rationale, challenges and benefits of joint degrees at the institutional level

The Stellenbosch University Policy Regarding Joint Doctoral Degrees (Stellenbosch University 2008) focuses on the institutional level of organisation. As the policy prescribes the conditions for setting up institutional agreements for joint degrees, it does not differentiate to a lower level of organisation. Close reading of the text suggests that Stellenbosch University is attempting to restrict the number of agreements by setting strict criteria for selecting partners.

It is clear from the different agreements that were analysed that Stellenbosch University's own organisational structure and its uniformity of rules and regulations are not replicated by its partner institutions.

The composition of the joint doctoral examination committee differs quite considerably amongst the agreements. Because balanced representation is generally sought, the size of the committee is commonly large (eight people in one case).

The research output in the form of the PhD thesis, how it is to be reported by the institutions and how the degree certificate needs to acknowledge both institutions are common features of the institutional agreements.

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The policy document thus provides a useful framework of items that all subsequent agreements should address, and describes the institutional route that such agreements would have to follow for approval.

From the interviews, a number of challenges at an institutional level were identified. Frustrations experienced by both supervisors and students often arose from differences in institutional rules, requirements and arrangements for doctoral programmes. An institutional representative noted: "It brings forward the huge differences of institutional regulations; some can be overcome and some will always be a point on the agenda" (IR2). In the case of Stellenbosch University there was very little institutional experience with regard to joint degrees and no similar prior agreements were in place, thus putting together workable agreements between the partner universities proved to be challenging and time-consuming. Although it has been mostly the institutional representatives and supervisors who were involved in setting up the agreements, the students were not unaffected: "... dealing with two administrations and a variety of regulations as an 'unusual case' takes a lot of patience, communication and persuasion skills, but in the end this is a small price to pay for the benefits connected to the joint degree" (Stu1).

The above-mentioned challenges were exacerbated by a lack of understanding and experience of administrative staff of the nature of joint degrees, as well as by differences in organisational structures (eg the office where the responsibility for the administration and support of joint degrees is located). One of the supervisors pointed out that "[i]f two institutions enter into a tight institutional-level agreement with many students involved on a continuous basis and if both institutions change and synchronise their rules, it may be possible to solve this problem. However, that seems not to be feasible" (IntSup4).

On the other hand, various benefits for institutions involved in joint degrees were highlighted by the participants. More than one participant mentioned the strengthening of inter-institutional links through the joint programmes. One participant commented: "Joint doctoral programmes tend to reinforce existing research collaborations and also to open up new research paths" (IR1). From the South African side the joint degree experience certainly served as a 'quality check', with good results providing affirmation of the status of Stellenbosch University as a good university: "It provided a reassurance for the quality of the work. It was good to know that it also meets the requirements of a university in another country" (SASup2).

Rationale, challenges and benefits of joint degrees at the departmental/ disciplinary level

The delegation of certain responsibilities, like financial responsibilities, to faculty/ discipline/departmental level is common to all the agreements. As can be expected, most of the challenges and benefits were also experienced in the departmental context and at the level of the individual student or supervisor.

The synchronisation of the programmes of both supervisors and students proved to be somewhat challenging because of the differences in the academic calendar between South African and European universities. One of the supervisors commented: "Also the difference in academic calendars sometimes proposes challenges to find moments where visits can be optimally planned, since for our type of research, physical sitting together to interact with two or three partners is necessary. Due to these practicalities, it was not always possible to physically meet as much as we wanted" (InsSup4).

The absence of successful examples from which departments could learn was certainly a challenge at Stellenbosch University, where one of the supervisors said: "Since we were one of the first departments entering into such an agreement, we felt like pioneers" (SASup4). This lack of experience led to, for example, problems in the examination process due to neither of the supervisors taking the lead for planning the process and taking care of the administrative requirements. One of the supervisors commented: "I think the issue of overall responsibility for the project as a whole is critical" (SASup5). The importance of detailed agreements to guide the joint endeavour was also emphasised repeatedly: "It would have been better if more comprehensive and more specific information on the structure of the joint endeavour as a whole, and of all the requirements on both sides, is made available upfront to a candidate when he/she enrolls for a joint degree" (Stu4).

Several of the benefits experienced by supervisors individually also indirectly benefited their academic departments. Aspects that were highlighted included the pooling of resources that broadens the scope of research, and the broadening of the academic experience of supervisors because of the time spent at the partner institution. "It broadens the scope of the academic/disciplinary expertise. It bundles the expertise of the two partners. This is advantageous for small departments and for all the scientists involved" (IntSup4). This not only pertained to disciplinary work, but also to supervisory practices. One of the international supervisors noted one of the benefits being "changes in supervisory practices because of discussing with XXX (South African supervisor) how to supervise" (IntSup1).

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Quality benefits were also important at the departmental level: “It enhanced levels of responsibility, the stakes were higher for all involved – we did not want to be ashamed” (SASup2). Not only did the joint degrees provide reassurance of the quality of work done in the department, but they also enhanced the levels of responsibility felt towards supervision and towards the joint project.

More tangible benefits included financial benefits because of sharing funding requirements between two departments with the partner university picking up some of the costs, being able to tap into a bigger pool of potential PhD candidates, the wider dissemination of the thesis, and the possibility of more publications from the thesis.

Rationale, challenges and benefits of joint degrees at the individual (supervisors and candidates) level

Mutual trust – a confounding issue

Not all supervisors and doctoral students found the joint degree experience to be a positive one. Supervisors highlighted issues that arose around institutional actors who did not follow through on promises made and a lack of trust between the partners. One South African supervisor described this situation as follows: “Some academics play their cards very close to their chest and it takes a long time to break down barriers” (SASup3). This could obviously have a negative effect on students – one student mentioned that “the goal posts kept moving” (Stu5) and another student commented: “You cannot institutionalise trust” (Stu3). Trust issues seemed in part to be underpinned by an absence of a shared world-view and common assumptions about knowledge production at doctoral level, pointing to the importance of choosing the appropriate partner: “It is not trivial to have the right person for the exchange in terms of both the scientific and social culture” (SASup3). This point of view was confirmed by one of the institutional representatives:

The challenge is also the people whose commitment is essential for the success and synergies for continuing projects. They have the chance to bring it to a success but, honestly, one also has to say that in this individual perspective they have also the chance to ruin [it] (IR2).

Yet the value added by joint degrees to both supervisors and students far outweighed the frustrations and challenges brought about by the collaboration.

Expanding supervisors’ horizons

Supervisors identified benefits in the form of broadening of their academic and research experience: “... having to work also (regarding certain aspects of the dissertation)

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in a field outside my own field of expertise was challenging and stimulating and I enjoyed the multi-disciplinary perspective" (SASup1). Another supervisor added: "It was immensely beneficial to my own scholarship" (SASup5). In addition, they benefited from exposure to a different academic culture: "It was beneficial for me to see how the French work" (SASup1) as well as to different supervisory practices – one supervisor described this as "the scientification of a self-observation" (IntSup 1), whereas another acknowledged: "I gained from the experience of the way that they handle the PhD" (SASup3).

Students' international exposure as preparation for global citizenship

Both supervisors and students highlighted a number of ways in which the joint degree experience benefited the students, not the least of which is the international recognition of the PhD study and the student: "He is a man of the world now. He made a mark here and in Germany and in England" (SASup3). Participants also noted that the joint degree experience gave doctoral students opportunities to build larger academic networks and establish more contacts.

Some supervisors believed that prestige was added to the qualification due to the involvement of a European partner: "Having a university from the northern hemisphere attached to a qualification contributes to a stronger CV for the student. It is perceived as an indication of quality" (SASup2). But the majority were in agreement that the real benefit lies in the student "working in two different universities and two different science systems. This helps them see the strengths and weaknesses of both systems in a more realistic way" (SASup4). One of the students explained this as follows:

I had access to the best of both academic worlds: the infrastructure and skill sets available in both institutions to conduct experiments; expertise of two experienced supervisors as well as staff and students at both institutions who provided multiple points of view on the same research area ... I learned to appreciate the cultural differences in approach and solution of research questions as well as the different conditions and circumstances research is conducted in the two countries (Stu1).

Another student added:

I think it's going to be really valuable because you obviously know how to deal with different people in two different systems already. When you do your PhD at only one place you usually have only one point of view ... So you come across different people more often and in your research it's highly valuable because you come across different points of view (Stu2).

Both supervisors and students were unequivocal in their conviction that not only the academic experience contributed to the students' development, but also the

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entire experience of living, working and studying in another country. One supervisor commented that “international experience is of growing importance for a scientific career” (IntSup2). One benefit mentioned was acquiring another language: “Knowing ... and speaking different languages is a very important characteristic” (IntSup1). Another supervisor added that “the cultures in general and the ways of living may differ considerably. The management of his situation prepares the PhD student for future challenges which typically are inherent in business, management, leadership and/or ‘political’ tasks” (IntSup3).

Many of the above-mentioned gains point to the development of aspects of global citizenship in doctoral candidates. How joint degrees contribute to the development of global citizenship is implicit in the words of one of the students:

And I think if we look at the future and how the world is becoming smaller and how almost every country is becoming more diversified I really think that this makes a contribution to preparing people for the knowledge society and for moving from one country to another in terms of their jobs and so on. So I’m very excited about this (Stu2).

Employability of graduates

Supervisors and students agreed that joint degrees add additional value to the preparation of graduates for a variety of employment opportunities in the knowledge society. This was confirmed by the evidence of job offers made to graduates upon graduation. One supervisor commented as follows:

It is sometimes said to foreign doctoral students studying in the USA that they get a ‘BA’ in addition to their PhD, BA meaning in this context ‘been to America’. This student had a job before he commenced with the joint PhD. On completion of his PhD it took him only one week to get a job. His international experience was definitely attractive to employers (SASup1).

Another student reported that in his job interviews at different multinational companies in Europe, the employers reacted favourably when they noted that he had a joint South African and European qualification. It was considered as evidence that he had acquired a broad perspective and personal experience of working beyond his own university and country, and that he can function effectively in international contexts. A supervisor commented: “It helped the candidate to be more mature and independent and this what employers want” (IntSup1).

The transnational nature of science production in a knowledge society is evident from the following remarks by one of the students: “There are many wider benefits of joint degrees to institutions, countries, academia and society that deserve to be

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recognised. Modern research is highly collaborative and reaches across the borders of disciplines, institutions, and countries" (Stu1).

CONCLUSION

Our study confirmed the observations of Bownes and her colleagues at the University of Edinburgh (Bownes, Mather-L'Huillier & Watson 2010) on the benefits of joint degrees at their university where they have had longer and more extensive experience of such offerings. In the South African context joint degrees are also seen as a mechanism for the broadening of supervisory capacity and the creation of high-level capacity and skills. At institutional level such collaborations are regarded as effective mechanisms for stimulating international and inter-institutional collaboration and academic mobility. These programmes have the potential to attract a diverse, highly committed student population of high quality to a particular institution. For students, advantages of such programmes include (a) access to strong research teams and high profile supervisors at the partner university, (b) access to research funding and facilities not available at the home university (eg the Square Kilometre Array Telescope in South Africa or the non-digital holdings of major libraries), (c) opportunities to enhance their learning experience by participating in an international programme, and (d) opportunities to experience a different intellectual and institutional tradition in a different country, which include all the advantages of studying abroad (such as experience of cultural diversity, opportunities to learn a new language, and living in another country).

It is notable that of all role-players involved in joint degrees, students are reported to experience the broadest range of challenges. This should perhaps serve as a signal for institutions and departments to limit the number of students admitted to joint degrees and to take special care to provide the necessary additional support to these students, including additional financial support. However, such a limitation can run counter to the widespread expectation that joint degrees enhance supervisor capacity and increase the number of PhD graduates. It is therefore perhaps prudent to temper these expectations. Notwithstanding the numerous challenges experienced at different levels by the different role-players – challenges brought about by administrative, personal and philosophical differences – the prevailing sentiment among all the role players involved in this study was positive and one of enthusiasm.

Although a direct comparison was not made, the study highlighted inherent differences associated with this new form of doctoral training as opposed to the typical experience a student would have as a single institution enrolment with a main supervisor and possibly a co-supervisor. Many of the challenges and benefits

would be similar but our research demonstrated that there are various benefits accruing from joint degrees that go beyond the benefits of the standard forms of joint supervision.

Involving two (or more) institutions across national borders and multiple supervisors in doctoral education clearly added value for students and supervisors. There are also indications that joint doctoral degrees are valuable for the institutions involved and for national science systems, particularly in a developing country like South Africa for whom it is vital to increase and strengthen the capacity and quality of doctoral education in order to play its role effectively in the knowledge society. Stellenbosch University and South African universities on the whole have not yet delivered substantial numbers of joint degree graduates. In fact, little is known about the extent of joint degrees in the South African system. It would be useful to repeat a similar exercise to the one in this study involving a larger cohort in the near future to further enrich our understanding.

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