Developing a PhD Training Programme in Innovation and Development

A checklist
# TABLE OF CONTENTS

Why set up an African PhD programme in Innovation and Development .............................................. 3
Setting up a PhD programme in Innovation and Development ............................................................................ 5
Running a PhD programme in Innovation and Development? ........................................................................... 8
Learning and modifying a PhD programme in Innovation and Development ................................................. 11
Further inspiration and reading .......................................................................................................................... 12
Africa since the late 2000s has some of the highest consistent economic growth rates in the world. Hence, in some respects its future is bright. However, there are many who would argue that this growth may be unsustainable without significant investments in the ‘knowledge economy’ (Jessop, 2007; Cassells, 1991); in developing human capital (through training) and the knowledge base (through building up research and development capabilities).\(^1\) Higher education is a key player in creating “sustainable human development” through its ability to build human capital and the knowledge base of African countries as well as ensuring the dissemination and use of that knowledge and its maintenance, storage and transmission to future generations (APLU, 2014).

However, PhD training programmes are especially important in the higher education system because they are seen as “key actors behind the creation of knowledge-based economic growth” (Aureiöl et al, 2010, p.13). Well-developed and well implemented PhD programmes hold the potential for educating students and creating researchers that have the ability to conduct highly relevant research and development work that fits the needs of industry and society.

Unfortunately, especially in many African universities, the ability of PhD programmes to result in relevant research and development that is taken up by industry or enables the creation of spin out companies is limited. One study argues this is because there are insufficient linkages between universities and industry and that these linkages, even where they exist, are highly contextualised (Kruss et al, 2015).

At the same time, and related to this, there is growing recognition of the importance of innovation for economic growth (Lundvall and Lema, 2016; Boekema et al, 2000; Freeman, 2002). Innovation — the introduction of a new product or process into a new environment — is, at times, the result of the research and development (R&D) work that takes place in universities and by PhD graduates after they have finished in a variety of different organisations. But often this isn’t ‘new to the world’ inventions that are commercialised but the result of adaptation of an existing product or process to a new context. This ‘incremental innovation’ is the most common form of innovation that takes place in many developing countries (OECD, 2012); something that also holds true for Africa (Fu et al, 2014). At the same time, there is increasing recognition that innovation doesn’t only take place in the form of university-industry relations but at the grassroots (Smith et al, 2014; Gupta, 2013) or for social development (West and Lakhani, 2008) – in communities, for communities.

Thus while PhD programmes are important drivers for much of Africa’s development through the promotion of incremental innovation, one particular PhD programme is essential for enabling better understanding of the complex forms in which innovation takes place and how other PhD programmes and innovation activities in the community can be promoted and made most relevant for the economic and social development of the country. This is a PhD in innovation and development.

\textbf{A PhD in innovation and development trains researchers to understand how innovation takes place and what impact it has on sustainable development efforts;} it trains the next generation of policy makers and practitioners who will go on to promote inclusive innovation – innovation efforts, be they R&D related or grassroots focused – that are relevant for their communities.

Unfortunately, PhD training of any kind is not strong in any country in Africa when compared to other parts of the world. That said, there are a few universities where progress is slowly being made. One study that has been measuring change in the PhD training area in African universities is the HERA project (see \url{http://www.chet.org.za/programmes/herana-iii}). The latest report (from the second round) found (Cloete et al, 2015) that in eight ‘flagship’ universities in Sub-Saharan Africa only 2,614 students enrolled in a PhD in 2011 and 1,226 of these were at University of Cape Town in South Africa alone. In addition, it found that completion rates were much worse. In 2011 only 367 students completed their PhDs. Again, University of Cape Town was responsible for the great majority of students who completed (163), while University of Nairobi in Kenya came second with 56 and Makarere University in Uganda came third with 36.

\footnote{There are obviously many other factors at play too e.g. without peace and security, good governance and a range of other issues economic growth and prosperity would not possible either}
In terms of PhDs focused on the subject area of ‘innovation and development’, there are three different formats that such a PhD can take:

1. A dedicated innovation and development PhD programme hosted in a social science faculty that allows for cross-disciplinary study of the relationship between innovation and developmental processes;
2. PhD programmes in the social sciences with some level of emphasis on innovation and development e.g. PhD programmes in international development or economics
3. PhD programmes in other subject areas (e.g. agriculture, engineering) where elements of a social science understanding of innovation and development are included.

There are currently more programmes in categories 2 and 3 above with few – if any – in category 1 in Africa. Specifically, an AfricaLics survey (AfricaLics, 2016a) found that, the number of PhD programmes that are dedicated to the study of the interrelationship between innovation and development in Africa are very few. The study found that there were six programmes in traditional disciplinary areas which had courses that focused on the relationship between innovation and development:

(a) PhD program in Development Studies (South Africa)
(b) PhD program in Agricultural Extension and Rural Development (Nigeria)
(c) PhD program in Technology Transfer and Sustainable Development (Nigeria)
(d) PhD program in Innovation Studies (Tanzania)
(e) PhD program in Industrial Engineering and Innovation (Uganda)
(f) PhD program in Technological Innovation (Uganda and Sweden)

While the list may not be comprehensive, it is still indicative of the fact that there are only a limited number of PhD programmes focussing on innovation and development issues.

In addition, of those surveyed 48% (n=127) who self-identified as an innovation and development researcher had attained a PhD and of these 109 were African nationals. Of these 109, 33 had received their PhDs between 2014 and 2016. Of these only 28% where female. The majority of these PhD holders received their PhD from African universities and in the social sciences (with economics being the largest social science discipline represented).

There is a need for all three categories of innovation and development related PhDs listed above. However, given the currently low number of PhD programmes in Innovation and Development at Africa universities, there should be ample room for developing PhD programmes that are dedicated to understanding the processes of innovation and development and their interactions i.e. dedicated PhD programmes in ‘innovation and development’. It is this dedicated type of programme that this paper is concerned with.

This is not to say there shouldn’t be PhD programmes in the social sciences or in other schools that have a focus in one way or another on one or more elements of the interlinkages between innovation and development. In fact, such programmes should be encouraged within different schools and faculties to ensure greater awareness of the interrelationship between innovation activities and developmental outcomes. In all cases however, these are developed bearing in mind the need to make sure that the candidates produced are able to help solving societal problems, receive quality education and have skills that are relevant for their future career and employability.

The AfricaLics Research Capacity Building project, with funding from the Swedish International Development Agency (Sida), has been engaged since 2013 with African universities to encourage the development of dedicated programmes at PhD level focused on ‘innovation and development’ to fill the void that exists.

What is presented below is a set of checklists to assist these – and other – African universities in moving forward with development of their PhD programmes in the field of Innovation and Development. It is not an exhaustive checklist but aims to outline the core or essential issues and questions that a university department or faculty should ask itself as it embarks on developing a PhD training programme focusing on the interrelationships between innovation processes and economic and social development.
SETTING UP A PHD PROGRAMME IN INNOVATION AND DEVELOPMENT

PROGRAMME RELEVANCE

One reason to develop any PhD programme is to address a problem. What problem it will address is however context specific. As outlined above, PhD programmes are instrumental in ensuring transfer of knowledge and innovation activities for a country. The level at which this takes place (i.e. for communities in which the university is situated or to address wider issues affecting the nation as a whole) will be decided partly by the mandate of the implementing university itself (including e.g. whether its charter emphasizes working on community issues) as well as by national regulations. Perhaps more than most PhD programmes, a PhD programme in innovation and development should inherently focus on solving problems. Currently several PhD programmes in other parts of the world (c.f. UNU-MERIT or Sussex University) focus their PhD programme around global development issues including the achievement of the UN Sustainable Development Goals. Whichever direction is taken requires that the programme of training is tailored to address the problems being focused on and enables students to focus their research on elements of the problem(s).

A second consideration here is that of employability and skills building. Internationally there is increasing recognition of the difficulty of ensuring PhD students finish their studies ready for employment: whether that’s in academia, industry or the public sector. Most studies of employability focus on undergraduate employability. However one study in South Africa of PhD graduates found that only two of the country’s top 200 companies (all with over 10,000 employees) had more than three PhD holders in post. A key requirement is more university-industry linkages and skills that are central to the private sector (Friesenhahn, 2014). In some parts of the world, universities and national education authorities have introduced ‘research skills frameworks’ for PhD students; a core set of transferable skills from English to ‘wellbeing’ (how to contribute to society) that all students must complete before they can graduate (Matas, 2012) to enhance employability. One example has been developed by Vitae in the UK and is widely used in UK universities.

PROGRAMME DESIGN

Level of specialisation

An ‘Innovation and Development’ PhD programme is by its very nature cross-disciplinary as it requires the study of both innovation and development. As such it can be housed in any number of different Faculties, Schools or Departments and not just in a School of Social Sciences. We have already outlined above how elements of innovation and development research and training are conducted in PhD programmes that are based in a diverse array of disciplinary subject areas from Economics to Agriculture to Engineering.

The location of the PhD programme in a specific faculty or school will, however, naturally also influence the PhD programme giving it a special ‘flavour’ depending on whether it is located in a school or faculty of social science, agriculture or engineering. We would argue that a dedicated PhD focusing on the interrelationships between innovation and development should preferably be housed in a social sciences school in order to ensure students have the highest number of relevant researchers around them.

Once the location of the programme has been agreed, it is then necessary to decide the extent to which the PhD programme will only focus on certain areas of research (by sector e.g. health, energy, agriculture etc. or by topic e.g. gender, inclusion, politics or engineering and design, business development, human resources). This choice

---

2 http://www.702.co.za/articles/3198/why-phd-penetration-in-corporate-sa-is-so-low
3 https://www.vitae.ac.uk/researchers-professional-development/about-the-vitae-researcher-development-framework. See also the Irish Universities Association statement on PhD skills development: http://www.iua.ie/publication/view/irish-universities-phd-graduates-skills/
4 Different universities are organised in different ways and use these terms – school, faculty and department – in different ways. For the rest of this report we use the terms interchangeably but always are referring to the main organisational unit in which a PhD programme is housed.
can be determined by the areas of focus by a university department and/or by the areas of interest of the faculty who are eligible to supervise PhD students. Leaving the options open so students can apply with any topic provides the greatest level of inclusivity potential, but then often requires a department or faculty having to ‘shop around’ for expertise who might be able to supervise the interested student and might also make it difficult to ensure high quality in the PhD programme. That said, in many places – also outside Africa – this leads to collaboration with researchers from other faculties/departments or other universities. Such situations enable greater choice of expertise and offers opportunities for collaboration with universities abroad.

**Duration and model of PhD training**

For many years the design of a PhD training programme was focused either on the writing of a ‘thesis’, a dissertation outlining the findings of an original research project, or on a blend of coursework and thesis. In recent years, there has been significant innovation in the PhD field (Matas, 2012). In the 1960s, the UK introduced the ‘PhD by publication’, whereby a student writes one or more papers which are published in academic journals and these are then examined along with an overarching essay that critically reviews the published paper(s). In the 1990s a series of additional models were introduced (Matas, 2012) which aimed to enable a wider range of individuals the opportunity of studying a PhD. These include:

- A professional doctorate made up of coursework and a research project. This is aimed at those who wish to study in, and research on, their work
- A practice based doctorate which requires the creation of an artistic output and a supporting written document and targets artists and the creative community.
- A ‘new route PhD’ for the international market which includes research training and coursework.

The type of PhD that is promoted for a PhD in Innovation and Development is dependent on each individual university’s or national rules and levels of flexibility in curriculum development.

Each of the different PhD training models outlined above focuses to different extents on coursework and personal study by the student which in turn influences the type and level of supervision and examination that is required. In some cases the first year of a PhD is dedicated to initial skills and content training and can be made up of a series of taught courses. Other universities prefer to enable students to spread their training across the whole study period. There are pros and cons to each approach. On the one hand dedicated up-front training enables a core set of ‘essential skills’ to be learnt which is useful in situations where students don’t necessarily have a grounding in the subject area. However, on the other hand, providing more flexibility enables students to take training courses that are specifically focused on their topic area and/or specialized research methods training that they won’t necessarily be aware of needing at the beginning of their studies. Beyond the rules governing PhD training in that institution, deciding between these ‘trade-offs’ is therefore also determined in part by the education ‘pipeline’ – see section ‘Student type’ below.

Irrespective of what type of PhD model is chosen, a main aim of the process is for the PhD student to gradually develop his or her skills and independence in planning and conducting research as well as analyzing and writing up data and articles/reports. This is what is often referred to as the ‘journey’ from being a good course-taker to becoming an independent researcher (Lovitts, 2005).

The design or model of the PhD and what level of training is given as part of that model will also determine the length of the degree programme that is needed. PhDs are usually between 3 – 4 years in length when studied full time or 6 – 8 years when studied part time. Increasingly universities are putting caps on the number of years within which a student has to finish a PhD.

In the context of a PhD in Innovation and Development at an African University, a three year degree with dedicated time at various points in the programme for training would be most appropriate. This is because, many of the students will have come from an environment where they have very little knowledge of the subject area due to the predominance of traditional disciplinary subjects and/or haven’t received a basic grounding through a relevant Master’s degree (such as the innovation and development Masters module or programme proposed by AfricaLics and available [here](#)). See also Section ‘Student type’ below.

---

**Supervision**
There are no subject specific supervision format recommendations required specifically for those studying in the subject of ‘Innovation and Development’. Supervision – as with all PhDs – needs to occur regularly and be a critical but constructive discussion between a supervisor/supervision team and the student. There are many good references on how to be a good supervisor or how to manage the supervisor-student relationship or how best to work in a team supervision manner. AfricaLics has developed a PhD supervision good practice pamphlet which provides ideas on how to ensure quality PhD supervision – and includes advice both to supervisors and students, including of where to get additional support. This is available here.

That said, a PhD in Innovation and Development programme requires a good number of supervisors who have sufficient knowledge of the relevant subject areas. This links to the earlier discussion on the degree of specialization that a programme is going to have. In areas where there are high levels of specialization (perhaps due to the small number of supervisors that are available), a team supervision approach might work more effectively than a more individualized approach. In such a situation, a couple of supervisors would supervise 3-4 students together using joint supervision meetings especially in the first couple of years of the training programme. In such situations, the students then support each other as well as getting support from their supervisors. It also means that more generic feedback and training can be delivered more efficiently than when individualized supervision schedules arranged.

Additional ways of improving supervision in newly established PhD programmes in Innovation and Development could be teaming up with supervisors from other universities either inside or outside Africa with knowledge in the field; sending PhD students for study visits or participation in PhD academies focused on innovation and development e.g. through the Globelics and AfricaLics /other regional LIC network activities and; participating in PhD supervision training or exchange of experience in this matter during AfricaLics conferences.

Examination

The format that an examination in a PhD in Innovation and Development will take will be determined by the rules that govern a university. That said, all exams require examiners and in the Innovation and Development field, finding suitable examiners, especially from the African continent, will prove difficult initially as the research field is still relatively in its infancy. Engagement with the AfricaLics network provides one avenue for identifying potential examiners from across the continent (or from abroad) and from various different disciplinary or sectoral foci areas. Encouraging universities to make the most of improving internet access and engagement with international and regional research networks in the field will also provide increased access to subject specialists outside of national boundaries.

Cross-disciplinarity

As noted earlier, Innovation and Development as a subject area, by its very nature is a cross-disciplinary field. We have already made mention of the difficulties of finding supervisors in this field in Africa because of the traditional dominance of disciplinary subjects. However, it is important to make a specific additional comment on the importance of cross-disciplinarity here.

This subject area of Innovation and Development requires supervisors who have knowledge of more than one disciplinary field and students who are willing to cross disciplinary boundaries. That said, it is essentially a social science subject area but this does not mean it is not relevant for an engineer, doctor or scientist; in fact, in many ways completely the opposite! The subject area of Innovation and Development is dedicated to breaking down disciplinary silos because this is the only way innovative activity will meet the needs of those that need it most. Such a subject area however requires supervisors and students who are open-minded and willing to ‘learn other languages’. Scientists and engineers must be willing to consider the value of subjects like economics and politics while social scientists must be willing to spend time getting to know the engineering or physics or other non-social science areas as relevant to their PhD studies.

---

5 A related field of science studies (looking at expertise) recognises that to best be able to study scientists, social scientists must learn the language of scientists and become competent, if not fluent in it (Collins and Evans, 2007). The same goes for those studying innovation and development.
STUDENT TYPE

There are two issues that are necessary to consider with regards the type of student that would be both eligible and interested in pursuing a PhD in Innovation and Development and to whom the PhD is aimed. First, there is the issue of the student or education pipeline. As noted elsewhere by AfricaLics in the 2016 Baseline study, there are few Masters degrees that are wholly focused on the subject of the relationship between innovative activity and development in African universities. As a result, there are few – if any – natural pathways through education into this type of PhD programme.\(^6\) This has implications on the way the PhD is designed, the types of specialization that are possible and the level of initial training that is needed as part of the PhD programme.

The second issue to address – which is perhaps generic to most PhD studies in African university – is that those who sign up to do a PhD are often full time employees while studying and not full time students. This is not necessarily as per, say, the US model, whereby a new PhD student becomes a member of staff at the university and gets some of their tuition costs covered by being a teaching assistant at the university. It’s the fact that many PhD students are already either full time lecturing staff at a university or have a full time job in the public or private sector and lack the ability – due to limited scholarship opportunities – to not work full time while studying. This must be factored into the student’s workload planning and adequate measures taken to ensure the student manages to arrange the right study-work-life balance.

Universities in Africa might also want to consider how they can help facilitate a higher completion rate among enrolled PhD students e.g. by reducing the workload on staff that enroll as PhD students; covering some of the tuition fees of PhD students by offering them positions as research and teaching assistants while enrolled and by ensuring more effective supervision during the PhD programme period.

RUNNING A PHD PROGRAMME IN INNOVATION AND DEVELOPMENT

RECRUITMENT PROCESS

Due to the limitations related to the student or education pipeline (cf. above) recruitment for a PhD programme in innovation and development will initially have to be a gradual/incremental process. Hand-picking master students and PhD students with an interest in innovation and development and alerting them to the new options available for training in and outside Africa may be a starting point.

Similarly, encouraging Master students to study innovation and development issues abroad and later enrolling them in joint PhD programmes developed by emerging hubs of research on innovation and development issues in African universities (maybe in collaboration with research groups abroad) could be an option.

ENSURING HIGH QUALITY SUPERVISION AND STUDENT-SUPERVISOR RELATIONS

Good quality, productive supervision sessions and congenial relations between students and supervisors is important in any PhD, regardless of topic area. That said, AfricaLics has developed a set of generic guidance for those supervising students in the area of Innovation and Development. The AfricaLics Good Practice PhD Supervision Guide is available in English and in French.

Many universities also increasingly demand that PhD supervisors participate in formalized training and sessions where lessons learned on PhD supervision and what works/what does not work. The AfricaLics network hopes to gradually contribute to such efforts by organizing sessions for PhD supervisors e.g. in connection with the

---

\(^6\) If you consider a PhD in another – but more established cross-disciplinary area – like development studies, a student can often do a degree, a Masters and a PhD on that topic at the same university or at different universities; moving seamlessly through one stage of training to another because the subject is well established.
AfricaLics PhD visiting fellowship programme and as part of the teaching track organized in connection with AfricaLics conferences.

LIBRARY AND MATERIALS ACCESS

Again, the issue of library and materials access is not only an issue when thinking about designing a PhD programme in Innovation and Development. Access to libraries, journal papers and other materials is argued to be a constant issue for PhD students and lecturers from a range of disciplinary areas across Africa. This is not necessarily an issue of lack of access to digital library resources i.e. electronic journal access but the lack of infrastructure in universities (e.g. low numbers of computers per student and power blackouts) (Rosenberg, 2005).

That said, the AfricaLics network is aware that the subject area of Innovation and Development suffers from this issue perhaps more than some other cross-disciplinary areas because of the newness of the field of study in Africa. There are few dedicated journals to this field of study and not all universities subscribe to them. As a result, members of the network have been working to develop dedicated journals for this field, that focus specifically on African issues (c.f. African Journal for Science, Technology and International Development) and developing countries more generally (c.f. the Innovation and Development journal).

In order to effectively ensure students have access to sufficient material, PhD programmes being developed in Innovation and Development should talk with their University Librarian to ensure access to relevant journals are available. It is impossible to give a concrete list of the ‘essential’ journals that should be stocked – as this will also differ depending on the way in which the programme is contextualized and/or specialisms are added in – but we would recommend as a minimum the following journals:

1. Research Policy
3. Innovation and Development
4. Strategic Management Journal
5. International Journal of Technology Management
6. Science and Public Policy

In situations where access proves difficult, we recommend that faculty and/or university librarians contact INASP (http://www.inasp.info/en/) – a UK based non-profit organisation which works to enhance access to research resources in various countries including a range of African countries. Individual universities can contact INASP to check if they can become members of national consortia that helps negotiate better access.

FIELDWORK AND FIELDWORK MANAGEMENT

Experience indicates that research in innovation and development often benefits from a conscious combination of the use of different types of qualitative and quantitative methods at different stages of the research. For instance, qualitative methods can help students get a first impression of problems related to innovation processes and their importance in development processes. Later in the research process, a quantitative study may help shed light on, for example, how common certain findings from the qualitative work are. In this manner, in-depth knowledge of innovation and development processes can be produced. This obviously requires effective and efficient fieldwork management just like in any other study area making use of fieldwork. It is important that the PhD student or candidate gets sufficient support and time to develop guidelines for fieldwork and has access to/masters methods that can be used for analyzing fieldwork data whether in the form of coding qualitative data (e.g. by use of NVivo or similar systems) or in terms of analyzing quantitative data (e.g. using ‘R’, SPSS or other methods).

STUDENT PRESENTATIONS
While an increasing emphasis is being placed on PhD students in Africa having publications experience by the time they finish their studies, what is often forgotten about is the importance of regular presentations of work to peers and faculty at different stages in their degree training. Experience from the initial phase of the AfricaLics PhD Visiting Fellows Programme has shown that PhD students from African universities valued the opportunities to present their work at the beginning of their fellowship and again at the end to members of the department in Aalborg University where they were hosted. Notably they commented that this provided feedback often not available to them at their home institutions in Africa (AfricaLics, 2016b).

The regularity of such presentations is dependent in part on how university departments are managed but would strongly be recommended at the end of the student’s first year – to act as a mock viva before completion of their upgrade or probation exam – and again on completion of fieldwork and/or initial writing stages to gain as much feedback as possible to assist in their writing up.

Similarly, the possibility to present draft papers or articles during AfricaLics or Globelics PhD academies and/or conferences can greatly enhance students’ self-confidence and contribute to improved quality of work as discussants are often experience scholars in the field of innovation and development.

CONFERENCE ATTENDANCE & EXPOSURE TO POLICY AND PRACTICE ARENAS

The AfricaLics Research conferences are excellent opportunities for PhD students to present their work and get feedback from other academics from outside their universities who work in the innovation and development field. These events also provide an opportunity for students to interact with the latest theories and issues being discussed by academics and other stakeholders in the field of innovation and development. The AfricaLics PhD Academies are similar avenues for these opportunities although the focus here is also on gaining additional skills training (on how to publish or use various research methods utilized in the study of innovation and development in African contexts).

AfricaLics events are not the only events available to African students to gain exposure to this academic field. There are Globelics events (conferences and PhD academies) as well as the activities of other regional Lics (based in Asia, Latin America and Europe etc.) which are also dedicated to innovation and development thought. There are also conferences and academies by the DRUID group. There are also more traditional disciplinary international research conferences such as those by the Schumpeter society, the Academy of Management in the US or the Development Studies Association in the UK which may be relevant for PhD students to attend.

Increasingly however students should not only be given exposure to international academic conferences but also to policy and practice debates. These do not always require attendance at conferences and meetings but can also increasingly be done through webinars and online forums. Examples in the field of innovation and development include the OECD and World Bank’s Innovation Policy platform (https://www.innovationpolicyplatform.org/) and various LinkedIn groups focusing on science, technology, innovation and development.

PUBLICATIONS

Many African universities are making it mandatory for a student to have submitted and/or have accepted at least one publication prior to being able to be awarded their thesis. There are pros and cons of this approach which are generic i.e. regardless of topic area. On the one hand students need to show a publication record on finishing their PhD in order to get an academic job. However, on the other hand, the number of PhD students entering the private sector and not staying in academia is on the rise (Cloete et al, 2015) and students going for a more practical oriented career following finalization of their PhD may not need a long list of publications to be able to fulfill important tasks in private companies or similar. At the same time, there is some anecdotal evidence that this ‘publish or perish’ emphasis is creating a series of sub-standard journals (see also Shen and Björk, 2015) although others disagree that this is a problem (Kana, 2016).

Serious consideration should be given to this issue and notice taken of the dedicated journals that have been established for those working in the field of innovation and development (see Library and Materials Access section above).

EXAM/ VIVA PREPARATION
Depending on the type of degree programme that is developed the exam will be arranged in different ways. In some cases a student’s thesis is examined by viva with one or more external and internal examiners and chaired by an internal member of staff from the department or overarching faculty. The outcome of this viva determines whether a student has completed their PhD and the degree of corrections needed before their final thesis document can be published by the university as a completed examined thesis. In other cases the viva is a more public affair and is a confirmatory event after the thesis has been examined by a number of external and internal examiners who have given written feedback and comment.

In either situation, students need to revise and prepare for the event. Often in the run up to submission of a thesis it is easy for an examiner to forget to give sufficient time to a student to prepare them for their viva. There are a number of books and resources that assist students in preparing more generally (see Further Resources section below). These obviously cannot help with any unique rules and regulations specific to the student’s own university setting.

**SUPPORT AND CONTACT POST-PHD**

Once a student has completed their PhD many supervisors would see their role as having been completed. However, ex-students are extremely useful resources for universities and this should not be overlooked especially in the burgeoning field of innovation and development where human capital is limited. Ex-students provide the potential to become future teaching staff as well as provide access to case studies or data and funding in the future through alumni associations. However, perhaps even more importantly – in a burgeoning field such as innovation and development – ex-students can play a key role as mentors for new students; providing career guidance as well as general support for students as they progress through their studies. Utilisation of AfricaLics forums provides one avenue to access ex-students from this field in situations where programmes are being set up from scratch.

**LEARNING AND MODIFYING A PHD PROGRAMME IN INNOVATION AND DEVELOPMENT**

**UNIVERSITY AND NATIONAL REQUIREMENTS**

A PhD programme will have to be reviewed at regular intervals based on university and/or national requirements. Such reviews are useful to ensure they meet the purposes and objectives of the programme but also the university and wider society (see Relevance section above).

**FIT FOR PURPOSE GOOD PRACTICE**

A PhD programme should not however only wait for university and national requirements for review. Good practice means regular review of the programme objectives and learning outcomes against the requirements of the field – both academic and industry. Building in a peer review process of the PhD programme every few years is one mechanism by which to ensure the programme remains ‘fit for purpose’.

Peer review should also take place during the design of the PhD programme. Such a review should be conducted by senior and respected academics, practitioners and policy makers from the community and/or country that the PhD is based in. It should include sectoral specialists where a decision to specialize in certain subject areas has been agreed. It should also include peer reviewers from outside of the community/country situation in order to be able to see how the programme fits within a more global arena; even where the programme is focused on community specific issues – no community is immune from global pressures. The AfricaLics network provides one avenue for identifying potential peer reviewers in this area.
FURTHER INSPIRATION AND READING

FURTHER READING


REFERENCES


Kana, M.A., 2016. “Publish or perish” is good for African research. BMJ: British Medical Journal (Online), 352.


Lovitts, B.E. (2005): “Being a good course-taker is not enough: a theoretical perspective on the transition to independent research”, *Studies in Higher Education*, Bol. 30(2), 137-154


