An intervention to assist students with writing their dissertations and theses

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Abstract
An inadequate number of suitably qualified and experienced supervisors, an increase in the number of students, uncertainty regarding the suitability of supervision and academic rigour in dissertations and theses make it difficult to produce quality graduates within the prescribed time-frame as stipulated by the Department of Education. By implication, a strategy is needed to help both students and supervisors overcome these difficulties and produce quality research within the minimum time-frames. In this article, an intervention to assist students with writing their postgraduate research is presented and the need, planning, validation and implementation thereof are described. Reflection, inductive reasoning and observation initiated the need for this study and formed part of the needs assessment for the intervention. A template was designed as the intervention and was used as a guideline for students to use, presenting the basic format pertinent to writing dissertations\theses. To evaluate the intervention, a questionnaire was applied to ascertain students’ opinions about the intervention and was validated using face-validity. Responses were deemed reliable using the internal consistency for determining reliability. The study concluded that an intervention such as the template is beneficial and is an improvement from the traditional style of supervision and text-book teaching.

INTRODUCTION
Universities of Technology have embarked on initiatives such as granting incentives and awards, to attract students to pursue post-graduate studies. The shift in the mind-set of students, academics and administrators in these universities towards research has resulted in an increase in the number of students registering for post-graduate studies. However, academics currently face a number of problems in managing and producing quality graduates within the prescribed time-frame as stipulated by the Department of Education. Furthermore, in the study by Lumadi (2008), a number of the challenges experienced by students and supervisors were reported. Some of these challenges, from the student perspective included: unethical supervisory relationships, where students reported disputes with supervisors as well as propositions of sexual relations. Furthermore, students had certain expectations. While students requested more assistance in obtaining their supervisors’ expertise, supervisors were time constrained. In particular, assistance in research techniques
and in the criteria required for achieving the qualification, were commonly sought. Students reported the lack of availability of the supervisor, long waiting periods for feedback and change of supervisors during the course of their studies. From the supervisors’ perspective, it was noted that the quality of students was poor as they were inadequately prepared by previous qualifications. Supervisors stated that students failed to embrace the corrections suggested to them and considerable time was spent by the supervisor on editing the dissertations/theses. Language proficiency posed a problem as most students were second language English speakers which they perceived as a barrier. This was also documented by Kambal (1980), as cited by Al-Khsawneh (2010), who attributes students’ poor writing skills to their low proficiency in English and inability to construct sentences.

In contrast, Taylor et al. (1988) believe that students’ difficulties arise due their lack of exposure to academic dialogue and literacy. This is further supported by Boughey (2002), who challenges the assumption that students encounter problems with academic literacy and not the forms of the additional language that will allow them to receive and pass on thoughts developed in the disciplines. Boughey (2002) is concerned that the introduction of intervention programmes are generally geared to enhance academic literacy on the assumption that there has been a lack of teaching in structure and vocabulary of English. She believes that student problems arise from other experiences and supports it with citations from Emig (1997), Zamel (1982) and Taylor et al. (1988) who maintain that students will master writing coherently when their thoughts can be controlled and intervention programmes are geared to enhance sentence correctness based on the assumption that students’ thoughts are coherent.

From the review above it can be perceived that students find it difficult to make the lexicalization and grammar of English meaningful. This may be attributed to their inability to deploy the forms of English in a way that will allow them to receive and coherently express their thoughts.

Most of the challenges mentioned above are no different at the university investigated in this study. An inadequate number of suitably qualified and experienced supervisors, an increase in the number of students, uncertainty into the quality of supervision and submissions, an increase in undergraduate workloads of supervisors and the lack of preparedness of the students further complicate matters (Alexander, Joubert and Pretorius 2010). Grant (2003, 5), cited in Lumadi (2008) reports that students regard research as being ‘complex’ and ‘unstable’. Therefore, the success of postgraduate students, according to Lumadi (2008), is dependent on active supervision, which he believes is an area not well understood. Hattie and Marsh (2004) stress that the process of conducting research and the product of the research are critical to the success of the submission. From the review above, it was found that a combination of all these challenges hindered or prevented the progression of students’ research from both the students’ and supervisors’ perspectives. It was inferred that owing to these challenges, students did not know where to commence and supervisors were unable to adequately advise students.
An attempt to approach this challenge resulted in an intervention which was initiated to transform the traditional style of teaching research in order to assist and improve the students’ understanding of post-graduate research. The aim of this article is to present an intervention which consolidates the research requirements of a number of text-books (Reyaldo and Santos 1999; Welman and Kruger 2002; Leedy 2005; Melville and Goddard 2006; Remenyi and Money 2006; Simon 2010) into a holistic generic example in the form of a template of a dissertation or thesis suitable for postgraduate students from multidisciplines. The intention of the intervention is to show the student the mandatory requirements, application and methods appropriate for research and academic writing. It is argued that interventions are a useful initiative to assist students in post-graduate research (Remenyi and Money 2006, 30). This intervention was written specifically in the context of writing style, mandatory requirements and chapter layout, research methodology and design and some common editing and technical aspects. The objectives of the study were achieved by showing the efficacy of designing a template as an intervention and using it to improve teaching and learning. The template was evaluated by students who used it to develop their research at various stages.

LITERATURE REVIEW

A brief summary of the different approaches from literature used to assist students from other institutions in their academic writing, will be shown. Al-Khsawneh (2010) cites interventions by Hyland (2003) and Jordaan (1997) as exposing students to a number of tests to facilitate their understanding of research topics and ease in writing. Furthermore, he cites Tribble (1996) who uses groups of students to brainstorm topics and peer review each other’s work, as another means of development.

Morris (2005) studied the teaching of postgraduate research in selected institutions in the United Kingdom. His strategy was to expose students to a variety of lectures, tutorials, seminars, online discussions and practical sessions. The research found that having large cohorts were difficult to work with and that there was a need to shift from the traditional, lecture-based learning.

Simon (2010) designed a model which was inspired by the existing models of Kolb (1984), Paul and Elder (2001) and Gowin (2005). He provided guidance to students on different aspects of writing. His model was presented to students and the sections which students left blank were regarded as areas which needed particular attention. Later, students were allowed to review their and their fellow students’ work. He believed that it enabled faster feedback from the supervisor. Based on the areas in which the model was populated, the speed at which the students and supervisors worked, he concluded that the model was useful.

The process of designing, implementing and evaluating the intervention follows.
RATIONALE FOR THE INTERVENTION

Some of these interventions were initiated in the Department for this study at various intervals and combinations from 2003 to 2009. Although these interventions improved the pass rate, the quality of the students’ submission was still very poor and inadequate and students were unable to meet deadlines. As a lecturer, supervisor and examiner in post doctoral studies, it was observed that students experienced several problems when they embarked on research studies. Reflection, inductive reasoning and observation provided the basis for the initiation of this study (Leedy 2005; Remenyi and Money 2006). This finding is consistent with Reeves, Herrington and Oliver (2005) who cite Bransford, Brown and Cocking (2000) and share similar views. Reflecting on the questions posed at postgraduate workshops, post graduate student support groups and during one-on-one sessions between students and supervisors, it was inferred that students still lacked the confidence to commence with their studies. Inductive reasoning revealed that problems ranged from poor selection of topics, confusion about available research methods and the creation of suitable arguments and critique, to name a few. Melville and Goddard (2006) concur with these views.

These problems were deemed major factors which prevented students from progressing with their research. A reflection on these problems, in the Department in this study, stimulated the development of the template to serve as an innovative teaching intervention, which was different from what was traditionally available, as it was considered that the latter was ineffective.

PLANNING AND DESIGN OF THE INTERVENTION

Various factors were considered during the planning of the intervention. Literature based on teaching and learning was consulted (Taylor et al. 1988; Boughey 2002; Hattie and Marsh 2004; Reeves et al. 2005 and Alexander et al. 2010). This was executed to confirm that the proposed intervention was consistent with what education gurus were professing. Post-graduate research at the University and particularly the Department in which this study was undertaken is managed and taught by lecturers with little or no background on the fundamentals of education as a discipline. As a result, it was very difficult to understand or learn the unique language borne in the education discipline. Therefore, although the findings of previous education-related studies may be useful to a research lecturer with an education background it may be minimalistically understood and adopted in the development of the intervention. Hence, the intervention had to be validated prior to implementation. This validation process will be discussed later in the article.

The following factors related to the discipline of education, together with the literature above, were considered during the planning and preparation of the template. Hattie and Marsh (2004) cite Marsh (1984; 1987) and Marsh and Overall (1979) that the ability of being a good teacher and a good researcher were positively
related. However, the lack of time may de-motivate a teacher from working at his/her full potential. It was therefore that the intervention in this study had to adopt a new paradigm from the traditional, to expedite the management and progression of research from both the supervisors’ and students’ perspectives respectively.

Consequently, the template was designed and used as a guideline to present the basic format pertinent to dissertations and thesis to the students. The template began by presenting the mandatory administration requirements such as the declaration, acknowledgements, list of figures, list of tables, glossary and appendices. Thereafter, it presented the traditional sequence of chapters from the introduction, review of literature, research design and methodology, results and discussion, conclusions and recommendations to referencing. Each chapter began with a dialogue box indicating the salient aspects pertinent to that chapter.

Chapter 1 represented the introduction to the study. It highlighted the headings such as background to the study, statement of the problem, aim and objectives, delimitations and scope and an outline of the study. This was intended to provide the student with a point of departure for his/her study whilst also serving as a mechanism to confine the students’ thinking within the parameters of the aim and objectives.

Chapter 2 was the literature review. It presented the content which should be included to review other researchers work with a view to construct the students’ research. Furthermore, students were advised about using different styles of presenting authors to keep the writing fluid and interesting, to create an argument, dialogue and critique in their reviews.

The research design and methodology in chapter 3 presented theory and principles from various researchers. Students had to look at the selection available and choose the most appropriate theory and principles to their study. The validity, reliability and the feasibility for the justification of the methodology were stressed in this section.

The results and discussion in chapter 4 showed the empirical evidence to justify the findings of the research. It also highlighted the manner in which the student should present his/her findings and support it with literature presented in chapter 2.

Chapter 5, the conclusions and recommendations, closed the study. It demonstrated the link between the deductions and findings to the aim and objectives.

The contents of the dialogue box used a hypothetical example to demonstrate its application to a practical situation. The template culminated with a section on ‘do’s’ and ‘don’ts’ which were compiled after reviewing examiners’ reports from previous dissertations.

It was hoped that in illustrating the intervention as a sample of exactly what was required in terms of content and layout, it would encourage not only the progression of the research but also facilitate the understanding of the student.
VALIDATION OF THE INTERVENTION FROM SUPERVISORS’ PERSPECTIVE

Validation of the intervention was conducted in the form of preliminary work with a peer review from three academics. Face validity was used to determine the feasibility and applicability of the template. The academics were represented by a professor from a social science background, a Ph.D. researcher from applied sciences and an international professor from a partnering university. This array of academics was selected to establish the flexibility of the template to multiple disciplines. Due consideration to multiple disciplines in this Department is essential as the programme does not offer an under-graduate qualification and students from applied sciences, social sciences and health sciences enrol for the B.Tech., M.Tech. or D.Tech. levels via a conferred status.

The criteria for comment posed to these academics sought the following of the template: logical flow and guidance, appropriate to academic writing, informative and stimulating to commence writing, user-friendly, simple language and a useful guideline.

All the academics in this peer review supervise post-graduate students. All three academics rated all six criteria as ‘YES’. A combination of the comments from the academics was as follows: useful, very motivating, applicable to all students irrespective of discipline and extraordinarily simple to follow even for foreign students. No changes were recommended. From their positive feedback, it was concluded that the template was useful from a supervisors’ perspective. Further investigations from a students’ perspective needed to be done.

IMPLEMENTATION OF THE INTERVENTION

This investigation on the application of the template was conducted with students from one academic department in the University. Hence, the results obtained cannot be generalized for a wider sample. However, the template may be useful to a broader scope of departments. Ten B.Tech. students, 3 M.Tech. and 2 D.Tech. students were asked to use the template for their research. The B.Tech. students are required to submit a mini-dissertation which covers one year of research work. They were given the template to use during the course of this one year process.

EVALUATION OF THE INTERVENTION

After implementation, the intervention was evaluated. The quantitative research technique was adopted (Welman and Kruger 2002). Questionnaires were administered to students who used the template.
STUDENT RESPONSE TO THE INTERVENTION

To assess the student response to the template, a questionnaire was applied. To assess the effective application of the tool document analysis of their dissertation and theses was used. The questionnaire, consisting of 15 questions using a five-point Likert Scale and one open-ended question, was administered to students who had used the template to infer their perceptions of template. According to Leedy (2005) this is a useful method to source information about practices. The following aspects were contained in the questionnaire which was designed for this study: the layout and design of the template (simplicity), perception of template when compared to traditional text-book, contents and applicability, motivation and usefulness. The open-ended question was included to allow student feedback on any aspect which they felt was important and was not included in the closed-ended questions. The questionnaire was validated using face validity by an academic prior to administration and by applying the Cronbach Alpha Test post administration of the questionnaire.

The responses to the questionnaire by the 3 M.Tech. and 2 D.Tech. students were based on their use of the template to develop their proposals and in some instances for chapters of their research, as they are at varying stages of their dissertations/theses.

The mini-dissertations, proposals and chapters were assessed to evaluate the usefulness of the template from observing the quality of the submissions. Document analysis was applied and a checklist was used to ensure consistency when evaluating the dissertations and theses. The checklist included criteria related to mark allocation, editorial aspects, language and presentation, academic writing, relevance of research area, alignment between chapters, knowledge of research methods, functionality of figures and tables, ability to critique and create arguments, analysis and interpretation of results and consistency in referencing style.

The reliability of responses to the questionnaire were established. It may be argued that the sample size for this study was too small; however, according to Fisher (2008), when results are distributed evenly (25% on each side) about the central value, sample size does not influence the reliability of the result, as was the case in this investigation. Responses to the questionnaire were deemed reliable using the internal consistency for determining reliability. Reyaldo and Santos (1999) cite Nunnaly (1978) and indicate 0.7 to be an acceptable reliability coefficient. The Cronbach’s Alpha Index of reliability scored a value of 0.95 for the B.Tech. category, 0.91 for the M.Tech. category and 0.69 for the D.Tech. category, showing that the results obtained for this analysis are stable and can be considered reliable.
THE FINDINGS RELATED TO THE DOCUMENT ANALYSIS OF DISSERTATIONS AND THESES AND THE STUDENT RESPONSES RELATED TO THE QUESTIONNAIRE

The document analysis of 10 B.Tech. dissertations revealed that after assessment of their theses, their examiners awarded marks in the range of 60–75 per cent. The two dissertations which obtained 75 per cent contained only minor editorial errors and met the basic requirements for academic writing. These students also demonstrated a sound knowledge of research methodology. It is believed that this favoured the credibility of their submissions. Even the variety of referencing styles prescribed in the template was adopted. It was inferred that the intervention presented a platform for these students to create arguments and critique.

The findings of the questionnaire reflect that all the respondents in the B.Tech. category indicated that the template was informative compared to a traditional textbook, the contents of the template was applicable, motivating, useful, clear and easy to understand. All the respondents indicated that the template aided them in deciding what should be included in each chapter and the section of ‘do’s and don’ts’ was also regarded as being helpful.

Two respondents (18%) did not think that the dialogue box was effective. These students did not substantiate reasons for this comment. The assessment showed that some students still had difficulties in presenting their research in the appropriate language and design, but they were able to initiate and progress reasonably with each chapter. It can be assumed that perhaps if the dialogue boxes were written with more clarity it would assist the students to a greater extent than it is at present.

One respondent indicated that the template did not keep him/her motivated. It is doubtful how to assess this response as it conflicts with earlier comments to questions made by this respondent, such as those to determine if the template helped the student to keep a consistent pace with their study.

All the M. Tech. respondents in this section used the template to develop their proposals. Two of the three respondents for questions related to the theme motivation indicated that they were unsure about those questions. These students are at the very early stages of their study and it is premature for them to comment on the questions mentioned above. The perceptions of these students will be sought later in the course of their research process. The third respondent was completing his methodology and therefore was able to make a more informed comment on these questions. There were no responses for the class ‘strongly disagree/disagree’ and therefore it was excluded from the table.
FINDINGS RELATED TO OPEN-ENDED QUESTIONS OF THE QUESTIONNAIRE

Comments from the B.Tech. students to open-ended questions related to the comparison of the template to traditional text-books, applicability, usefulness and motivation of the template were:

useful otherwise I would have been in a mess, of great help to me, provided answers to questions in my mind, the template is a brilliant idea, I failed the subject twice before, the template gave me direction all the way and is much easier than a traditional text-book.

Two comments which could be of concern were related to the need for more detail with definitions and reliance on one publication. From an analysis of the first response, it could be inferred that the respondent required more information on the terms and definitions used in the text, for example, quantitative and qualitative analysis. Basic definitions and understanding of the terms and definitions were substantiated in the text. It appears that this student preferred to have more information so that he/she could use fewer textbooks in an attempt to save time. Interestingly, in contrast, the second comment from another respondent cautions against a heavy reliance on one publication. This was not the intention of the template and it was highlighted in the foreword that the publication was a guideline and did not replace the depth of a textbook.

Other comments from the open-ended questions for the M.Tech. category were:

the template was easy to understand, user-friendly, clarified a lot of doubts, provided a holistic understanding of research and placed me in a far more informed position when approaching research, it made my task of research less daunting, the aesthetic presentation made it easy to work.

Feedback obtained from open-ended question for the D.Tech. students was as follows:

easy to follow and useful tool, informative, if only I had this template when I was doing my masters, it would have eased many hurdles encountered, particularly around understanding methodology, reliability and validity.

A useful suggestion from one respondent was to include websites and additional books to guide students’ further readings. There were no responses for the classes ‘unsure’ and ‘strongly disagree/disagree’.

CONCLUSIONS AND FUTURE WORK

The template was intended to provide a novel technique for facilitating the writing of research projects as opposed to the traditional way which is supervisor reliant.
An intervention to assist students with writing their dissertations and theses

and textbook driven. Subsequent to administering this technique, it can be inferred that this teaching and learning intervention provides the student with a concise and less voluminous guide, as opposed to the traditional text-book. Preference for the template can be due to the tool being less intimidating and more accessible to the student. Students reported that the usefulness of the template was further enhanced when the applicability of each section was demonstrated by the hypothetical example from common life experiences. Traditional textbooks generally use generic examples to show applicability to theories and principles. However, the use of the different aspects of the same example in each chapter in the template provided continuity and illustrated the ‘golden thread’ as the study progressed through all the chapters.

From observations and the type of questions posed by the students in the initial workshops, it can be concluded that the B.Tech. students did not have basic knowledge of research before embarking on the study/project. This is surprising as all these students had to complete at least one research investigation or project at undergraduate level. Hattie and Marsh (2004) refer to a university that connected research based teaching, professional practice and teaching, in an attempt to improve both undergraduate and postgraduate programmes, in their university. Perhaps there should be a discussion between the undergraduate and B.Tech. programmes to align learning material to facilitate this progression.

Upon assessing the dates on which data was gathered in the dissertations and theses, it can be inferred that students completed their work very close to the due date for submission. This was evident from the dates on which the data was captured. Therefore, it can be gleaned that students could have underestimated the level of commitment, time and perseverance that was required when conducting research and possibly cramped work closer to submission dates. Perhaps the template should include a Gantt chart outlining milestones in the next edition to ensure that students plan better. Adherence to this plan would enable them to better manage their work and achieve completion of the dissertation/theses comfortably on time.

Most of the students in all the programmes had editorial errors and poor grammar in their dissertations and theses. Perhaps students should be refreshed on basic grammatical rules. The following version of the template will also consider the inclusion of common grammatical and editorial errors which arise from the workshop above as a flag to alert students.

Although the University provides a free guideline to referencing for students as a hard a copy from the library and on the institutional intra-net, there seems to be confusion in the minds of students from all disciplines regarding the concepts of referencing and plagiarism.

In most instances, research methodology was poorly approached. Students were still unsure about the selection of appropriate research techniques and associated methods. To this end, the template will be updated with a series of flow diagrams that will address each aspect of research methodology. Each flow diagram, with the aid of supporting charts, will address the progression of research from the initiation stage to the presentation of results, validity and reliability.
Considering the various observations and findings which emerged during this study, it can be concluded that an intervention such as the template reported in this article was beneficial to assist students and supervisors in progressing, developing and improving skills when writing dissertations and theses.

REFERENCES


