Dundalk Institute of Technology

Project Supervision Guidelines for Staff and Students

'Research goes beyond description and requires analysis. It looks for explanations, relationships, comparisons, predictions, generalisations and theories. These are the 'why' questions. Why are there so many fewer women doctoral students in physics than in biology? Why are the radiation levels different in different geographical areas? Why is the productivity per worker in British manufacturing industry less than that of France or Germany? …. All research questions have comparisons in them, as the words 'fewer', 'different', 'less' in the examples above illustrate'. (Phillips and Pugh, 2009, p. 48)

'Research is *the* fundamental human learning activity, involving enquiry, problem solving, diversity, flexibility and decision-making. It enables the development of creative thinking, problem-solving strategies and abilities which in turn help others to approach everyday life as well as professional, local, national and international questions'. (Wisker, 2005, p. 5)

September 2011

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Contents

1. Introduction:

Completing a research project has become an accepted part of learning at DkIT as a consequence of the widely recognized benefits of the research process for student learning. A research project offers students the chance to undertake a piece of research in an area of interest to them and to pursue it through to completion. These guidelines serve to offer guidance for both research supervisors and all students who are engaged in completing research projects.

2. Research:

Research allows students to apply concepts and knowledge acquired in their studies through critical evaluation of relevant theory and research findings, whilst enhancing their research skills through the scope and depth of their inquiry. Research also provides students with opportunities to demonstrate advanced levels of information sourcing, summarising and synthesising, and a high level of composition and structure in the overall presentation of the completed study. Wisker (2005, p. 25) states that, 'Undertaking research in any subject consists of problematising whatever is given, putting enquiry into action and learning how to develop an evidence base for knowledge claims and contribution'.

2.1 What is Research?

Research may, in its broadest sense, be defined as an investigation with a purpose. In the *Merriam-Webster Collegiate Dictionary, Tenth Edition,* it is defined as follows:

1. To search or investigate exhaustively.
2. The studious inquiry or examination; especially: investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws.

3. The collecting of information about a particular subject.

In the course of this 'studious inquiry', research methods are an integral part of the research process and constitute a formal approach to that process, which may be defined as an **organized** and **systematic** way of **finding answers** to **questions. Organized,** in that there is a structure or method to the approaches one takes. (Research is therefore a planned procedure, not a spontaneous one, and it is limited to a specific scope.) **Systematic,** because there is a definite set of procedures and steps to follow - there are certain elements in the research process which are always carried out in order to obtain the most accurate results. **Finding answers** is the end of all research; whether it is the answer to a hypothesis or even a simple question, research is successful when it finds answers. **Questions** are central to research. Research is focused on relevant, useful, and important questions. Without a question, research has no focus, drive or purpose. One such purpose may, for example, be to create or test a theory.

The fundamental tasks of research are **describing, explaining and analyzing**. Describing addresses the 'who, what and how' questions, and explaining and analyzing the 'why' questions. Balsley and Clover (1988, p. 1) state that, 'Research is the process of systematically obtaining accurate answers to significant and pertinent questions ….'

2.2 The Characteristics of Formal Research:

Formal research starts with a question or problem: The world is filled with unanswered questions and unresolved problems. An inquisitive mind is the beginning of research.

Formal research requires a clear articulation of a goal: A clear, unambiguous statement of the problem is critical.

Formal research follows a specific plan: Research follows a carefully planned structure and the organization and style elements are important considerations within the process as a whole.

Formal Research often divides the principal problem into more manageable sub-problems: The problem is a whole that is comprised of the sum of its parts.

Formal research is concerned with the collection and interpretation of data: During research, data is gathered and interpreted so that a conclusion is reached and the question is addressed.

2.3 Skills of an Effective Researcher:

In order to be an effective researcher, certain skills are necessary. The most important of these skills are:

1. **Writing Skills** – to write up the research project clearly, so that it can be understood, and concisely, as most are completed to a tight word count.
2. **Analytical Skills –** to go beyond description and link elements together, in order to weave a story from the data that has been collected in the course of the research. It is not enough simply to present the data, it must also be analyzed.
3. **Interpretive Skills –** to interpret the data that has been collected and relate it back to the literature review.
4. **Emotional Resilience –** as the process requires that you engage with it over a long-term period.
5. **Organizational Skills –** to manage your time effectively, so that deadlines are met and the project completed on time.

(There will be overlap in the above).

In summary, a good researcher must have the ability to successfully balance description and interpretation and provide enough detail to offer a rich insight, whilst also providing enough focus to present a convincing argument.

2.4 Formulating a Research Question:

When choosing a research question, consider what topic interests/motivates you and also consider whether it is a researchable area. With regard to the latter, consider (a) whether the area has been tested extensively and/or (b) is there any gap in the literature that could be addressed by your research? Take time to explore different avenues for the problem identification. This can prevent difficulties at a later stage. Consider what it is that you want to know about a topic? Do you want to:

- Describe something – to find out the facts about a situation **(Descriptive**)
- Explore something – are you looking for patterns/new insights? (**Exploratory**)
- Explain how or why? (**Analytical or Explanatory**)
- Forecast the likelihood of particular events? (**Predictive**)

Bryman and Bell (2007, p. 89), citing Watson (1994), identify six criteria that are important for evaluating a research question.

These state that research questions should:

(i) Be clear – be understandable to you and to others.

(ii) Be researchable – be capable of being developed into a research design so that data can be collected.

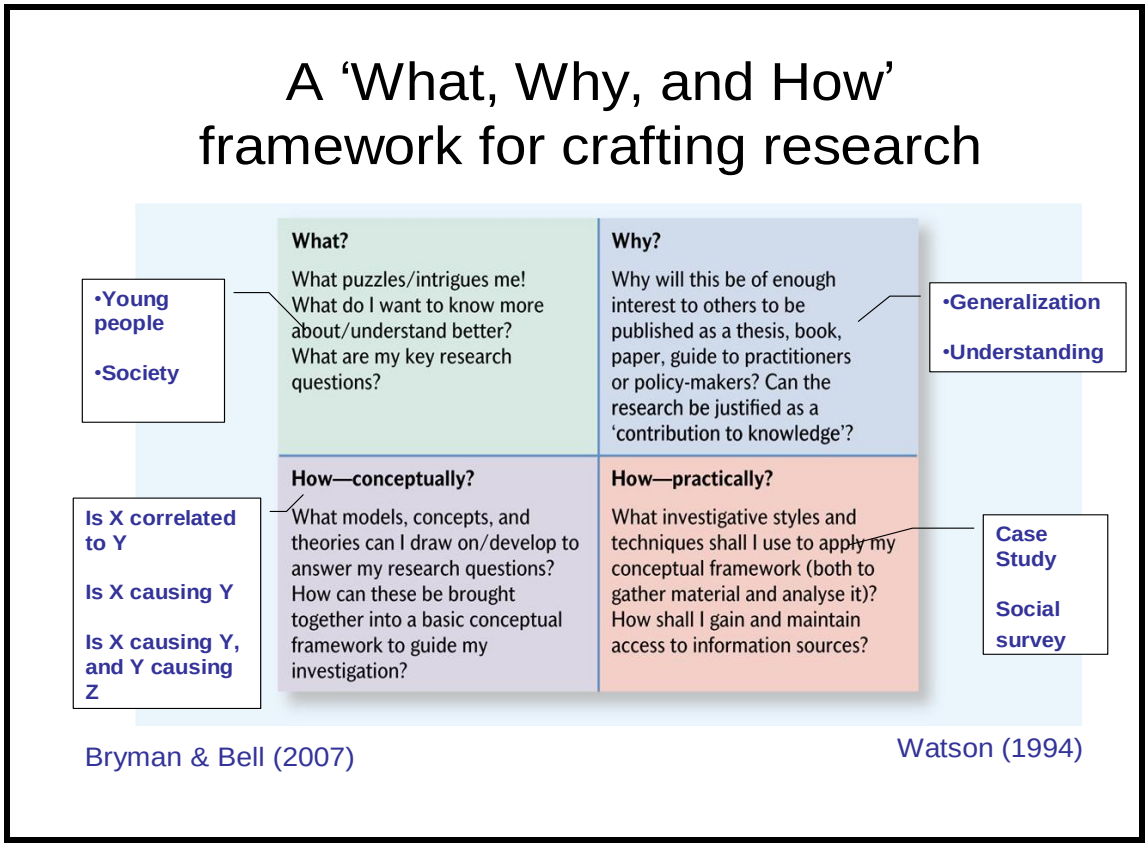
(iii) Connect with established theory and research – so that there is literature upon which you can draw during your research.

(iv) Be related to each other.

(v) Have potential for making a contribution to knowledge – even if it is only a minor contribution.

(vi) Be neither too broad nor too narrow – if the question is too broad, it may not be do-able within the time frame/word constraints allowed; if it is too narrow, it may not make any significant contribution to your area of study.

2.5 A Framework for Crafting Research:



3. Learning Agreements:

At the heart of a successful research project is the relationship between the researcher and the supervisor. This relationship requires mutual respect and adaptability on both sides to the changing balance between the academic needs and independence of the researcher, the expectations of the supervisor and the requirements of the Institute. A Learning Agreement is a tool to help facilitate the relationship between researcher and supervisor. It encourages both parties to develop a thorough understanding of their individual and shared roles and responsibilities, and is drawn up to make each party's expectations explicit (Anderson et al., 1996). Both parties should give some consideration to the Learning Agreement before the first meeting, when it should be drawn up. Wisker (2005, p. 51) states that learning agreements help to '…negotiate workable expectations and relationships together and act as an objective vehicle to discuss any breakdowns'. The questions listed below can act as a starting point - this list is not exhaustive and it can be added to as appropriate to a specific research project. Questions can be structured around a number of headings:

Approach to the Research: What are the objectives of the research project as a whole? What are the critical success factors for the research?

General Roles of Researcher and Supervisor: What are the responsibilities of the student and supervisor? Have you read the "DkIT Project Supervision Guidelines for Staff and Students"? How will a realistic programme of work be created and monitored? Does the student have any individual needs, which must be taken into account in order to complete the research?

Topic Specific Considerations: What are the main pieces of literature associated with the research topic? What are the relevant theories associated with the research field? Are any particular ethical considerations involved? What research method is proposed?

Consultation and reviews: What are the agreed methods of contact? What are the expectations concerning preparation and attendance at meetings? How often will meetings take place? What are the expectations about provision and feedback on written work?

3.1 Sample Learning Agreement:

Research Student: _____**Supervisor:** _____

Title/Research Topic: _____

Start Date:_____ **Due Date:** _____ _____

Agreed Number of Meetings: _____**Dates/Times:**_____

Research Student: I agree to:

1. Develop a time plan for the research project

2. Produce work at agreed intervals

3. Send work in advance

4. Communicate about questions, blocks, problems (in short emails)

Supervisor: I agree to:

1. Clarify/refine research topic/aim/objectives

2. Respond to questions/queries within a reasonable time-frame

3. Read work sent in and offer constructive criticism

Signed by Student: _____

Signed by Supervisor:_____

Dated: _____

4. The Roles of the Research Supervisor and the Research Student:

The relationship between the student and supervisor is a very important one. Wisker (2005) states that students need to be able to work with their supervisors, and supervisors with their students, to ensure the experience is rewarding for all concerned. The relationship needs to be based on respect and honesty and open dialogue. However, the supervisor/student relationship is fraught with difficulties if the expectations of either side are not aligned with the other. The Learning Agreement (see above) aims to establish a clear relationship between student and supervisor with defined parameters right from the start. It does this by seeking to clarify the roles of both parties in order to clear up any misunderstandings that could arise during the project and result in unfinished or poor quality work.

4.1 The Role of the Supervisor:

Supervising research requires that supervisors develop a range of research-related and interpersonal skills to allow them to nurture, support and encourage independence in their students.

The Minimum input expected from supervisor:

- Hold an initial face-to-face meeting at the start of the research project
- Have good knowledge of the research area and be able to put students in touch with information, reading, contacts and internet sites
- Have good knowledge of the supervision process
- Hold further meetings to review progress throughout the research project
- Review and comment constructively on the first draft, if submitted in good time
- Respond to all email and telephone contact within a reasonable time period
- Mark the research project

The supervisor can reasonably expect the student to show independence; be honest about how the research is progressing; to produce quality written work and to meet commitments, or be prepared to explain why.

4.2 The Role of the Student:

Students expect to be supervised and thus guided through the research process. The student is entitled to expect constructive criticism; guidance, suggestions, advice and ideas; guidance with literature; support and direction. Wisker (2005, p. 47) states that, 'Ultimately, it is up to the students to manage the project and their time and to have a clear idea of their goals and how they are to achieve them'.

The Minimum input expected from the research student:

- To be responsible for their own research
- Make the first contact to arrange initial meeting once the supervisor is allocated
- Set up and agree dates for progress meetings with supervisor
- Set up and agree the date of delivery of the first draft
- Set up and agree a date to receive feedback on first draft

4.3 Agreeing Outcomes:

It is important ***and*** advantageous that a record of the supervisory meeting is kept and outcomes/further action agreed before the meeting concludes. A sample pro-forma, for this purpose, will be found in **Appendix A**.

5. Writing a Research Project:

The writing of a research project is primarily an exercise in organisation. While the content and logic of your research and analysis are of paramount importance, the organisation and style elements are critical to the acceptance and grading of your work.

5.1 Guidelines on Writing a Good Proposal:

The proposal is a very important step and should be given careful consideration as everything that follows will be based on this. A research proposal presents a statement of the focus of the research and the main questions to be investigated. It theoretically contextualizes the topic through a review of the relevant literature.

A proposal also critically reviews the research methods available to you for undertaking empirical research and thereby justifies your subsequent methodological choices. Following the above, the research proposal should present a description of how, and what, data will be collected and give an explanation of how that data will be interpreted **and** analyzed. Finally, it should also discuss the practical outcomes of the research and demonstrate an achievable research plan.

5.1.1 Checklist for Proposal: A research proposal should contain the following information:

- **Student name, student number, course title, module title.**
- **Background to the Research Questions:** Provide a rationale for selecting this topic/question (word length to be agreed for this and other sections).
- **Research Question and Research Objectives:** Outline your research question and research objectives.
- **Literature Relevant to your Proposal:** Outline at least four or five pieces of literature which you will draw on for the project. Academic literature should be drawn from textbooks or academic journal articles. Please include full references.

- **Ethics**: Examine and explain ethical aspects, adhering to the Institute's Ethics Guidelines.
- **Research Site:** Include brief details regarding your primary research site.
- **Research Methods:** Outline the research methods you intend to use. Provide justification of their use.
- **Other Information:** Include any other information that may be relevant to the project.

5.2 Writing a Good Introduction:

This section introduces the research project and provides the reader with sufficient information to know what you are intending to examine and why this issue is of importance. When introducing the topic, address the what, why, how and where questions - so state the research aim and objectives; the rationale for choosing it; briefly outline the methodology that was used to conduct the research, and briefly introduce the organization where the research was carried out.

5.3 Reviewing Literature:

A literature review should comprise an overview of the subject, issue or theory under consideration and should focus only on relevant academic literature. In a literature review the researcher must find data and use it well. Obviously the review is bounded by the word count so it is important to make sure that the content is relevant and presented well. A good literature review will go beyond simply listing relevant literature and will be presented as a critical essay where the literature will not be taken at face value but rather will show an awareness of the theories and values that underpin the research. A literature review must be organized around and related directly to the thesis or research question you are developing; it must synthesize results into a summary of what is and is not known; it should identify areas of controversy in the literature and it can formulate questions that need further research. According to

Bryman and Bell (2007) the purpose of exploring the literature is to discover the four following items:

- What is already known about your area of interest?
- What concepts and theories are relevant to this area?
- What research methods and research strategies have been employed in studying this area?
- Are there any significant controversies?

In Dundalk Institute of Technology, the standard referencing system is The Harvard System of Referencing which requires both in-text citations and the compilation of a reference list. See Credit Where Credit is Due. **Endnote**

5.4 Writing the Methodology Section:

This chapter contains a discussion of the methodology adopted and thus should include some or all of the following, depending on (a) the research area and (b) research methods chosen:

- objectives/purpose of your research
- research approach (case study; survey or action based; qualitative/quantitative)
- method of **data collection** (interviews, questionnaires etc.) and method of **data analysis**
- unit information (coverage/sample)
- access issues
- familiarity with research site
- personal reflections and learning
- ethical issues

5.5 Writing the Findings & Analysis Section:

The discussion of the results of the research project should be meaningful in light of the preceding chapters. Therefore it is not acceptable merely to present the findings. It is important that the findings are related to the results of the primary aims and objectives

of the project and in the context of the existing body of knowledge in the field. The researcher should also try to add some interpretation in the discussion of the results; however, try not to take too wide an interpretation of your findings. In terms of presentation, some material may be suitable to present in graph form. For statistical data, always provide the statistical significance of a relationship – without this information the results are meaningless and the reader will find it impossible to interpret the information provided.

5.6 Time-tables & Milestones:

Bryman and Bell (2007, p. 79) note that, 'All research is constrained by time and resources'. One of the greatest difficulties students have when completing a research project is time-management. Most students grossly underestimate the amount of time a research project takes. A consequence of this is that the research that they submit is completed in a hurry and thus, typically, not of a high standard. It is therefore very important that students work out a timetable for their research project. This timetable should pinpoint the different stages of the research and the various submission dates if the project is to be submitted at different intervals. One very useful tool for such a timetable is a Gantt Chart. A Gantt chart is a horizontal bar chart developed as a production control tool in 1917 by Henry L. Gantt, an American engineer and social scientist. Frequently used in project management, a Gantt chart provides a graphical illustration of a schedule that helps to plan, coordinate, and track specific tasks in a project.

A Gantt chart is constructed with a horizontal axis representing the total time span of the project, broken down into increments (for example, days, weeks, or months) and a vertical axis representing the tasks that make up the project (for example, completing first draft of literature review; writing first draft of methodology chapter; conducting field research; editing literature review; writing draft of research findings and analysis; editing complete work etc.). Horizontal bars of varying lengths represent the sequences,

timing and time span for each task. The bar spans may overlap, as, for example, you may conduct research and editing your literature review during the same time span. To view sample Gantt charts go to http://www.ganttchart.com/Examples.html

6. Submitting a Draft:

A draft of the research project must be submitted on the date agreed with the supervisor or contact must be made with the supervisor to agree to an alternative date. The rationale in submitting a draft is to allow the supervisor to review the work and make suggestions on how the student could improve the work and this process takes time.

6.1 Checklist for Draft:

The draft should include:

1. Title page
2. Abstract
3. Acknowledgements
4. Table of Contents
5. List of table and exhibits (if necessary)
6. Introduction
7. Literature review
8. Research methodology
9. Results and analysis
10. Conclusion and recommendations
11. Bibliography
12. Appendices

6.2 Editing Your Work:

You should consider writing as a process that consists of three distinct stages:

- **Pre-writing** which involves researching the topic and planning your approach
- **Writing** which involves completing the first full draft
- **Re-writing** which involves re-drafting, revising and proof-reading your work

How long you spend on each stage will vary according to the nature of the writing task and the amount of time you have been given to complete it. As a general rule, the best time to edit is not immediately after you've completed a draft. Instead, wait a few hours - even a day or two, if possible - in order to gain some distance from your work.

Some people find it beneficial to read the work aloud when revising as you may hear problems in the writing that you cannot see. It is often noted that 'all good writing is re-writing'. Editing is an extremely important part of writing as it allows the reader to process the information and present it in the best possible manner for clarity and logical flow. When editing your work, check that it meets the requirements of the research project and is presented according to the conventions required. Typically this means that:

(i) The **title** words are chosen with care, paying attention to syntax – the title should be the fewest words possible that adequately describe the contents of the research project.

(ii) The **abstract** states the principal objectives and scope of the project; briefly describes the broad methodological framework adopted; summarises the results and states the principal conclusions – all of which should be done within a word limit of 250-300 words.

(iii) The **introduction** sets the scene for the research project, provides the reader with sufficient information to know what you are intending to examine **and explains why** your research is of importance.

(iv) The **literature review** critically examines the relevant literature in the appropriate field.

(v) The **methodology** chapter outlines, details **and justifies** your research methods choice.

(vi) The **findings and analysis** chapter presents your findings and relates them to the primary aims and objectives of the research project in the context of the

existing body of knowledge in the field. The findings and literature are linked together.

(vii) The **conclusion** is effective: it emphasizes the main idea(s) and provides a sense of completeness.

You should also check that the writing is of an acceptable standard:

The words used are spelt correctly, and are appropriate, effective and precise; the sentences are clear and direct; the writing has a consistent tone; each verb agrees with its subject; all verb forms are correct and consistent and all pronouns refer clearly to the appropriate noun.

The writing has a logical flow to it – each paragraph contains one main idea and starts with a **topic sentence**; each paragraph develops logically from the previous one; the main point of each paragraph is clear and there are clear transitions from one paragraph to the next.

Finally, you must ensure that the presentation is correct – page numbers are in order; there is good visual layout of pages, thus headings do not appear at the bottom of a page; all abbreviations used are detailed in full the first time they are mentioned; all citations and references are carefully checked, and there is consistency throughout.

See also DkIT resource for students on Academic Writing Skills.

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Appendix A

Project Supervision Pro-forma

Those Present:

Date of Meeting:

Duration of Meeting:

Summary of Issues Discussed:

Particular Queries or Problems to Note:

Action Agreed:

Date of Next Meeting:

Supervisor's Signature:

Student's Signature:

Acknowledgement: School of Business Studies and Humanities.