University of East London

Pioneering Futures Since 1898

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UEL-CN-7000 Mental Wealth; Professional Life

(Dissertation)

Weeks 2-3 – Reading Material

Research/Dissertation Development

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INTRODUCTION

It can be difficult to choose a good project for your degree course because the field of computers is so diverse, covering a wide range of topics from sociological and management challenges to highly technical hardware and software innovations. The kinds of initiatives that are approved by various university departments also differ. Some academic departments might let students work on highly technical programming projects (so long as they have enough requirements capture, design, and implementation), while others want more intellectual content that comes from critical evaluation, analyses, and literature reviews. The abilities you will need to choose an acceptable research or dissertation project for your degree are introduced in this chapter, along with some advice. Following that, it will address how to produce an appropriate proposal for your study or dissertation and provide a literature survey as the project's basic basis. A literature search and a literature review are the two main parts of this survey. The process of finding, classifying, organizing, and processing the available research material is represented by the literature search. The literature review serves as a written representation of your comprehension, critical assessment, conceptualization, and presentation of the information you have acquired.

LEARNING OBJECTIVES

By the end of this week, the student will be able to understand the:

1. Select a worthwhile project.
2. Compose a research/dissertation proposal.
3. Be familiar with the methodology of literature reviews.
4. Specify a literature search and carry it out.
5. Write a literature review.

TYPES OF COMPUTING PROJECTS

The five types of computing projects are introduced in this section. These categories are not meant to be separate; you might discover that your personal project fits into two or more of them (or perhaps falls distinctly into one category but draws on approaches that are identified in others). Additionally, the nature of your project will influence the approaches you take to complete it.

Research Based Many excellent dissertations don't do anything more than provide a discipline with some structure and a systematic review. A research-based project entails a thorough investigation of a specific area; this improves your understanding of that area, identifies strengths and weaknesses within the field, discusses how the field has developed, and recognizes areas that are suitable for additional development and investigation. This kind of research, which would be appropriate for taught undergraduate or taught graduate courses, will entail some sort of literature search and review (Sharp et al., 2002).

Development This area covers the creation of process models, methods, algorithms, theories, designs, requirement specifications, and other intermediate documents, in addition to software and hardware systems. Database systems, multimedia systems, information systems, and web-based systems are a few examples of software development initiatives. You may be expected to submit requirements documentation, designs, analyses, fully documented test findings, along with user manuals or guides, for various innovations (particularly software).

Evaluation All programs that have a primary focus on evaluation fall under this category. Such a project might, for instance, compare various approaches to a particular problem; assess two or more programming languages (applied in various contexts or to various problems); examine a particular industry's implementation process; evaluate various user interfaces; analyze a specific

concept; take into account new and alternative technological approaches to a problem; evaluate development methodologies to a problem; and so forth. Case studies may be used in projects in this area as a means of analyzing the problem at hand.

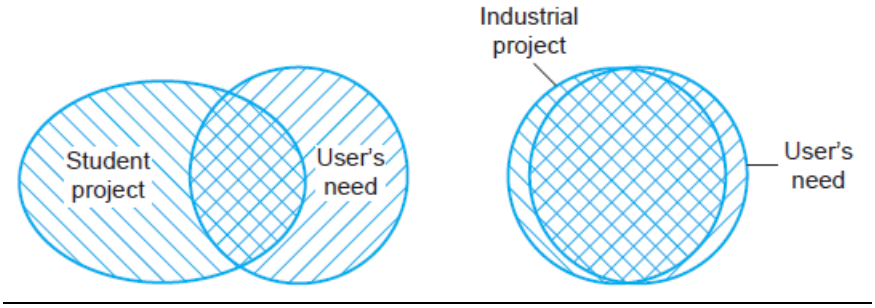

Figure 1 Evaluation of Student and Industrial Development Project

Industry-based An industry-based project entails resolving an issue within a business or another academic division. Any of the other project types mentioned in this section could be considered industry-based projects. The distinction in this instance is that you work on the project for a real client, which has both advantages and disadvantages. The most crucial thing is that the sponsor refrains from "hijacking" the project, or forcing it in a direction that the firm desires, regardless of whether that direction is appropriate for your academic work or your course. You'll probably discover that an industry-based project uses the action research methodology; for example, Figure 1 shows the evaluation of students' and industrial development project (Dawson, 2005).

Problem solving A project to tackle a problem could involve creating a novel method, enhancing the effectiveness of current methods, or comparing various theories or methods in various contexts. It might also entail adapting an established idea or method of problem-solving to a fresh situation. In these situations, evaluation of some kind would be needed. For instance, did your new strategy work well, or did you find reasons why it wasn't appropriate for challenges of this kind? Why does one strategy or theory perform better in some circumstances than others?

SHORTLIST AND SELECTION OF DISSERTATION PROJECT

Your subject selection will be constrained by the official guidelines for your research/dissertation. You will undoubtedly be required to write an original dissertation, so it would be wise to avoid selecting a topic that has already been explored by someone else unless you have solid reason to believe that your discoveries and conclusions would differ. Although your dissertation shouldn't be evaluated on whether it adds new knowledge, it is almost likely worthwhile to look for a subject and methodology that together break new ground. Your topic doesn't have to be one that no one has ever studied before. Here are a few queries to get your wheels turning in that direction. Don't worry about selecting a specific topic at this time; instead, focus on creating a list of potential topics (Levin, 2012).

- Was there anything you encountered in one of your taught courses that you wanted to learn more about but didn't have the time to fully investigate? When asking a teacher, a question, have you ever been dissatisfied with the response? This is your opportunity to see if you can put one together better. Examine previous test questions to get a few ideas.
- What's going on right now in your area of study? There is typically something new or recent to be researched in the majority of fields. Is there a recent book or article that has fresh ideas whose ramifications you would like to examine? Do the protagonists disagree with one another and voice conflicting opinions? This provides opportunity to investigate how conflicting viewpoints might exist and whether they can be resolved. Has a fresh hypothesis that you could test recently been published? Has a fresh method emerged that you might contrast with or use in addition to older ones? Could you investigate a new product's features and determine whether it is useful?

- Has a fresh data source emerged that provides a wealth of material for analysis? Do you have connections outside of school that could provide you access to resources where you could use the techniques you have learned?
- Has a case study been published that you would find it fascinating to repeat in a different setting so you can compare the results with your own and test (and potentially improve) the methodology?
- Do you have any criticism for any works in your field of study? Do you have any ideas you'd want to develop further? Do you believe you have something to add to the current discussion? Or do you believe you could fill a particular gap?
- Are there any personal experiences you'd want to draw from? This is legal and will undoubtedly help you achieve any originality requirements, but there are pitfalls to watch out for. Instead of just recounting your experience, you must contextualize it in light of previous research and/or theories. Additionally, you must refrain from passing judgment. Limit your findings and discussion to your judgements, and if possible, be as explicit as you can about the principles they are based on. Take the experiences of other people as your subject and use your own to provide insights into their experiences (Levin, 2012).

You must choose from your list of potential subjects after narrowing it down. However, you must first work on each of them before you can proceed. Here is a list of six inquiries to make about each potential topic: You must be able to affirmatively respond to each of the following for the one you ultimately select:

- Is this subject sufficiently specialized?
- Is this topic specific enough?

- Do I have a distinct goal?
- Do I have a workable strategy for this problem?
- Do I have a decent probability of coming up with a compelling conclusion?
- Am I passionate about this topic?

Be specific with your subject It's highly likely that you are thinking of a potential subject in fairly "woolly" terminology, to use academic jargon, if you have identified it in general terms. You must describe it in precise, "concrete" language. Therefore, translate all academic jargon into everyday language and convey your subject in a way that everybody can understand.

Narrow down your topic Setting boundaries for a topic helps to narrow things down. Limiting it to one or two specific case studies, geographical regions, historical eras, organizations, physical phenomena, authors, or socioeconomic groups, for instance, could accomplish this. Remember that depth and breadth must always be traded off; the more general your topic, the shallower your project will necessarily be.

Decide on a certain goal Making your learning goals concerning your subject crystal clear in your thoughts is a necessary step in determining a precise aim.

Find a workable strategy You must have a methodology that will allow you to accomplish your goal, the materials you can use to apply your methodology, and the personal resources (such as time and ability) that you will need in order to identify a workable approach to your subject.

Imagine reaching a fascinating conclusion If you can see, at least broadly, a fascinating conclusion you may reach and can gain confirmation from your supervisor that this conclusion is likely to pique the interest of the examiners, it will be very useful.

Be passionate about your subject Whatever topic you decide on, it's crucial that you are passionate about it. Writing a dissertation requires a lot of effort, so you'll need to be motivated to keep going when things get challenging (Dawson, 2005).

RESEARCH/DEISSERTATION PROPOSAL PREPARATION

In the majority of schools, it is common practice for you to draft a proposal for your project so that it can be evaluated for acceptability. Your project won't even get off the ground if you can't come up with a solid proposal. It can work as a contract between you, your department, and the project manager, but don't expect to be held accountable if you accomplish more than you had originally planned. Many times, as projects develop and you learn more about the subject and the issue you are examining, they take on new directions. This is acceptable as long as your project's scope and quality do not "water down" and you do not go off course from your original goals to the point where it is no longer recognizably yours. If this were the case, you could have to submit a fresh plan and ask for authorization before making any significant changes. Follow these two guiding principles when creating your proposal:

- Adhere to all instructions carefully. The majority of institutions demand certain data, such as the project title, project objectives, resource needs, and so forth. If you don't finish these portions, your proposal can be rejected before it's even been read, for instance, if you didn't receive an academic endorsement or didn't fully finish a crucial section.
- Carefully proofread it, then have someone else review it. Any typos or omissions may appear careless and reflect poorly on your devotion and proposed project.

There are no set requirements for project proposals, however each proposal must have a specific set of details. This content is derived from the explicit and implicit sections of your proposal, which are covered below (Phillips and Johnson, 2022).

Implicit Contents Your proposal should generally cover these five major topics. Although they might not be included clearly in the proposal's structure, these issues need to be covered in the proposal's substance. Those are a brief introduction to the topic current studies in the area, locate a gap, determine how your work fills the gap, and identify the risks and possible remedies.

Explicit Contents The most typical sections that project proposals should have are listed below. Title, Objectives, and Aims anticipated results/deliverables, Keywords, Introduction/background/overview, related studies, the project's kind, Questions and theories for further study Techniques, resource needs, and the project plan.

STRUCTURE OF THE LITERATURE REVIEW

The search and evaluation process for the literature survey was divided into two separate, parallel phases. To improve clarity for planning purposes, it might be acceptable to define the literature survey in this straightforward manner. There are other aspects of a survey besides these two that make up the majority of the labor needed in doing a literature review. This procedure is depicted in much more detail in Figure 2. In this diagram, time is represented by the angular axis, and your subject of interest is represented by the radial axis.

The definition of your literature search, located in the top left quadrant of Figure 2, serves as the starting point for your literature survey. This definition gives you a starting point from which to concentrate on acceptable research material by beginning to define the parameters of your literature search and the themes you are interested in.

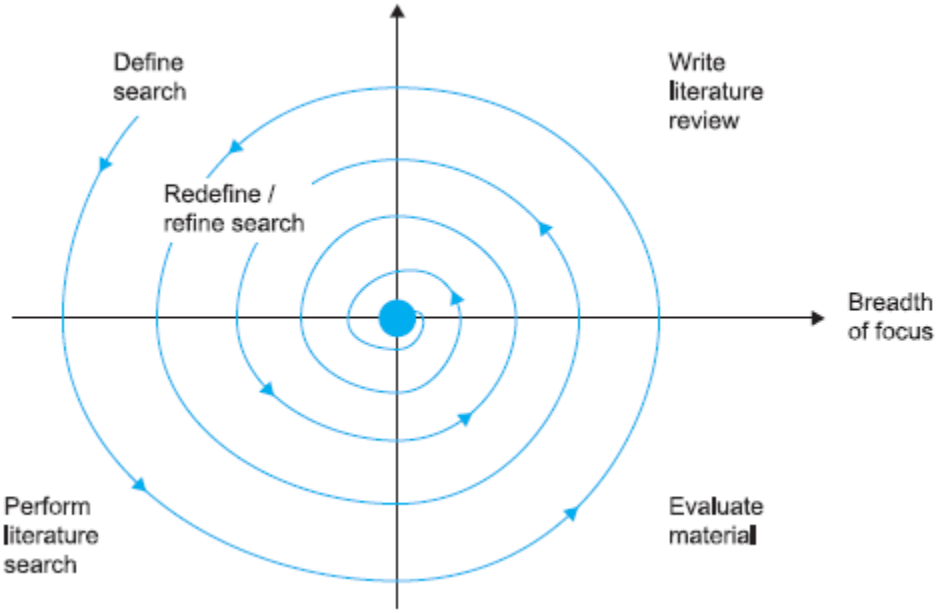

Figure 2 The Literature Survey Process

After making a general (or particular) decision about what you are interested in looking for, continue around the spiral in Figure 2 to start your literature search. You will receive information from your literature search that has to be critically evaluated. This critical analysis will give you a thorough grasp of the subject you have chosen, and it will serve as the foundation for the literature study that comes next.

You will discover that, after going through one cycle of the literature survey process, you are really only getting started. It's possible that you've unearthed more uncertainties and doubts than when you started. You can feel that other concerns you hadn't thought of seem to be having an impact on your project and warrant further research. You can feel that your initial objectives were too general and choose to concentrate on a single topic that fascinates you. Alternately, you can feel that you narrowed your search too much by focusing too much on a single problem.

Your sharpened attention on the particular topic of interest is shown by the "spiraling in" effect in Figure 2. This is not to claim that, as shown in Figure 2, your search brings in results consistently over time. There are moments when your search may get broader, but it will always sharpen its focus on information pertinent to your project. As a result, you will gradually feel drawn away from a wide starting point, such as books, journals, paperwork, news stories, and the like, and toward specialized items pertaining specifically to your topic. As you become more comfortable with the subject matter and your conceptual understanding of the issue area grows, your literature review is therefore viewed to "evolve" over time.

The literature review is not something you can write as a one-off after reading all you can get your hands on, as this iterative process makes clear. It needs to grow over time. Although you will eventually have to cease working on your literature review and move on to the project's primary material, you might discover that you are still making adjustments to it at the very end. This is unavoidable since you need to constantly collecting and analyzing data over the course of your project to maintain a current and fresh grasp of the subject (Berndtsson et al. 2008).

SUMMARY

The most crucial phase of any project is likely the selection of the appropriate project. You can utilize a variety of the methods that have been provided to help you select a project that will work for you. There are two guiding principles to remember when writing a proposal: strictly adhere to all instructions, and proofread it several times. The following information should be included in a project proposal, at the very least implicitly: background, relevant research, gap identification, how your project addresses that gap, risks, and backup plans. Project proposals

must at the very least include the section titles for the project title, goals and objectives, and anticipated results/deliverables.

A literature review will support your project's inclusion in a certain field of research and help you situate it within a larger context. The two primary parts of your literature survey are the literature searches (supported by your capacity to organize the data you gather) and the literature review (which requires a critical understanding of material that you obtain). These actions are carried out repeatedly throughout time and (likely) in tandem with one another.

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