

Steps in researching and evaluating learner support

UNIT 2

Unit overview

In this unit, you will work through the steps of planning and implementing a research project. The term research is used in the broadest sense here, including all types of investigations as discussed in Unit 1. Regardless of whether you are investigating an issue in an exploratory way, experimenting with a new service or delivery method, or evaluating a programme or service that has been in operation for some time, the steps you will follow are very similar. Although you emphasise different areas to suit the purpose of your study, you will follow the same path. Careful planning will give you the best opportunity to get the research results that you need in the most clear and accurate way.

The first step in the process is to clarify your research question and then choose an appropriate method of investigation based on both the purpose of your inquiry and any practical considerations imposed by context. You can then begin to plan each step of the project, involving any other staff who will be involved so that they can help you anticipate any problems in the design and find ways to overcome these. Your design and implementation plan will be refined as you collect information from a variety of sources, including a thorough review of related literature. After you have worked out the details of the design and resource requirements for your project, you can move to the implementation phase, collect, analyse, and interpret your data, report your findings, and if appropriate, disseminate them.

The steps in research are sequential, each dependent on the effectiveness of the preceding ones. There are times when you might cycle back through the steps. For example, you might find something out during the information-gathering phase that leads you to refine your question further, and modify your design. You should, though, try to find as many faults as possible during the planning phase and correct these before you embark on the project so that when you reach the reporting stage, you have the information you set out to discover.

Learning outcomes

When you have worked through this unit, you should be able to:

- 1 Define a research question.

- 2 Choose an appropriate method of inquiry and data gathering strategies.
- 3 Plan the steps involved in the implementation of your research project.
- 4 Gather background information through literature review, consultation with key informants, and checking for existing data.
- 5 Analyse data and interpret findings.
- 6 Report and disseminate research results.

Defining your research question

During the last unit, you considered areas of your work that you would like to investigate, and you identified a research mission: a question to pursue and the reasons why it is important. In this unit, you will take this a step further, starting with defining and refining your research question and carefully reflecting on the intended use of the findings. It is important to formulate your research question in such a way that it directs and anchors your investigation.

For example, you might want to find out about the effectiveness of early intervention strategies by tutors to prevent students dropping out of their first course. The first step is to think carefully about this research question by considering how you will use the results. If you find that the intervention strategies you investigate appear to make a positive difference, what will you do with that information? Can these strategies be implemented? If you plan to work with some colleagues on this question, you will need to discuss the question and intended outcomes. Once you have agreed on what might be most helpful to students and what you can reasonably implement, you can refine your question and state the intended purpose, that is, what you hope to be able to do with the findings.

Perhaps you agree to try an intervention that includes two or three specific strategies. You decide to add a simple assignment that would be completed within two weeks of enrolment to help students assess their readiness for study. The assignment asks them to complete a questionnaire about factors such as time available, family support for their studies, current amount of time spent reading, and so on. There might be a timetabling exercise to help them to plan their study times during the week, balancing these with work and other activities. Tutors would give encouraging feedback on this assignment and provide some specific strategies for how to approach the course with the returned assignment. The research questions might be:

- Does raising student awareness of factors related to completion early in a first ODL course improve completion and retention rates?
- Does supportive contact with a tutor early in a first ODL course improve completion and retention rates?

The intended use of the findings might be:

- ▶ to find out whether this type of intervention strategy has a positive impact on student retention
- ▶ to implement the intervention strategy if it has the desired effect
- ▶ to find ways to improve and streamline the strategy so that it has maximum effectiveness and does not add considerably to tutor workload
- ▶ to use the findings to apply for a grant to further investigate early intervention strategies
- ▶ to report the findings at an forthcoming national conference on distance teaching strategies.

You can see that the intended ways in which the findings will be used are integral to refining the questions. The questions must be asked in such a way as to get the data needed for the intended use.

Activity 1 60 mins



Defining your research question

- 1 Review the project that you completed at the end of Unit 1. Choose one of the areas for investigation that you identified as the one to work with in this unit and review the question(s) you wrote and the rationale for the research.
- 2 Using the example given above, refine your research questions, being clear about exactly what you want to know.
- 3 Write down the ways in which you would like to apply and/or use the findings from this investigation.
- 4 Check your questions against the uses, and see if the questions need further expansion or refinement.
- 5 Choose one or more colleagues (at your institution or another) who have an interest in this area and get their feedback on what you have formulated. Incorporate any useful ideas.

The feedback to this activity is at the end of the unit ▶

Choosing a method of inquiry and strategies for data gathering

There are many different approaches and strategies that can be used for educational investigations. In the previous exercise, you identified your research questions, and the intended use of your data. Next, you will consider the best way to get answers to your questions, and plan your design. If we continue with the example of the early intervention strategy by tutors, you will see that the design of the research project starts to take shape as you formulate your questions. There was obviously a concern about learners leaving courses early, and the questions that were formulated seek data about whether an early intervention strategy might have a positive effect in reducing this problem. Hence, in order to find the answers to the questions as worded, an intervention strategy has to be devised and tried, and the results compared to **not** using the strategy. However, consideration of the dropout issue might have led in other directions. For example, the researcher might have reflected on the problem of early dropout, and formulated questions to try to better understand why learners were leaving courses.

Study tip



Someone who does not have a background in your practice can be helpful in asking naïve but practical questions that will help you to clarify your thinking.

Try explaining to a friend or family member what you want to find out and how you plan to use the information.

Get them to ask you questions about it.

Incorporate any useful ideas into your questions.

Instead of testing an intervention, the inquiry might have involved getting groups of learners together very early in their first course to talk about what enhances their motivation and what barriers they experience. The purpose of this research would be to better understand the experience of the learner early in their first course and see if there are any identifiable patterns that might lead to a decision to dropout.

You can see from these two examples that the purpose of the research, formulation of the research questions, and choice of method of inquiry are very closely linked. The most important consideration for you is whether your questions and your method of inquiry will get the information you need in order to meet your goals. For example, do you want to understand and better describe a phenomenon such as dropout; do you want to test a new intervention for effectiveness in reducing dropout; or do you want to evaluate a current practice to see if it is accomplishing what it is intended to do?

In the first unit of this course, you read about qualitative and quantitative research and did some preliminary thinking about what might be most

appropriate for the areas that you want to research. You were also introduced to the concepts of variables, measurement of variables, description of variables, and exploring relationships among variables. Now that you have clarified a particular research mission and questions, you can see whether qualitative, quantitative, or a combination is most appropriate. In order to do this, you need to:

- ▶ think about the activities involved in your project (e.g. describing, comparing, evaluating, testing)
- ▶ clearly define the variables to be studied
- ▶ plan how to measure them
- ▶ identify what data will be collected by what methods (e.g. surveys, interviews, focus groups, existing data bases).

This will lead you to a more specific set of questions that clearly reflect these activities. Returning to the example of the early intervention strategy, the following questions illustrate this point:

- ▶ What percentage of students complete the new assignment, and how does this compare to the completion of first assignments in other courses?
- ▶ What percentage of students complete the courses using the new strategy, and how does this compare to the completion of other courses?
- ▶ What percentage of those students who complete the courses using the new strategy then register in a subsequent course, and how does that compare to subsequent registrations by students who complete other courses?
- ▶ What do students say when asked directly about the impact of the new strategy on their self-awareness regarding readiness and their level of motivation?
- ▶ What do tutors say about using the new strategy in terms of impact on students and impact on their workload?

From these questions, it is easy to pick out the variables being studied and the methods and strategies to be employed in the research. The following might be a summary description of the design. Key descriptors of the design are in bold text:

Reading



An early intervention strategy will be **tested** by **comparing** a **group receiving the intervention** with a **control group (no intervention) matched on key factors (age, geographical location, gender, and previous educational experience)** and of **first-time distance education students in an undergraduate post-secondary course** on the following **quantifiable variables**: completion of courses, re-registration in a subsequent course, student satisfaction. The **variable** of **student satisfaction** will be **measured** with

an **existing standardised 10-item scale**. The **groups** will also be **compared** on their **responses** to a **survey questionnaire** that will address the **variable** of **perception of readiness** for distance study. This **questionnaire** will be developed by the researcher/research team. Comparison data from the two groups will be **analysed using SPSS software** (a statistical software package). **Qualitative information** will be collected about the variables of **student and tutor reaction** to the strategy. As well as structured questions asking **students to rate themselves on a five-point scale** addressing **readiness**, there will be some **open-ended questions** on the survey inviting more qualitative responses. For example, students will be asked if there is anything that they knew about distance study at the end of the course that they wished they had known at the beginning. **Tutors** will participate in **structured interviews** that will also include some **open-ended questions**. The interviews with tutors will focus on **two variables: tutors' perception of the impact of the strategy on students and impact on their workload**. **No pre-existing framework** will be used to analyse responses to the **open-ended questions**. Rather, these will be **examined by raters looking for common experiences**, and these common experiences, if present, will be **grouped into like categories**.

In this sample description, the main methodology is an experimental design, that is, a comparison of a group that receives an intervention with one that does not. The groups are chosen at random from a larger population of first-time distance learners in an undergraduate post-secondary course but matched on some key factors that have been identified as possibly making a difference to course completion. Both qualitative and quantitative information will be collected through the use of a variety of methods including tracking student progress, surveying participants, and a structured interview with tutors. A variety of measures will be employed, including a standardised scale (student satisfaction), a scale developed specifically for the study (readiness for distance study), and counting of outcomes (course completions, re-registration). The quantitative data obtained from these measures will be analysed with a statistical software package. In addition, a method for analysis of responses to open-ended questions will be devised and employed in order to look for patterns of commonality in the responses. You should be able to begin to see that the design of the study involves thinking ahead to the kind of information you need. In order to ensure that you meet your objectives, you must identify appropriate methods of inquiry, the population and sample to be drawn, variables to be studied, types of measurement and/or description, and approaches to analysis of data.

If your research questions do not lead naturally to a particular method of inquiry and you feel that you do not have enough background to make decisions about method of inquiry, you may want to gather some information before proceeding further. It may be helpful to skip ahead in this course to the section on literature review, and then come back to your research design after doing some preliminary reading. There are a number of considerations in refining your design. Practical factors such as staff time and other required resources will be discussed in the next section. However, first you want to consider what methodology is a best fit with the nature of your research questions.

Activity 2 30 mins**Choosing a method of inquiry**

You can now take your research mission and questions a step further by choosing the method of inquiry to be used.

- 1 Look back at the last activity, and review your research questions and rationale for the investigation.
- 2 Write a summary description similar to the example provided above, clearly identifying your main methodology, the variables to be studied, the way in which you will measure or obtain descriptions, and how you will analyse your data. Do not be concerned with using technical language. Rather, describe what you want to do in your own words.
- 3 As in the example above, highlight the key words in your description – the action words such as **describe**, **compare** or **test**, the specific variables to be examined, and the strategies and tools you will employ.
- 4 Share the description with the colleagues with whom you have been discussing your research interests and ask for feedback and suggestions. Incorporate any new ideas.

The feedback to this activity is at the end of the unit ►

Planning and implementing the research project

Your choice of methods will be affected by contextual factors as well as by the questions you pose. It is important to consider what is practical and possible in your situation. For example, you will want to evaluate the time you and others have for the project, how quickly you need the information you are seeking, the expertise of those who will help you, whether you will need to train staff (e.g. in interview techniques), what language(s) you will need to use and whether this will require the translation of materials or hiring extra staff to do interviews, what extra resources might be required (e.g. paper, postage, printing, extra staff for data input), what technology you might have available for data collection and analysis (computer software), and what existing information you have as a starting point (e.g. learner database).

Study tip

Try to find someone with research experience to give you some feedback on your design.

The more input you have at this stage, the better.

The first step in planning a research project is to carefully identify:

- ▶ all the tasks that it contains
- ▶ how long each task will take
- ▶ the order in which the tasks need to be done.

From this you can develop timelines, which describe each phase in enough detail so that you can see what will be involved.

In this way, you can evaluate feasibility of the plan, and anticipate any difficulties. A first draft of a plan for the early intervention strategy might look something like Figure 1, and would be continually revised with greater detail as the information becomes available.

Figure 1 Project timeline

February - March	Gather background information: literature review; consultation; checking existing student information for baseline data on completions, re-registration statistics, and student characteristics.
April	Finalise plan and resources required (will require decision about the number of students, tutors, courses to be involved; finalise measures to be used; data collection and analysis methods).
May - June	Develop intervention strategy (assignment, instructions and training for tutors); develop questionnaires for interviews.
June	Obtain any approvals necessary (e.g. Ethics Committee if applicable).
June - July	Choose courses that will incorporate the intervention; pilot test strategy with small group of tutors and potential learners; make any revisions to materials; print final version of assignment and instructions for tutors/staff.
July - Aug	Tutor and staff training (inclusion of intervention strategy in course packages, how to give feedback, answering student questions, data gathering and recording).
Sept - November	Include intervention strategy with chosen courses; tutors give feedback as per training.
Sept - December	Track students who are part of the project and a comparable group of students who do not have the intervention strategy.
November - December	Interview/survey a sample of students and tutors who took participated in the project (including some students who did not complete their courses).
January	Analyse and interpret data.
February - March	Prepare report on results including recommendations for further action; disseminate results.
March	Presentation of results to administration; decisions about further development and full implementation.
March - April	Prepare conference presentation; prepare grant proposal for further research.
May	Conference presentation.
June - July	Revisions to intervention strategy; tutor and staff training; development of evaluation plan; consideration of wider publication of findings.
September	Full implementation of early intervention strategy for all students.
December - January	Evaluation; further revision.

Evaluate the appropriateness of your methods, etc

As you develop your plan, you will be able to evaluate the appropriateness of your choice of methods and strategies for data collection. For example, if your students and tutors are widely dispersed, it may not be possible to interview them all. A survey using a questionnaire may be a better choice. You will also

see how much of your own time will be taken up by the project, and whether you need to scale down or include more staff in helping you.

Setting out the plan in detail also gives you the opportunity to evaluate the appropriateness and feasibility of the method (in this case, an experiment comparing groups) and measures you have chosen (completion rates, re-registration rates) for your inquiry. Another important step is to review and evaluate the adequacy of existing student record information. Some educational providers keep student information in such a way that it can be easily accessed by some but not others.

The basic characteristics of the students

Do you know the existing completion rates for courses? How difficult is it to get this information? If information is not available, is it possible for you to collect data so that you have information about student characteristics, completion rates, and re-registration rates for those students who participate in the study as well as for a comparable sample? In other words, when the project is complete, will you be able to describe the basic characteristics of the students who participated (gender, age, geographical location, previous educational experience), and say that they are not different in any significant way from other students? You want to make sure that any differences you find between the groups on your chosen measures (completion rates, re-registration rates) are most probably due to your intervention and not other variables.

Ethical considerations

During the planning phase, any ethical considerations should be given attention. This includes a wide range of issues but the most important ones are:

- ▶ putting safeguards in place to maintain confidentiality (e.g. making sure that no identifying information is attached to interview or questionnaire data)
- ▶ ensuring that there are no adverse effects for participants (e.g. including loss of dignity)
- ▶ not withholding information from participants unnecessarily, and
- ▶ ensuring that there is no sense of coercion for potential participants.

Many educational providers have an ethics committee that reviews and approves research proposals. If this is the case in your context, you should make sure that you allow sufficient time for this process. If there is no ethics committee, you can consult with other researchers and reference materials such as ethical guidelines for educational research to ensure that your project falls within ethical standards.

Another reason for carefully planning and mapping out your project along specific timelines is that you can then better manage the project during the implementation phase. The timelines and activities plan will be helpful in

keeping you on schedule and keeping everyone involved informed. It is important to keep in mind that problems can occur in the best planned projects because of unforeseen or changed circumstances. However, if problems arise, you can more easily get back on track if you have a plan to work with and revise.

Activity 3 60 mins



Planning and describing your project

Part 1: Review

- a Review the questions and reasons for inquiry that you developed in the last activity and think about how you want to approach the investigation.
- b Do you need to explore an issue to better understand it (interview learners, survey tutors), develop an experiment to test an intervention, or evaluate a current activity?

Part 2: Plan

Once you have a good idea of what you would like to do in order to find answers to your research questions, do the following:

- a Write down a plan similar to the one in Figure 1. Be only as detailed as you can be at this stage – you will be gathering information later that will help you to fill in your plan. Try to be realistic about timelines but keep in mind that these may have to change as information becomes available. For example, it may be important to consider enrolment patterns and when sufficient numbers of students will be available for the study.
- b As you work through your plan, begin to identify the resources needed and make notes about these.
- c Ask your colleagues for feedback on your plan. (If your plan involves the cooperation of specific staff such as advisors, tutors, or those who put together and distribute course packages, make sure to include them in your consultation.)
- d Revise your plan as appropriate.
- e If developing the plan raises specific questions, try to get answers to these. (e.g. What existing information do we have about students?)

The feedback to this activity is at the end of the unit ►

Reviewing your plan

The following will help you to review your plan.

Hadley and Mitchell (1995, 138-139), in their advice to practitioner-researchers, suggest that you should be able to answer 'Yes' to the following questions before starting your research project:

- Is each (research) question inherently researchable?

- ▶ Is the project technically feasible?
- ▶ Is the project fiscally and administratively feasible?
- ▶ Is the project fiscally justifiable?
- ▶ Is the project legally and ethically feasible?
- ▶ Is the project consistent with other plans of the researcher and any co-workers whose help may be required?
- ▶ Will the researcher have an appropriate outlet for reporting the project when it is completed?
- ▶ Will answering the research questions satisfactorily fulfil other aspects of the project's mission?

Gathering background information

By now, you will have a very good idea of the area you want to investigate, how you want to investigate it and when. Before you proceed further, it is time to learn as much as you can about your area of interest so that your plan and choices are informed ones. So far, you will have talked with colleagues but you may now want to consult them (and other staff) more formally.

In the case of the early intervention strategy, for example, you could bring a group of tutors together to brainstorm ideas and help you anticipate any difficulties with your plan. You will also want to gather any existing information about your students (e.g. age, gender, previous educational experience, geographical location) that will inform the design of the intervention strategy. For example, you will want to look at any information you have about comparison profiles between those who dropout and those who persist to see if there is any information that might be helpful in designing the intervention.

One of the most important steps in information gathering for your research project is to do an extensive review of the relevant literature. In most all cases, a learning support practitioner chooses to research an area with which they have some familiarity. Usually they have already read about the topic, as well as dealing with it in their daily practice. Hence, a review of the literature just means delving more deeply into the subject and reading purposefully with regard to the planned project. The following section of the course will help you to do this.

Doing a literature review

A detailed literature review is usually initiated early in the conception of the project, and continues well into the planning phase. During the project, a researcher may continue to go back to the literature as questions arise and as new information becomes available.

It will be important to do some reading on both the subject you are researching and on the design of the project (e.g. how to do interviews and surveys; carrying out an experiment to test an intervention), including tools to measure the variables you choose (e.g. student satisfaction scales; attitude scales) if you are using a design that requires this. As you read, you should look for similar kinds of projects. You may be able to learn from and build on someone else's research, avoiding their mistakes, and taking the best from their design. Successful replication of research in a different context is a good way to test reliability and strengthen an existing theory. Further, other researchers may suggest related questions that turned up from their studies that you may be able to address in yours. Knowing the literature well will help immensely with your investigation – you will gain insight into your topic, better understand what you are trying to discover, and feel confident about describing your research in relation to the field of practice.

There are a variety of sources of literature: books, print journals, conference proceedings, special reports from organisations and institutions, government publications, and web sources. Each of these is not only a good source of information but a source for further citations on a particular topic. The researcher is like a detective – one source takes her or him to the next. An article that is not particularly helpful may have some references that lead to useful sources. Generally, it is a good idea to start with a literature search. If you have not done this before, or it has been a long time since you have done one, you might want to consult with a librarian on the latest sources and techniques. Learning how to use **key words** to search and what tools and sources are available in your context is important. If you have internet access, you will find that there are now many online distance education journals and other web-based sources of information. At the end of this unit, you will find a list of these with the website addresses. Web-based information is highly accessible but also poses some challenges to the researcher. Anyone can create a website and publish articles and papers. Hence, not all information found on the web has had the same scrutiny as peer-reviewed journals. A librarian can help with sorting through the information you find on online, so that over time you learn to weed out what is useful from what is not.

Usually a review of the literature will cover more sources than are eventually used. However, it is important to keep accurate records of all sources consulted. What may appear to be irrelevant at one stage of the project might become quite relevant at another and you will be glad that you can find the reference and go back to the source.

Keeping records and managing information efficiently

Researchers develop their own techniques for keeping track of the sources and information. Each person has their preferred system for summarizing, evaluating, and storing references. You may already have designed an

information management system for keeping track of articles and books that you consult regularly in the course of practice. If not, one of the most helpful tools that you can develop is some form of annotated bibliography kept by subject area.

The annotated bibliography

An annotated bibliography consists of short summaries (annotations) for a set of readings on a particular topic. The summaries should start with the reference in a standardised format (which you can later use as part of a bibliography if required). Generally, in education and social sciences, the *Publication Manual of the American Psychological Association* is used as the guide for standardised referencing but if there is another method that is more commonly used in your context, you may choose to use that instead. A summary of the reading follows the reference, and usually includes the purpose of the piece, the main points included in the content, and any evaluative comments such as ‘although the article is helpful with suggestions for practitioners, the research design is flawed in several ways’.

The literature review provides you with a knowledge base on which to develop your research project, and the annotated bibliography that forms a record of your review will become an efficient reference tool for you. For example, you might divide your bibliography into topic sections according to your needs and interests, for example, using categories such as dropout studies, methodology, tutoring strategies, orientation programmes, technology use, and so on. You can then arrange the annotations alphabetically by author within these categories. You should be able to quickly scan your annotations to find a particular reference when you are writing or want to check back on a particular piece of writing. If there is a quote that is particularly meaningful that you record, make sure that you also record the page numbers so that if you want to use it, you have the correct reference. A bibliography that is kept up to date as you read is easy to create and results in a comprehensive research tool that can save hours of time.

The way in which you choose to keep your annotated bibliography is up to you. Some practitioners find that the easiest way to keep their bibliography is on index cards that are colour coded for topic. Others find this system cumbersome and prefer to record the annotations on a word processor, and save them to disks, again organizing them by subject area and alphabetically. Others may do the latter but print out the bibliography periodically and keep it in a binder for easy reference on their desk rather than having to have access to a computer. You can experiment to find the best method for you. Some sample annotations are provided in the ‘Reading’ section below.

Reading



Examples of annotations

Baxter Magolda, M. 1992 *Knowing and researching in COLLEGE: gender related patterns in students' intellectual development*, San Francisco, CA.: Jossey-Bass

In a longitudinal study spanning five years, the author follows the intellectual growth of college students from their freshman year through the year following graduation. Through yearly interviews, she examines their individual experiences of the learning process, and describes gender-related patterns that affect the way they develop. Charts are provided describing four stages of intellectual development, and these are helpful references for application of her model. In the second part of the book, she uses her findings to design teaching strategies which complement and support intellectual growth. The incorporation of interview data lends validity to the author's findings, but for the reader it becomes somewhat tedious reading. Nevertheless, the book adds significantly to the literature on the nature of learning and effective learning environments.

Glennie, J. 1996 'Towards learner-centred distance education in the changing South African context', in R. Mills and A. Tait (eds.), *Supporting the learner in open and distance learning* (pp 19-33). London, UK: Pitman

This insightful report describes the context and problems of distance education in post-apartheid South Africa. The chapter focuses on redress of educational inequalities and deployment of resources according to the principle of equity. Open and distance learning is viewed as a primary means to provide universal education and training with the objectives of empowerment and enabling lifelong learning and self-directedness of the citizenry. The author addresses current conditions, strategies that ensure learner-centred distance education, examples of progress, and challenges to be faced in the future. She concludes that collaboration among ODL institutions and other key organisations will be needed in order to overcome the latter.

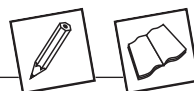
McLoughlin, C. and Marshall, L. 2000 'Scaffolding: a model for learner support in an online teaching environment', in A. Hermann and M. Kulski (eds.), *Flexible futures in tertiary teaching: proceedings of the 9th Annual Teaching Learning Forum*, 2-4 February. Perth: Curtin University of Technology, retrieved September 3, 2004 from <http://lsn.curtin.edu.au/tlf/tlf2000/mcloughlin2.html>

This paper offers a rationale and strategies for making learning how to learn online an essential part of learner support for novice distance learners. The authors describe scaffolding, that is, ensuring that learners have opportunities to gain skills that allow them to reach new levels of competence in learning that otherwise would be just out of their reach. These skills include articulation, self-regulation, building a repertoire of learning strategies, and self evaluation. The authors describe how these skills can be developed through course design and learner support strategies by introducing them in planned stages, building from a base of competence at each level, in a way that the learner would not be able to do by working independently. They suggest that successful scaffolding entails engaging the learner actively and providing help until it is no longer necessary. Although the strategies described were applied in the context of Australian tertiary education for novice online learners from indigenous populations, the paper has broad application for all types of distance education in a variety of contexts.

O'Rourke, J. 1995 'A piece of the jigsaw: student advising in distance education'. In A. Tait (ed.), *Collected conference papers, 6th Cambridge International Conference on Open and Distance Learning*, (pp 136-145). Cambridge, UK: The Open University

This conference paper examines the role of student advising through the anecdotal reflections of two women who have served in a student advising role for a total of more than fifty years. The author distinguishes between student support and student advising. In her view, student support encompasses student advising as well as tutoring, marking students' assignments and examinations, and academic and personal counselling. Student advising, on the other, includes helping students with academic and administrative issues, and with balancing their various family, life, work, and academic responsibilities. In discussions with the two former student advisors, the author focuses on learners' needs for contact, clarity, advocacy, and a pilot to help them find direction, and emphasises the importance of human contact to help alleviate the distance learners' feelings of isolation.

Activity 4 120 mins



Starting an annotated bibliography

This activity is intended to help you start an annotated bibliography.

- 1 Choose three sources of information (e.g. a journal article, a book chapter, a report) that you think will be helpful as background information for your project, and read these. You might try examining a number of the online journals listed at the end of this unit to find an article of interest.
- 2 Create an annotation for each one, including the elements recommended (reference information, purpose of the reading, main points, and an evaluative statement) following the style of the examples below.
- 3 Set up a system for recording your annotations (e.g. index cards, computer disks, printouts in binder).

The feedback to this activity is at the end of the unit ►

Writing the report

Once you have completed your project, you will want to record what you have done in a report. There is a fairly standard format for this that includes certain elements such as a description of the study, methodology, findings, discussions of findings, and conclusions and recommendations. This format can be customised depending upon the audience and purpose. For example, to persuade administrators that funding should be provided for a new service, you will probably want to concentrate on developing a good executive summary and focused recommendations with a rationale for each. By contrast, a manuscript for publication in a journal should include more detailed explanation of research design and methodology, and should address where the study fits within the existing literature.

Study tip

Skim your annotated bibliography periodically to maintain your familiarity with what you have read. The annotations will bring the original sources back to mind. As you develop your annotated bibliography, you will start to recognise sources that you will probably return to more frequently than others –you may want to keep print copies of these at hand for easy reference.

Elements of the report

The elements of a research report include the following. As noted above, reports should be customised for a particular audience and purpose. Elements can be combined and/or given less focus, while others can be highlighted.

- ▶ a **title** that is descriptive of the study
- ▶ an **abstract** – a short summary providing brief description of the study and findings
- ▶ an **introduction** that gives some helpful background such as the context and rationale for doing the study, the major issues to be addressed, and the purpose of the
- ▶ a **literature review** that summarises the relevant literature by topic and relates it to the study
- ▶ the **study objectives** and if there is one, the **research hypothesis**
- ▶ a **description of the research method** including research setting and participants, procedures, variables and measures, and data analysis methods
- ▶ the **results** or **findings**
- ▶ a **discussion**, which interprets the results and notes particular strengths, weakness, and limitations (e.g. applicability to other contexts)
- ▶ **conclusions** and **recommendations**
- ▶ **references**
- ▶ **appendices** that include items such as extensive statistical tables or items used in the study such as questionnaires, interview scripts, sample correspondence, measurement tools, training materials, and instructions to staff.

One of the best ways to learn how to write a report is by looking at various examples. You can find reports in journals or by looking in the library or on the internet. Try to find a variety of examples, produced for different audiences, and find ones that fit your purpose.

Most sections of a research report are fairly straightforward. You need to make sure that you accurately and objectively report (a) the way in which the study was carried out and (b) the findings. The discussion section of the

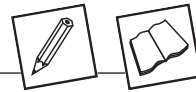
report is probably the most challenging and most important. It gives you the opportunity to interpret your results for readers, showing the significance and implications of the findings. In this section, you can explain why the results occurred, put them into the context of the existing literature, and make theoretical interpretations. Thoughtful analysis highlights interesting and important findings. Further, any recommendations will be made that much more powerful when they emerge logically from your discussion of the findings. The activity below is designed to give you some practice with discussion of results.

Publication of the report

As you carry out your literature review, you will become familiar with the journals that regularly publish on the topics that are of special interest to you. The idea of submitting an article for publication may seem a bit daunting but you can break the process down into steps, just as you did for your project. If you decide that you would like to submit the report of your study for publication, the first step is to choose a journal that publishes on your topic, and has articles similar to the one you would like to submit. There are a number of distance education journals available online now (see listing at the end of this unit), and you might start by exploring these for articles of interest. For example, *IRRODL* (International Review of Research in Open and Distance Learning; <http://www.irrodl.org/>) published a special issue on learner support in the spring of 2003.

For each journal, as you review articles, make a note of the style, format, and usual length of pieces they use and how these compare to what you have in mind. There are always length limitations on articles, and you will probably have to summarise sections of your report such as the literature review in order to adhere to guidelines. Tables and graphs are often used in journal articles to summarise large amounts of information efficiently. Research textbooks are a good reference for tips on how to prepare these so that they are informative and easy to read and interpret.

Journals publish their format guidelines for articles and submission policies, and the next step is to obtain and review these. You might also ask for advice from someone you know that has published articles. Keep in mind that journal editors and reviewers are usually looking for articles that make a contribution to the field of knowledge, have a sound research design, display objectivity in reporting of results, and are written in clear and easy to understand language. You can follow the format that you see in the journals of your choice, and when you have a draft ready of your own manuscript, you can ask colleagues to review it and give you feedback before submission.

Activity 5 60 mins**Interpreting the results of a study**

This exercise is intended to help you practice interpreting research findings by looking at studies that have already been carried out.

- 1 Locate an article that describes a research study on a topic with which you have some familiarity, either through practice or study. Choose one with a fairly straightforward research design by skimming through the methodology section.
- 2 Do not read the discussion, conclusion or any recommendations. Rather, cover these up or if the article can be copied, remove them temporarily.
- 3 Carefully read the report including the findings (but not the discussion or conclusions).
- 4 Jot down notes of how you would interpret the findings. Remember to relate the findings back to the research questions and the purpose of the study, place them in the context of any related literature that is mentioned or with which you are familiar, and make any theoretical connections. State any conclusions.
- 5 List any recommendations for practice that logically emerge from your interpretation.
- 5 Read the interpretation and conclusion by the author(s).
- 7 Compare your interpretation to theirs. What are the similarities and differences? Do not assume that any differences can be attributed to your mistakes. Think about the reasons for the differences. Perhaps the author was limited by space. Perhaps you know information (e.g. about how the findings apply in your particular context) that the author did not.

The feedback to this activity is at the end of the unit ►

Key points

The following list of questions for consideration in reporting on research projects provides a useful summary of the issues raised in this section:

- Why do original decisions (from the planning phase) about the reporting process often need revisiting after the results have been interpreted?
- What portions of a project's process should be expressed in writing?
- What points must a researcher have in mind to make sound decisions about the reporting process?
- Why must a researcher have a clear idea of who a report's consumers will be?
- Why do researchers sometimes need to prepare more than one report of a project's results?
- What content should all research reports include?

- ▶ What information should reports addressed to other researchers ideally include?
- ▶ What plan of organisation for research reports is prescribed by the *Publication Manual of the American Psychological Association*?
- ▶ After constructing a table, what can beginning researchers do to ensure that the table is understandable to readers?
- ▶ What kinds of graphs are typically used in counselling research reports?
- ▶ What principles of language and writing style guide all good research reporting?

Hadley and Smith (1995).

Unit summary

In this second unit of the course, you covered the steps involved in a research project: defining and refining your question, choosing an appropriate method and strategies for the inquiry, making a plan for implementation, gathering background information, and writing the final report. The steps are sequential, with each one building a base for the next. However, as you have seen, it is sometimes necessary to cycle back, make adjustments or gather further information, and then move forward again. A detailed and practical plan can help you stay on track and have the best opportunity for success with your project.

Study tip



The best way to prepare for writing your final report is to keep notes throughout the project, organizing these as you do the summaries from your literature review. For example, document any unexpected circumstances that affect the methodology, and carefully record any ideas about interpretation of results that may occur to you as you are collecting data.

Project task



Planning an investigation

You have done a great deal of work as part of this unit, and the end of unit project is simply to pull this work together, organise it, and refine it so that you have the following elements in useable format:

- ▶ clearly stated research questions
- ▶ a rationale statement that identifies the purpose of the study and what you plan to do with the findings

- ▶ your method of inquiry with variables, data-gathering strategies, and measures defined
 - ▶ a detailed plan for implementation set out along timelines and list of resource requirements
 - ▶ the beginning of your literature search with a plan for completion
 - ▶ a list of who needs to receive a final report and for what purpose.
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References

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American Psychological Association. 2001 *Publication manual* (5th edition), Washington: American Psychological Association

Various authors. 2003 'Special theme issue – student support' *International Review of Research in Open and Distance Learning* 4, 1 at <http://www.irrodl.org/content/v4.1/index.html>

Bibliography of web-based sources for distance education

Peer reviewed journals available online (free)

Title	URL
The Journal of Distance Education (Canadian Association of Distance Education)	http://cade.athabascau.ca/ - sort by author, title or date or http://www.cade-aced.ca/en_pub.php - search by author, title or year
Online Journal of Distance Learning Administration	http://www.westga.edu/~distance/jmain11.html
The Journal of Library Services for Distance Education	http://www.westga.edu/~library/jlsde/
EURODL (European Journal of Open and Distance Learning)	http://www.eurodl.org/
International Review of Research in Open and Distance Learning	http://www.irrodl.org/
The USDLA Journal (United States Distance Learning Association)	http://www.usdla.org/html/resources/usdlaJournal/currentIssues.htm
EDUCAUSE Quarterly	http://www.educause.edu/pub/eq/eq.html
The Technology Source	http://ts.mivu.org/default.asp
Australian Journal of Educational Technology	http://www.ascilite.org.au/ajet/ajet.html
Educational Technology Review (AACE—Association for the Advancement of Computing in Education)	http://www.aace.org/pubs/etr/
The Turkish Online Journal of Distance Education (TOJDE)- Anadolu University TURKEY	http://tojde.anadolu.edu.tr/
Interactive Educational Multimedia (Barcelona University)	http://www.ub.es/multimedia/iem/
International Journal of Educational Technology	http://www.outreach.uiuc.edu/ijet/issues.html
Educational Technology & Society	http://ifets.ieee.org/periodical/
Journal of Asynchronous Learning Networks	http://www.aln.org/alnweb/journal/jaln.htm
The Canadian Journal of Learning and Technology	http://www.cjlt.ca/archivedissues.html

Non-peer reviewed journals available online (free)

EDUCAUSE Review	http://www.educause.edu/pub/er/erm.html
Sloan-C View	http://www.sloan-c.org/publications/view/index.asp
TechKnowLogia - Distance Education and International Development	http://www.techknowlogia.org/

Feedback to selected activities

Feedback to Activity 1

Clearly stated research questions form an important first step for any project. Thinking about how you will use the data puts the research in a practical context, and helps you to refine the questions to fit the purpose. Often, researchers (even experienced ones) get to the data analysis stage, and think, 'If I had only asked this, I would be able to...' Spending time reflecting what it is about your practice that you would like to improve, or how you would like to better help students, or what you would like to be able to explain to yourself or others will help you to formulate questions that will give you the best opportunity to get the answers you want. Discussing your thoughts with colleagues helps you to deepen this reflective process. Using a team approach not only gives you a better opportunity to examine research questions from a variety of perspectives but also enhances enthusiasm for the project as the questions and possibilities for gaining understanding become clearer. Intrinsic motivation is a key ingredient to success in research. During an investigation, it may seem as though a project requires too much work or it may become frustrating if circumstances change and you have to continually adjust your research plan. At these times, your personal enthusiasm for the research will be very important. As you work through the process of identifying areas for investigation, are you aware of becoming more confident and enthusiastic?

Feedback to Activity 2

The description that you develop for your research project will continue to evolve as you work through practical considerations (addressed in the next section of this unit) and then turn to the literature for background, theory, and similar studies. Even after a project is in progress, it is often necessary to make changes. However, being clear about your questions, design, and methodology will make it much easier to evaluate the impact of unanticipated changes in circumstances on the project (e.g. low response rates on a survey, poor attendance at focus groups, a mistake by staff in the procedures) and make appropriate adjustments.

Feedback to Activity 3

Making a plan for a research project can feel a bit overwhelming at this stage. Your project may begin to look very big and may need to be revised in order to make it more feasible. On the other hand, building a plan can also be encouraging. You will start to see that carrying out research is possible – you can break down the project into small manageable steps, troubleshoot well ahead of implementation, and gain the cooperation and enthusiasm of your colleagues.

Feedback to Activity 4

As you develop a better understanding of your area of research by reading and consulting with others, your plan for your project will become clearer and your confidence will grow. You will find yourself revising some of your ideas, tightening up the design, and enthusiastically discussing your plans with others.

Feedback to Activity 5

You can repeat this activity as you read research articles for a literature review and discuss them with colleagues, carefully reflecting on the interpretation of findings, the logic used, and the recommendations, and whether you might have done anything differently. Through this practice, you will develop the skills to interpret and critically analyse your own and the research of others.

In practitioner research, we appreciate studies that inform our work. Disseminating the findings from your study consists of selecting the most important information from all steps of the project and expressing them clearly and appropriately for each of your audiences. The discussion of your results should organise and link the ideas that emerge from the findings into a clear analysis that logically leads to conclusions and recommendations for practice.
