



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

BA ANIMATION & VFX
BA COMPUTER GAMES DESIGN

L6 Independent Project

Research Skills & Advice for Students



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Introduction



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Introduction

Research skills refer to your ability to investigate a certain topic or issue with the aim of **discovering new information** or **drawing new conclusions**.

When it comes to the world of work, **research skills are highly sought after by employers** because they are not only relevant to research-orientated roles, they are **transferrable** across many different ones. [1]



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Introduction

Research is a key element of **critical thinking** – one of the most valuable skills you can develop to future-proof your career.

When you need to evaluate something, solve a problem, find a new direction or make a decision, **you can't always simply rely on the information in front of you** and what you already know; you often need additional knowledge and you certainly need **perspective**. [1]



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Formulating A Hypothesis



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Formulating a Hypothesis

In science, a **hypothesis** is an idea or explanation that you then test through study and experimentation. Outside science, a theory or guess can also be called a hypothesis. [2]

You will need to define a hypothesis / research question for your proposal.

A good research hypothesis involves more effort than just a guess. In particular, your hypothesis may begin with a question that could be further explored through background research. [3]



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Formulating a Hypothesis

To help you formulate a promising research hypothesis, you should ask yourself the following questions: [3]

- 1. Is the language clear and focused?**
- 2. What is the relationship between your hypothesis and your research topic?**
- 3. Is your hypothesis testable? If yes, then how?**
- 4. What are the possible explanations that you might want to explore?**
- 5. Is it relevant and specific to the research question or problem?**



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Four steps for Good Research



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UWTSD's e-learning Hub states that **there are four steps to conducting good research**. This can be utilised by students to help make your initial investigation easier and your work more informed by literature and facts.

These four steps are as follows:

1) Define Your Objective

2) Evaluate as you Collate

3) Analyse Your Findings

4) Form Your Conclusion



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1) Define Your Objective

Be clear about what you are trying to achieve and keep that in mind as you start digging.

- **Are you looking for alternative solutions?**
- **Are you looking for evidence to support a position?**
- **Are you building a framework of reference?**
- **Do you need reassurance about a worrisome point?**
- **What questions do you have that you can't answer yet?**

Setting a clear research objective will keep you focussed as you start collating information. This is often referred to as your **hypothesis**.



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2) Evaluate as you collate

You want to get a broad perspective on your objective but there's a lot of information out there and the **reliability and relevance of it may be questionable**.

It is important to keep **refining your search terms** to get closer to what you're looking for and constantly assess the **relevance** to your objective. When you find something that surprises you or something that satisfies your presuppositions, challenge it and look for corroborating evidence from a **different source**.

Wikipedia, for example, is often a useful starting point but **you would lose credibility to quote it as your source** in any work environment.



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3) Analyse your findings

Once you've collated your most reliable, relevant information you need to join the dots: look for the patterns in what you've found.

- **What repeatedly stands out?**
- **What can you interpret from the data?**
- **How does any of it help your research objective?**



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4) Form Your Conclusion

With your objective clear in your mind, **summarise your findings, formulate your new ideas, make your recommendations or present your solution.**

Providing **references and source material** for your information (in a references and bibliography section) are a significant part of this process so make sure you document your findings and keep the references for all the information you find. This needs to be presented as part of your academic documentation for the Independent Project.



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- References** = Any sources you have actively used and included in your work. These need to follow **IEEE formatting** in SoAC
- Bibliography** = All sources you have looked at through the course of the study, whether included in your work or not. (IEEE format also required here)
- Appendices** = Information that is considered ‘non-essential’ for the research narrative but **related** to your study (e.g. copies of your survey)



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Sample groups and Questionnaires/Surveys



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As part of your research, you may need to gather data from test users or participants. This is often conducted through **questionnaires, surveys or interviews**.

If so, please remember:

- There may be **ethical considerations** to factor in, especially if you are testing how people react to stimuli or experiences – ask your supervision tutor for advice
- The University has documentation and a Code of Ethics that can be consulted. You may also need to draft consent documentation for research participants and have this approved by the institution



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As part of your research, you may need to gather data from test users or participants. This is often conducted through **questionnaires, surveys or interviews**.

If so, please remember:

- Sample groups need to be established EARLY – **do not ask people to answer a questionnaire at short notice**. Most people will not respond in a timely fashion
- Small sample groups often **do not provide valuable or useful data**. Asking 2 people for feedback is far less academically robust than 20, or 30 and indicates you do not understand the research process required for academic studies. The appropriate size of sample group depends on the scope and theme of your research – talk to your supervisor for advice



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As part of your research, you may need to gather data from test users or participants. This is often conducted through **questionnaires, surveys or interviews**.

If so, please remember:

- Questionnaires, interviews, surveys, etc. need to be structured and executed in a particular fashion. **This is a research topic of its own** and you need to conduct research on this as well as your subject matter!
- All of the above also need to be **tested and refined BEFORE conducting research** – there is plenty of information on research interviews, questionnaire development and conducting surveys online and in the **library**. Make use of this to improve your understanding and the quality / validity of your work



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General Advice for Independent Project



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- Use **Version Control** (v0.1, v0.2, v0.3 etc) when saving work – this allows you to ‘roll back’ to earlier versions if you accidentally lose or overwrite information [4]
- Create **regular backups** regularly throughout the term (e.g. 1 per week / per major update or change)
- **Meet with your Supervision tutor regularly**, even if you have no new work to show – communication is important!
- Write **Introductions and conclusions *after* the main body chapters** – the document will likely exist as separate chunks of related information for a while. Editing can take place around February/March and the final draft can be produced around March/April (provided you’ve kept up to date with your work!)



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Remember:

**SAVE YOUR WORK
AND SAVE IT OFTEN!**

If your work isn't backed up in at least three separate physical/digital locations –
It is not properly backed up at all!



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Any questions?



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