

Student's Misconceptions of Research

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What is research really like? Is it as the general public think; that researchers do experiments with a test-tube in a laboratory and they obtain innovative results by accident? People from different backgrounds have a diverse range of ideas and views regarding the conceptions of research. What do students think? Their preconceived beliefs very likely influence their learning outcome and thus shape their research experience. From our interviews, research supervisors highlighted various misconceptions from their students about research, which may have affected their approaches to learning and research attitude. Under the constraint of a normative study period of three years, having an accurate view of research from an early stage may be beneficial.

Incremental and innovative research

Most supervisors interviewed agreed that research is exploratory in nature and involves the creation of new knowledge. This 'innovative' aspect indicates the importance of originality in research. As stated in the Code of Practice for research postgraduate students at CUHK, a qualified research graduate is expected to "*formulate original problems, and originate and develop solution methodologies*"¹.

However, it is not surprising that some research students are likely to engage in incremental research, which is to "*refine and extend an established research*" without a change in the core concepts/design². This kind of research is also regarded as "*doing better what we already do,*"³ which may contribute little to our current understanding. Incremental research may have its values yet it should not be the ultimate goal for a good researcher who should value innovative research more. Professor Huang Jianwei from the Faculty of Engineering confirmed that, "You need to produce world-class research that no one on earth has ever done before. This is the exact definition of research." The ultimate goal as a PhD student is not the completion of your project within the normative period, but to explore the unknown and bring a new understanding on current phenomena, which stimulates debates and extends the field further.

Professor Huang also said that research students are expected to produce significant and novel research and to be leaders rather than followers. Some supervisors realized that students may have a problem in understanding these criteria for conducting good research since they are abstract⁴. Several supervisors interviewed agreed, however, that having courage⁵ as well as an attitude of openness and sound knowledge of the field are crucial for a successful researcher.

¹ Code of Practice: Research Postgraduate Studies, Graduate School, CUHK. August 2013.

² Henderson and Clark (1990)

³ Norman and Verganti (2012)

⁴ ["this is the ill-defined criteria...what do you mean significant enough?...professors will have different standards"- Huang]

⁵ ["I hope there is new discovery...you have to be brave...even the new explanation may not be comprehensive, as long as results/discussions do not contract with your observations, it is acceptable" - Yu]

Importance of questioning

Professor Dora Lau from the Faculty of Business Administration stressed the importance of questioning. Supervisors commonly agreed that a significant research project will make a contribution both to the field and to society. Professor Lau suggested that one way to achieve this, is to formulate a good research question, which will lead to heated debates and make us reflect on our underlying assumptions. Sometimes even a 'naïve' question may challenge our pre-conceived beliefs. However, students may put more effort in to acquiring knowledge or perfecting a research tool, which are both more concrete, than learning to formulate a good research question. While acquiring knowledge and skills are essential, students are also suggested to go beyond these and think of the significant value and contribution of their research.

Professor Lau not only raised the issue of the importance of the research question, but she also emphasized the importance of having the ability and skills to ask questions whenever needed. She stated that students are just not used to being curious and asking questions, since this might not be the usual practice in our examination-oriented education system. Researchers need to communicate with people in their particular field of interest in order to obtain information and exchange ideas. Professor Lau shared her own experiences as a research student, and said that time is required in order to learn how to come up with a good question and ask it skillfully. A good question that is asked clearly and competently will lead to a continuation of the discussion and thus more information being shared.

An unbiased position in finding evidence

When conducting research, a hypothesis is formulated under certain assumptions. The researcher should then be in an unbiased position to collect evidence that may either confirm or refute the hypothesis. Having an assumed standpoint or predicting what the results will be before the evidence is collected might influence the whole research process, such as in the selection of the methodology used. This in turn may direct the researcher to collect so-called 'supporting' (but in actual fact biased) evidence.

Professor Alan Wong from the Faculty of Social Science, agreed that research students may have this assumed position in research. When some students come up with a research question, they intuitively draw a conclusion or assume an answer for the question. They then tend to gather evidence to support their 'conclusion', which indicates that they implicitly assume that contradictory results will not occur. Their attempt to prove that something is 'correct' puts one in a biased position, in particular when one has a strong opinion regarding the question, and evidence against the pre-assumed position may be easily over-looked.

Final remarks

The supervisors we interviewed believe that research should be innovative, original and problem-driven, as well as being of significant value both to the field and to society as a whole. Furthermore, they describe a good researcher as being brave, curious, open-minded, knowledgeable, independent, critical and objective. The supervisors' ideas may, however, not be consistent with those of their research students. Thus, an early identification of a student's conceptions (or even misconceptions) of research may indicate the supportive measures that might be implemented by their supervisors.