

Research ethics should be taught as part of the NSW Higher School Certificate curriculum

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Abstract

The Higher School Certificate is a certificate that recognises the successful completion of secondary education in New South Wales (NSW), Australia. The most recent enrolment information available suggests that at least 13,472 students undertaking the NSW Higher School Certificate (HSC) in 2019 conducted research projects that involved human participants. During the course of their high school education current HSC students are taught research design principles and statistics so that they are equipped to plan a research project and determine the meaning of the outcome; however, the students are not systematically taught *the application of* research ethics during their high school years. This article contends that the NSW HSC curriculum be expanded to include instruction in and application of the fundamentals of research ethics to these high school projects to ensure that all participants involved in these projects are accorded respect and protection as intended by the Australian National Statement on Ethical Conduct in Human Research.

Keywords

Research ethics, ethics, curriculum, teacher education HSC, ethics education

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Codes for research ethics have generally been developed to protect the participants of research in response to instances of appalling misconduct by ‘researchers’. Historical examples include the Nuremberg Code (1947), the World Medical Association (1964) and the United States Department of Health, Education and Welfare (1979). These codes have informed hundreds of individual national codes of ethics and codes of ethics, which have been rendered for specific professions. The common aspects of these codes include the informed and voluntary consent of participants, freedom from coercion, respect for a participant’s autonomy and a declaration that researchers are required to balance the potential risks and harms of their research against the potential benefits to their participants and to society in general. In addition to ensuring excellence in research, the enforcement of research ethics by various institutional bodies and the education of researchers in the principals of research ethics has many important cultural effects. A nation which treats its participants with respect builds a culture of accountability in the research community, an open-mindedness towards participation in the general public and subsequently a tradition of trust for science and its outcomes.

The Higher School Certificate (HSC) is a certificate that recognises the successful completion of senior secondary education in the state of New South Wales (NSW), Australia. Like many similar final high school qualifications (e.g. the International Baccalaureate) there are a growing number of units in the current NSW’s HSC which have research projects in the course that require data collection from human participants as part of their curriculum assessment. Overall research projects of this nature are considered an excellent learning task for students. This form of assessment builds critical, analytic and integrative thinking and effective communication skills. Development of these generic capabilities are prized whether the graduates are from a secondary or tertiary institution. However, it appears that there is an aspect of their research education missing in the current high school curriculum.

It is contended that teaching research skills is a *three-stage process*. Students need to be taught research *design*, research *evaluation* and research *ethics*. The first two steps are covered well in the curriculum. Currently, during their high school education, senior students learn about research design. In various classes they learn about dependent and independent variables, what an experimental and a control group are for and how to design a research project. In mathematics, they learn about statistics and how to evaluate the data they collect. That is, they learn how to interpret the numbers that result from their research, about means, medians, modes and about bar charts, line graphs and other ways to present that data. In science students learn how to write that information in a formal report format. Students are given some instruction in aspects of research ethics such as *confidentiality* and *consent*; however, high school students are not systematically taught about the *application* of research ethics even though they will go on to design research projects in their

senior years that require data collection from human participants. There is *no requirement* that students present their participants with consent forms, for example. This missing aspect of the curriculum is important for two reasons. First, there are requirements for honest, ethical and conscientious research in Australia. These requirements are clearly set out in the Australian National Statement on Ethical Conduct in Human Research (National Health and Medical Research Council, 2018) and every person who conducts research with human participants should be familiar with the basic rules therein. Second, by teaching students about research ethics, *and its application* we are providing them with a further important generic skill – a foundation for engaged and ethical citizenship.

The number of students enrolled in the units (and the potential number of participants engaging in the studies) exemplifies the magnitude of this potential problem. Society and Culture (SAC) and Community and Family Studies (CAFS) each require a research project and the most recent enrolment data indicates that 13,472 students undertook these courses in 2019 (NESA, 2020). If each student conducted a survey with approximately 30 participants then the 2019 participant pool exceeded 400,000 people. Personal Development, Health and Physical Education (PDHPE) is a very popular HSC unit and the draft new curriculum for year 12 includes a proposed research project for this unit as well. In 2019 15,773 students were enrolled in PDHPE (NESA, 2020). If these students were to be added to the equation, the potential number of participants in these surveys begins to approach 880,000. Furthermore, it has been recently reported in a *Sydney Morning Herald* article (Baker, 2019) that in the future *all* HSC candidates will be required to undertake a project. There is no doubt that there is a growing number of senior students conducting research as part of their unit assessment and a significant number of participants informally involved in that research.

The National Statement on Ethical Conduct in Human Research (National Health and Medical Research Council, 2018) is mandated to be used by any researcher conducting research with human participants and the main aim of these guidelines is to ensure that participants in research be accorded respect and protection and that the research that is conducted is of benefit to the community. Obviously, high school research is not necessarily of the same nature as research that is funded publicly or conducted by institutions. Nonetheless, these projects are being widely administered within friendship groups and the general public and it is important that all researchers, including high school students, should be introduced to the basic constructs of the National Statement before designing their projects. The preamble of the National Statement asserts:

“ethical conduct is more than simply doing the right thing. It involves acting in the right spirit, out of an abiding respect and concern for one’s fellow creatures. This National Statement on ‘ethical conduct in human research’ is therefore oriented to something more fundamental than

ethical ‘dos’ and ‘don’t’s’ –namely, an ethos that should permeate the way those engaged in human research approach all that they do in their research” (p3)

Teaching *the application of* basic research ethics is not difficult to do for a high school population and should not take up too much classroom time as the concepts are intuitive at a basic level. The necessary additions to a typical online survey or interview project are also straightforward. The key concepts that high school researchers need to understand are as follows: consent, confidentiality/anonymity and doing no harm.

In discussing the need to obtain consent to participate in a project the following important points must be made: First, that consent needs to be informed. That is, students need to inform the participant of the purpose of the study in simple, easy-to-understand language (unless this compromises their research). If this will jeopardise their study outcomes some deception is allowed, but the participant must be informed of the real purpose of the research at the end of the study and consent must be obtained again, once the participant is aware of the true purpose. Second, the participant should be told who is conducting the study and why. Lastly, the participant should be told what they will have to do and roughly how long it will take.

Next, it is crucial that participants know that the data collected will be kept confidential (interview) or anonymous (questionnaire). The participant should know that the data will not include any information that will make them identifiable and the participant should know that participation is voluntary and that they can withdraw at any time during the survey or interview. This is especially important if the questions being asked might cause distress. These first two steps can be handled very simply by creating a short consent form that can be added to the start of a survey or questionnaire. Participants can read this information first, before starting the survey and indicate if they want to continue by clicking on a ‘consent’ button. At the moment the use of consent forms is not standard practice in HSC projects and it is the author’s contention that they should be.

Third (and this might be very important for an adolescent population), if the questions relate to topics such as self-esteem, mood, body image, bullying or suicide (any issues that might reference ‘harm’ or ‘distress’), the researcher might need to have a page at the end of the questionnaire, which includes information about where to go if questions in the survey have triggered bad feelings. The advantage of surveys is that they are anonymous and the researcher is more likely to get honest answers to questions. However, the most common disadvantage is that because they are anonymous the researcher is unable to assist a person who may become distressed as a result of the questions being asked. A simple way to do this is to include a final screen (on a survey) or handout (in an interview situation) with relevant support services. If there is risk of distress, a participant will have resources to seek help if they so desire. It is suggested that the advice include

a mixture of resources that include local helplines targeted specifically for youth and advice to speak to a trusted adult in person (e.g. parent, favourite teacher, school psychologist or counsellor). These basics can be taught in a variety of interesting and creative ways: guest speakers, videos, peer discussion of vignettes or topical newspaper articles. The material need not be a separate unit but integrated within the courses to which the topic is most relevant.

A solution sometimes used by schools to deal with the 'ethics issue' is an outright ban on certain research topics. Banning topics such as depression, anxiety or suicide from their student's topic lists, without discussing why, is not enough for two reasons. Students need to understand the issues surrounding the concept of 'causing no distress' when applied to these obvious topics so that they can apply them to less evident examples. Nobody is certain what may trigger anxiety or bad feelings in a person. What might seem like a completely innocuous topic to one person (e.g. a survey on the appreciation of ladybirds) may still cause anxiety in another (fear of insects). Furthermore, the banning of topics, whilst notionally addressing the issue of potential harm, does *not* deal with issues of consent, confidentiality and the capacity to withdraw from a project that are important for all research programmes undertaken and should be compulsory for every piece of research..

Research bodies worldwide consider it imperative that investigators who are responsible for the design and conduct of research be educated on the protection of their human participants (e.g. Seto, 2001; Lindorff, 2010, Cairola et al., 2012; II BRISPE, 2012). Teaching strategies aimed at tertiary students in a variety of courses are plentiful (e.g. psychology; Strohmets and Skeleder 1992, science and engineering; Eisen and Parker, 2004; and business management; Naimi, 2007). The author, however, feels that there is an important gap in the education of secondary students who are conducting research with human participants. An investigation into teaching research in this area suggests very little attention is given to this topic. Ike and Anderson (2018) proposed techniques for teaching bioethics in a high school environment and lesson plans teaching 'integrity ethics' or the ethics of acting morally abound. However, there appears to be no research or materials directed to high school students relating to human research ethics. There is a clear need for the development of lesson plans that include practical suggestions for creating consent forms and information sheets and which provide teachers with resources for furthering the discussion of research ethics. Furthermore, teachers should be provided with guidelines for evaluating student research proposals with respect to possible harm or distress beyond the tactic of banning. The application of these concepts to research projects is a task that many of these students will be facing in a few years if they decide to undertake any research, either as a participant or researcher, during University study. An understanding of these issues will inform all aspects of their future participation in the ethical advancement of knowledge. The author believes this material needs to become a part of any high school

curriculum that involves research design, for example the NSW Higher School Certificate.

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