

RESEARCH METHODS IN **PHYSICAL EDUCATION AND YOUTH SPORT**



Edited by Kathleen Armour
and Doune Macdonald

Research Methods in Physical Education and Youth Sport

This is the first book to focus entirely on physical education and youth sport, it guides the reader through the research process, from first steps through to completion of a dissertation or practice-based project, and introduces key topics such as:

- formulating a research question
- qualitative approaches
- quantitative approaches
- mixed-method research
- literature review
- case studies
- survey, interviews and focus groups
- data analysis
- writing the dissertation.

Each chapter includes a full range of useful pedagogical features, including chapter summaries, practical activities, case studies, dialogues with active researchers and guidance on further reading and resources. With contributions from some of the world's best-known researchers in the field, this book is indispensable reading for all students and professionals working in physical education, youth sport, sports coaching and related subjects.

Kathleen Armour is Professor of Education and Sport, and Head of the Department of Sport Pedagogy at the University of Birmingham, UK. Her research interests are in teacher/coach career-long professional development, physical activity and health pedagogies, and the role of sport in the lives of disaffected/disengaged youth.

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Part I

Planning the research process

1 What is your research question – and why?

Kathleen Armour and Doune Macdonald

Who we are as researchers revolves around the questions that we ask.
(Brustad, 2009: 114)

[I]n research, as in life, what one finds depends on where one looks and how one looks – and the tools and methods that are used are determinative of these findings.
(Spencer Foundation Task Force, 2009: 28)

Pseudo-inquiry is ubiquitous: both the sham reasoning, making a case for a conclusion to which you are unbudgeably committed at the outset, and, especially, fake reasoning, making a case for a conclusion to the truth value of which you are indifferent.
(Haack, 2008: 34)

Introduction

Despite the fact that this is a research *methods* book, you should not assume that research begins with methods; it does not. Research begins with *questions* and researchers often care very deeply about both the questions and the potential answers. The identification of a viable research question is not, however, a straightforward process; the selection of questions is influenced by myriad factors including personal background, interest and skills, personal preference, available funding, sociopolitical factors and current trends. The primary purpose of this chapter, therefore, is to focus on how and why research questions are developed, and to encourage you to identify two or three questions against which the methods chapters that follow can be considered.

The secondary purpose of the chapter is to introduce the approach and structure of this book. Countless research methods books are available and, like many others, this book introduces a wide range of methods and methodological issues. In this text, however, we have taken a different approach. Each chapter has (at least) two authors: one senior, experienced researcher and one emerging researcher who was engaged in learning about the research method/issue addressed at the time of writing. Authors have approached the writing of their chapters in a range of ways, but one of the tasks we set them was to ensure that, where feasible, the voices of each author could be heard. Hence, in many of the chapters, the senior author presents material on a

method or approach, and the junior author offers comment on issues encountered while trying to use the method in their research. In this way, we hope that readers who are relatively new to some of these methods will be able to gain valuable insights into the research process in *practice* as well as in theory.

About us

Kathleen Armour, co-editor of this book, is Professor of Education and Sport and Head of the Department of Sport Pedagogy at the University of Birmingham in the UK. She has been working in the academic field of education, sport and physical education for about 25 years. Her research interests are all located in the academic spaces where sport and education meet, so she has been influenced strongly by research in the wider education field. In the last 10 years, Kathy has been involved in large, multidisciplinary teams of researchers undertaking longitudinal evaluations of government- and corporate-funded interventions. This collaborative research activity has given her new insights into the challenges and opportunities of working across traditional disciplinary boundaries. Kathy has also been active in trying to raise the profile and quality of educational research in physical education and sport coaching, and she is founder and lead convenor of the new Sport Pedagogy Research Network within the European Education Research Association. Most recently, Kathy has been appointed to the REF (Research Excellence Framework) panel for sport-related research, which is part of a periodic national assessment of published research undertaken in all subjects across all universities in the UK. It is interesting to consider the impact of such assessments on the research process, researchers' careers ... and the kinds of research questions that are valued.

Doune Macdonald, co-editor of this book, is a Professor of Health and Physical Education (HPE) and Head of the School of Human Movement Studies at the University of Queensland. She has been working as an academic in the field of HPE for about 25 years, having taught HPE in primary and secondary schools after her undergraduate degree. Over this time, she has had a range of research interests in the areas of HPE teacher education, curriculum and equity, and more recently in sociocultural questions around young people and physical activity. Several of these projects have been multidisciplinary and longitudinal, necessitating careful project planning, communication and management. She has worked with more than 15 research higher degree students who have been integral to her applied and commissioned research, grants and publications. Being a head of school, or chair of department as it might be known elsewhere, has given her insights into the changing context in which research is now being conducted in universities and the myriad of challenges that may arise for research students and early career academics.

What is research?

Research can be defined in many different ways, but at its heart is the notion of investigation – finding out – for a purpose. At its very simplest, a dictionary definition

tells us that research is a ‘methodical investigation into a subject in order to discover facts, to establish or revise a theory, or to develop a plan of action based on the facts discovered’. All research takes place within a broad social and political context, and this means that definitions shift, albeit subtly. For example, in the forthcoming assessment of research to be undertaken in universities in the UK, there is a strong emphasis on research ‘impact’. The draft definition of research for these purposes is: ‘a process of investigation leading to new insights *effectively shared*’. Different forms of research have purposes that can have a major influence on the ways in which the research process is conceptualized and questions formed. For example, critical theorists form their research questions from the fundamental standpoint of questioning ‘the assumption that societies such as the United States, Canada, Australia, New Zealand, and the nations in the European Union ... are unproblematically democratic and free’ (Kincheloe and Maclaren, 2005: 303). Researchers working in this tradition have the core purpose of using research ‘as a form of social or cultural criticism’ (ibid.: 304). Similarly, those engaged in participatory action research (PAR) have the stated objective of producing ‘knowledge and action directly useful to a group of people’ in order to ‘empower people at a deeper level through the process of constructing and using their knowledge’ (Nieuwenhuys, 2004: 210). What we need to take from all this is that researchers in different traditions tend to ask different questions for different reasons.

The range of situations in which we might engage in research is vast. At one end of the spectrum, it could be argued that we are engaged in a form of research much of the time in our daily lives, i.e., we investigate – sometimes in great detail – choice of university, holiday destination or buying a house. In this book, however, we are interested in formal research, which is ‘the systematic gathering, presenting and analysing of data’ (Burton and Bartlett, 2009: 3) with a view to expanding knowledge and solving problems. Importantly, and this point cannot be overstated, once we engage in research at the formal level, we are usually shifting from researching mainly undertaken for our own purposes to producing research findings which we intend to share with others. The intention is to develop new knowledge that could influence policy, theory and/or practice in the field in which we work. This means that we have a clear responsibility to ensure that research is undertaken rigorously, using the most appropriate design, methods, analysis, reporting and dissemination strategies, all of which must be compliant with increasingly exacting ethical standards. A critical understanding of the research process, and the strengths and weaknesses of different traditions and methods is therefore the hallmark of a professional approach to research.

Professional responsibility

Once researchers enter the public realm, it could be argued that they have a professional responsibility to the potential users of their research. For example, we would argue that physical education researchers have a professional responsibility to those teachers, pupils and policymakers they are seeking to inform. By this, we mean that researchers should address not only the questions in which they have a

personal interest, but also those questions that matter to teachers, schools, parents and policymakers. In other words, research at this level should be more than a personal hobby; indeed, in order to attract funding, research has to focus on areas of public interest. Following on from this, it is logical to suggest that researchers also have a professional responsibility to ensure that the research they conduct is fit for purpose, making best use of the range of appropriate methods and using the best research knowledge – and methods – available. Without this quality control imperative, poor research can enter the public domain and could have a negative impact on some users.

Research funding

This last point raises the issue of research funding and research questions. How can researchers retain an interest in their own questions, while simultaneously seeking funding and perhaps changing their questions in order to attract funding? What is the point of funding and do we need it? O’Sullivan (2007: 254) poses the following question:

As a scholar, you decide whether your interest in a particular research agenda is driven by access to research funding or whether the questions of interest are of keen significance and importance. Is it possible to do both?

One response to this is that doing both is not optional; rather it is essential, although it is also important to recognize that researchers tend to do different things at different stages in their careers. It is unlikely, for example, that a cell biologist will be allowed to enter a PhD programme and work entirely alone on a topic of choice that is not part of a larger, funded research programme. On the other hand, it is possible that a researcher in the social sciences, including aspects of physical education and coaching, will have more freedom, working with a supervisor and perhaps without any external funding. We have argued elsewhere, however, that the field of physical education has not been served well by the predominance of lone, essentially part-time researchers who are also academics with large teaching and administration commitments (Armour, 2010; Macdonald, 2009). The field has suffered from a lack of funding to support large, sustained research teams that are common in the natural sciences, and this has restricted the ability of physical education researchers to ask ‘big’ research questions and to answer them effectively and robustly. It could be argued that this has resulted in a quantity and quality of research knowledge that is unable to inform practice with confidence.

Research purposes

It is important to recognize that research is undertaken at different points in a career for different reasons – e.g., study for university credit, a research degree, a commissioned project – and that the reason will, to some extent, guide how the experience unfolds. In particular, underpinning reasons shape the purpose of your

research and the questions you want to ask matched to the time available. For those undertaking an undergraduate honours project or a research degree (such as a Master or Doctor of Philosophy), it is important to consider what you might want from your research experience. Are you looking for this research experience to take you into a university career, or are you developing a skills set that will be most useful to industry (e.g. working as a coach, being promoted to advanced teacher status)? If it's the former, your research project is very much a building block upon which your career trajectory may be built. The presumed goal of undertaking an MPhil or PhD is for you to demonstrate that you can operate as an independent researcher and, preceding this, an honours project may signify your readiness to undertake a higher degree.

Research also has a number of formalized terms that describe its purpose. Traditionally, universities talk in terms of basic and applied research, where *basic* or *pure* research is an activity in which academics are free to engage driven by the pursuit of truth for its own sake. This kind of research often has the goal of generating theory and discovering 'fundamental facts'. *Applied* or *field* research uses a rigorous system of inquiry to apply new knowledge to everyday problems. It is most likely that your research project will fall into this latter category if you work with teachers, coaches, students, athletes, parents, or policies to understand and refine practice. As was noted earlier, commissioned research occurs where organizations such as government agencies, sporting groups, school systems etc., want a particular research project undertaken and they pay researchers to do this under contract. These projects will, to some extent, delimit some of the questions asked, perhaps the methods employed, budget, timelines, and opportunities for publishing the findings.

Much large-scale, commissioned research in the field of physical education and sport takes the form of evaluations. The research is usually undertaken to assess the effectiveness of an intervention such as a new programme or policy. Even in this case, however, the research process is less straightforward than it might at first appear. For example, Weiss (1998) has identified clashes between the needs of researchers and those of corporate or government sponsors in evaluation research. Researchers tend to want more time than is available (Rossi *et al.*, 2004) and are keen to identify both positive and negative impacts of the intervention. Sponsors, on the other hand, might, for a variety of reasons, prefer to hear only the positive outcomes of the research. Sponsors might also have very fixed views about methods, making it difficult for researchers to design appropriate studies, and they might believe that research can always identify the kind of direct and simple lines of causation that are needed to demonstrate a programme has 'worked'. This is particularly problematic in the social sciences because expectations tend to be rooted in natural science models of research. Nonetheless, where unrealistic expectations of research exist, negotiation with sponsors can clarify misunderstandings and some compromise may be required. Challenges of this type are rarely insurmountable: they are simply part of the reality of the research process; research questions are never asked – or answered – in a vacuum.

Contribution to knowledge

Another way to think about research questions is to consider the purposes of research and the types of knowledge to which it contributes. Gall, Gall and Borg (2007) suggested the following ways in which research might contribute to knowledge:

Description – involves using a range of instrumentation (e.g. pedometers, surveys) to describe natural or social phenomena. You may be interested in whether a coach is giving equal feedback to boys and girls, or how teachers are following a new physical education syllabus.

Prediction – allows us to forecast when something might occur in the future based upon current information. For example, given the trends for participation in junior soccer, when might the competition schedule need to change or more coaches be required?

Improvement – looks at the effectiveness of interventions designed to improve practice. Education and sporting systems are constantly adjusting their approaches, resources, pedagogies etc., to improve learning and performance outcomes. Research can inform the efficacy of the interventions.

Explanation – to some extent subsumes the above purposes, in that explaining a phenomenon means you can describe it, predict how it will play out and intervene to change the consequences. Often, explanations for phenomena, such as boys' stereotypical behaviours in sport, are framed as theories and, in the example used here, feminist theory may be helpful.

Clearly, each of these different types of contribution to knowledge will require different kinds of research questions. We invite you to consider the contribution that you are interested in making through your proposed research.

Shifting research contexts

Potential issues around funded research were signalled earlier. It was also noted that research never takes place in a vacuum, and this means that wider social, political and economic factors will, inevitably, impact on the research questions that can be asked and the findings that will be 'heard'. As John Evans (2009: 107) has pointed out:

That we story our lives into existence and, just as critically, have them storied into existence for us by powerful others more capable of making their views and values heard, perhaps goes without saying ...

In the context of universities, philosophers and educational sociologists have been arguing for some time that with the drive to increase the rate of knowledge production, commissioned research is likely to continue to grow such that 'Knowledge is and will be produced in order to be sold' (Lyotard, 1984: 4–5). Marginson (1997) identified the period from the 1980s as a time of fundamental change with respect to the research activities of universities. There was a shift

from a situation in which there was reward for non-market, basic research and the production of knowledge for its own sake, to one of social, political and economic turmoil in which universities were encouraged to become entrepreneurial and research became a commodity that could be exchanged. Universities can now be regarded as corporate players in university–industry partnerships, operating within circuits of economy and power (Slaughter and Rhoades, 1990). This is evidenced by the UK, New Zealand and Australian research assessment processes where research impact is measured, and both research income and published output are key indicators of success.

You might question whether any of this is relevant to you as an inexperienced researcher. Well, the answer is it might be relevant, particularly if you develop an interest in a particular line of research and want to pursue it. Certainly, it is appropriate (and arguably necessary) to discuss the principles that underpin research that is undertaken at a specific moment in time, and also to have some awareness of the wider context in which you are working. It might also be helpful for you to remember that even at the highest levels, research is a complex, often messy and always value-laden activity. Cohen and Manion (1989) argue that research is distinguished by being a form of systematic and controlled empirical inquiry that is self-correcting in order to reduce error and withstand public scrutiny. At the same time, Sparkes (2002: 220) reminds us that the ways in which we construct, view and judge research are always shifting:

There are no fixed standards, historical or contextual, on which to base our judgments. Therefore, just as with our enquiries we construct reality as we go along with these enquiries, we also construct our criteria for judging them as we go along.

The shift towards entrepreneurialism and accountability is a good example of a wider structural influence that can impact upon the kinds of research that are valued. Indeed, reinforcing a point made earlier, Grundy (1996: 4) argued that for some academics, there may be ‘tension between the academic researcher’s responsibility to mount a critique without fear or favour and the temptation not to “bite the hand that feeds us”’. This is a major concern for the future integrity of research.

Back to those questions

As should be clear by now, research is political: it reflects who you are and your interests and priorities and/or the practices that you wish to understand and, possibly, seek to change. Therefore, it is important to reflect on the source of your motivation to undertake research in a particular area and for a particular purpose. A good starting point is to ask the following questions:

- What do you hope to contribute through your research?
- What is your key interest, and why?

- What are the personal, local, national and international imperatives that may impact upon the questions you could – or should – ask (think of the obesity issue)?
- If applicable, which research questions are likely to be funded – and by whom?

Framing your research question

It should be apparent by now that while framing research questions is a vital early step in any research process (Lewis and Munn, 2004), researchable questions are not always easy to articulate. The quote by Haack (2008) that opens this chapter is blunt – and deliberately so. Novice researchers often come to research to find out ‘that’ something ‘is’ or ‘is not’ the case. In other words, they don’t have questions; they have answers – and strong beliefs – for which they are seeking support. This is not a good way to start! At the same time, it is of course the case that we come to any research process with prior observations, ideas and experiences – and these are not to be denied. Instead, these ideas need to be interrogated such that genuine questions can be identified to which the answers would be of interest and value. Cheek (2000: 408) cites the work of Schutt (1996) on this point, arguing that ‘A good research question will be *feasible* within the time and resources available, it will be socially important, and it will be scientifically relevant.’ At a more specific level, it could also be argued that a ‘good’ research question should be clearly worded and have a single focus.

The identification of a ‘good’ question is only the beginning of a more complex set of questions about design and process. For example, in much biosciences research, a question will be defined further in the form of a set of hypotheses to be tested. Tenenbaum *et al.* (2009: 117) point out that ‘A hypothesis is not an entity by itself, but rather an entity which reflects knowledge accumulation, an essential product of scientific inquiry.’ On the other hand, the generation of hypotheses in the traditional sense is not a requirement in all types of research. As ever, the approach to be taken has to reflect the questions a researcher is asking.

Once a research question has been identified, it may need further refinement as potential research designs and methods are considered. For example, you could have a general area of interest in a decline in student participation in conventional sports such as volleyball and netball. The questions that you identify will provide a more specific focus for inquiry and will form the foundation of effective research design. It is also the research questions that delimit what you are able to seek to know after you have collected, analysed and synthesized your data. So, in a school setting, an apparently straightforward research question could lead to a range of potential methods and strategies, of which one, some or all may be appropriate depending on the research scale and context:

- *Research question:* Why are so few students signing up for the end-of-term volleyball competition?
- *Research design and process:* Depending on the research design, some of the following data collection possibilities could follow:

- checking school records of participation to establish whether there are clear participation trends and how they compare to the trends for other sports;
- seeking student ‘voice’ on the issue by surveying or interviewing students to ascertain why they do – or do not – participate in certain sport competitions and what factors are attractive or otherwise with respect to volleyball;
- gaining some insights from the volleyball teachers/coaches by interviewing them to establish their perspectives on practices and participation;
- ascertaining wider teacher/coach perspectives on the issue by interviewing them about the ways in which the curriculum supports the development of students’ volleyball competence and about the perceived value of volleyball as an activity;
- finding out more about the structure of volleyball and its youth development opportunities by conducting a document/web analysis and interview or survey.

Clearly, the data from these research processes will be analysed in ways that are appropriate to the question asked: for example, statistical analysis of trends, coding or thematic analysis of interview transcripts, case reports providing holistic analysis of individual interviewees etc. It might be useful at this stage to consider the different ways in which your potential research question could be explored, and to check whether it is feasible, socially relevant and scientifically important.

Good questions – good design – good research

It is interesting to consider the destination of research, i.e., where the process is heading and, if successful, what it will look like when we get there. The following descriptors from the UK research assessment process are informative. Published outputs from research undertaken in universities are graded on three key criteria: ‘originality, significance and rigour’. There is no expectation that an undergraduate research project would routinely meet these criteria. On the other hand, doctoral theses are judged on very similar criteria:

- *Originality* is a characteristic of research that is not merely a replication of other work or simply applies well-used methods to straightforward problems, but which engages with new or complex problems or debates and/or tackles existing problems in new ways. So, for example, a review of existing research can demonstrate originality if it analyses and/or synthesizes the field in new ways, providing new and salient conceptualizations. Originality can also lie in the development of innovative designs, methods and methodologies, analytical models or theories and concepts.
- *Significance* is the extent to which research outputs display the capacity to make a difference, either through intellectual influence within the academic sphere or through actual or potential use beyond the academic sphere, or both.

Significance can be judged in different ways according to whether the research is basic, strategic or applied.

- *Rigour* can be judged in many ways, and can helpfully be associated with methodological and theoretical robustness and the use of a systematic approach. It includes traditional qualities such as reliability and validity, and also qualities such as integrity, consistency of argument and consideration of ethical issues. It certainly entails demonstrating a sound background of scholarship, in the sense of familiarity and engagement with relevant literature, both substantive and methodological.

In terms of the publication of research, an established specialist journal in our field, the *Journal of Teaching in Physical Education*, published in the United States, asks reviewers of research-based articles to comment on:

- *Relevance/significance of the study* – including questions such as whether the theoretical framework is logically explained. Is the rationale for the study clear? Does the literature review provide the most relevant and current scholarship on the issue? What significant, unique or valuable knowledge will readers learn from the study?
- *Methodology and presentation of results* – including foci on whether the research questions are specific enough so that the theoretical framework/construct logically leads to the selection of appropriate variables/phenomena for the study. Is the research design explicitly explained? Are participants clearly specified? Has their consent been gained? Are there sufficient data sources to address the research question(s)?
- *Discussion and interpretation* – including questioning whether the findings make a unique contribution to the body of knowledge. Are interpretations of the results based on the data and related to the literature? To what extent have the results answered the research questions? Are practical implications of the findings presented when appropriate?
- *Clarity of information presentation and writing* – which prompts assessors to comment upon, for example, whether the writing allows a clear, accurate and concise presentation of information. Is the general arrangement of the sections logical? Is the tone of reporting academically appropriate? Is the reference list accurate?

These two sets of criteria are helpful in reminding us that phases of the research process, from identifying researchable questions and appropriate designs, through to undertaking rigorous data collection and analysis, and providing well-written reports, are all integral to the production of high-quality research. This point applies no matter what the scale of the project being undertaken.

At the beginning of the chapter, we cited a short quote about research questions from Brustad, a highly experienced researcher. We will close this section by providing a longer extract from the passage from which his comment was drawn:

The most useful revelation that I gained from three years of work as the editor of the *Journal of Sport and Exercise Psychology* pertained to how the so-called ‘gatekeepers’ of knowledge (reviewers, associate editors and editors) arrived at judgements about ‘good’ and ‘not-so-good’ research during the manuscript review process. I was surprised to see how frequently studies with ‘airtight’ methodologies were placed in the ‘not-so-good’ research category as a consequence of what the reviewers regarded as an uninspired, uninteresting, or un insightful research question. It seems to me that, for many researchers, concern for methodology serves as a psychological ‘safety net’ that provides a false sense of security that can lead to dull research questions.

(Brustad, 2009: 114)

Organization of this book

Some of the (English-speaking) world’s best-known authors in the field of physical education and sport agreed to lead a chapter in their area of expertise, supported by one or more emerging scholars. This pairing approach, as outlined earlier, adds richness to the chapters because the emerging scholars (students and early career researchers) offer engaging and sometimes intimate insights into their research experiences. As they share their deliberations, case studies, problems – and solutions! – readers will get a taste of what may be in store for their own research journey. The authors are drawn from the UK, Europe, North America, Australia and New Zealand, giving the text a breadth of international perspectives alongside the breadth of author experience.

The book has five parts and we suggest that during your reading of this chapter, you attempt to draft some potential ‘researchable’ research questions. You can then test these questions against the methods and approaches covered in each section/chapter.

Part I: Planning the research process

Following this first chapter on an introduction to the context of research and asking research questions, the next three chapters provide you with signposts that give directions for what to think about as you start the research process, how the process may feel, and where you should be aiming in the production of ‘good’ research.

Part II: Methodology: the thinking behind the methods

This part comprises six chapters that focus on identifying some of the often unspoken assumptions that lie behind research. Engaging in early critical thinking about theoretical perspectives, ethical issues, qualitative and/or quantitative approaches, and the place of participants’ voices can assist with the coherence of your project. Together, Parts I and II emphasize that doing research is a highly personal experience, and who you are is integral to the questions you ask and the methods you choose.

Part III: Selecting the most appropriate method(s)

This is the longest part of the book. Twelve chapters are dedicated to advice on undertaking reviews of literature and the most common data collection methods in our field. The methods cover both quantitative and qualitative techniques and, importantly, allude to the strengths, weaknesses, challenges and potential contributions of these methods.

Part IV: Data analysis – consider it early!

The chapters in this part provide an overview and insights into key considerations in qualitative and quantitative data analysis strategies. Data analysis is, of course, a vital step in the research process and the point made in these chapters is that it should be considered early, i.e., at the research design stage.

Part V: Communicating your research

The two chapters in this part link back to the key messages from Chapters 1 and 2. The research process is not complete until you have fulfilled the professional responsibility to share your findings, using whatever media are appropriate. The chapters offer advice on effective writing and managing the writing process, so that you too may feel the pleasure and reward of bringing a project to completion.

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2 Research principles and practices

Paving the research journey

Downe Macdonald and Louise McCuaig

For me, research is for people who have ever asked why something is or isn't, and as a result are motivated to understand and investigate phenomena in depth. The movement of ideas from genesis to submission may take years; along the way, publishing and presenting your work at conferences and seminars allow you both to self-check and to receive feedback from others to ensure that you are on track. To see your project start to take its place in the world of research and to know that you have contributed to the development of new knowledge – well, nothing tops that!

(Joseph Occhino, research student in sports coaching, 2011)

[At] least you're doing something for the community to try and help us ... and it's good to go share with other people.

(Participant in Alison Nelson's work with young indigenous Australians, 2009)

Introduction

Conducting research can be a complex, challenging, sometimes frustrating, and hopefully rewarding experience, as we see in the quotes above. Doing research in physical education and youth sport, as with any social process, is overlaid by a research context that is frequently political, of public interest, and potentially attracts a range of opinion. Much of this complexity can be attributed to physical education and sport sitting at the intersection of differing expectations and priorities related to physical activity, physical fitness, sporting success, health, body weight and citizenship, to name a few. As indicated in this book, this also generates research that draws on a range of theories and methods and must speak to a range of audiences. Whatever question you choose to explore, the quotes above indicate the excitement that may be felt as your research work contributes to knowledge or the appreciation expressed by research participants who perceive that you are trying to make a difference. Similar contributions are what may define your research journey.

This chapter discusses five guiding principles to assist you in navigating your research activities, whether that research be related to teaching, coaching, children, adults, the story of one, or the patterns of thousands. These principles have been distilled from our own experiences as researchers and enriched by conversations with our colleagues at the University of Queensland.

So, who are we?

About us

Doune Macdonald: One of the great things about a career in education, whether in schools or universities, is that you see your students grow into independent and successful professionals in their own right. Students interested in undertaking research degrees have arrived to work with our group from a variety of backgrounds: experienced teachers and coaches looking to extend their knowledge; early career teachers and health professionals seeking a career change; international students looking for adventure! I had the pleasure of teaching Louise McCuaig, co-author of this chapter, in her undergraduate programme, where her outstanding teaching and organizational skills and musical, sporting and dance talents shone in her year group.

Louise McCuaig: At the conclusion of my undergraduate degree I embarked on a wonderful 14-year teaching career in Queensland schools, a career that was characterized by an increasing interest in health education and the capacity of health and physical education (HPE) teachers to transform their practice into a more egalitarian and caring one, reflective of social justice agendas underpinning contemporary HPE. Subsequently, I returned to my alma mater and undertook a doctoral study exploring the role of caring teachers, teacher education and HPE in the social and moral education of young people. This work has inspired my current projects concerning health literacy in schools and across the lifespan, health education teacher education and student transitions.

Each of our principles will be explained and then explicated in frank conversations between Louise and her colleagues, both research higher-degree students and early career researchers, undertaking a breadth of research in the field. Although Louise's conversations have been with students doing research higher degrees, we anticipate that their perspectives are transferable to your research context. While some of the principles will be elaborated in more detail in later chapters, we hope that here they provide a compass that can help guide your research activities and experiences in positive ways.

Principle 1: Follow your interests and strengths

It may be that your research project will take many months, if not years, and for this reason alone you should have a strong personal interest in the project. As suggested in Chapter 1, it may be that the topic is a prelude to a line of research that may take your career in a particular direction. Sometimes people have a broad range of research interests or simply cannot decide on a research question. A survey of coaches working with junior elite athletes to ascertain their perspectives on gender may be of equal interest to you as a project interviewing Muslim girls about their attitudes to physical education (PE) and sport. How might you decide? Some things to consider when refining your research topic and questions are:

- *Do you want to work with people in your data collection or do you prefer to work with literature, policies, artefacts etc.?* Worthwhile projects can be undertaken without interacting with people. For example, you might carry out a systematic review of literature (see Chapter 11) or a policy analysis (see Chapter 22).
- *If you'd like to work with participants, would you prefer them to be teachers, coaches, administrators, young people, children, parents or community organizations?* Participants are usually found in particular organizations, such as children and young people in schools. Some researchers are keen to work with children and schools while others do not feel this affinity.
- *What methods will you be most comfortable with, e.g. physiological measures, psychometric tests, surveys, interviews, field notes, photography?* While different academic traditions on which you are drawing, such as sports psychology, history or pedagogy, tend to have a 'usual' set of methods, you should not feel limited to these. As will be described in Chapter 9, multi-methods can often be most fruitful. That said, you may have an aptitude or a background in using particular methods that can assist you in this decision.

As an HPE teacher of some 15 years, Louise had been challenged by the diversity of health issues young people faced and the capacity of schools, teachers and programmes of health, sport and physical education to respond authentically and appropriately to these needs. Her experiences and passion for young people's health and well-being provided a sustained motivation that facilitated her navigation of the challenging experience of a research journey. As Crotty (1998: 13) points out, 'we typically start with a real-life issue that needs to be addressed' and many of these issues stem from the intrigue, successes and frustrations we experience in working as practitioners with young people, parents and colleagues. Not surprisingly, Louise employed a qualitative approach to her doctoral research so that she could explore the stories of teachers who were charged with creating the healthy citizens of tomorrow. However, others such as Louise's colleague, Bonnie Pang, undertake a research journey as a result of interests and opportunities emerging out of their undergraduate experiences. Bonnie participated in her first research project as an undergraduate student contributing to a collaborative project between Chinese University Hong Kong (CUHK) and the University of Queensland (UQ) entitled 'Comparative study of children's sport participation and physical activity pattern in Australia and Hong Kong'. Having enjoyed the research experience, Bonnie followed with a research master's degree which highlighted the importance of taking into account cultural and gender factors in relation to young Chinese people's participation in physical activity. Bonnie's supervisor then suggested that her dual Australian–Hong Kong citizenship and experiences provided the perfect foundations for a doctoral study on a similar topic within an Australian context (and in which she is currently engaged). Unlike Louise, who 'fell' into a research project as a result of her daily experiences as a practitioner in the profession, Bonnie has had a more strategic, research-focused trajectory. Nonetheless, she is just as passionate about her hopes to share her research findings with students, parents and teachers, so that these stakeholders will have a greater appreciation for and commitment to diversity in PE, sport and physical culture.

Both Bonnie and Louise agree that undertaking a research project has been facilitated by the opportunity to build on their theoretical and methodological interests and strengths. For example, Bonnie's field notes reveal her capacity to connect with her participants: 'Because I look young, I'm female and I'm Chinese, they might feel less distant with me. And when I said I know how to speak Cantonese, Mandarin and English, several of their eyes sparkled! I guess this is a strength as they find me more alike to than different from them.' Bonnie's cultural knowledge of her participants' lives and parental expectations also facilitated her ability to recruit participants for her study. Given this knowledge, Bonnie devised a strategy to:

- inform parents of the explicit relationships between this research and their child's knowledge of healthy citizenship;
- explain how her findings related to their child's academic studies;
- highlight her academic qualifications as a Chinese researcher.

Here, Bonnie demonstrates the importance of reflection as a means of identifying personal strengths and understandings, according to the specific cultural contexts, in order to conduct research appropriately and build the necessary rapport.

Principle 2: Manage the research process carefully

Time can slip away very quickly in any research process. There is a wealth of literature in which to get buried, participants who are difficult to recruit, misplaced data, and the need to relocate lost references. Right from the start of your project it is essential that you are clear about your milestones, processes and expected outcomes. Mapping out a realistic timeline is important for keeping you on track and balancing your reading, data collection and analysis, and writing. While revising timelines is appropriate as events unfold, many projects have deadlines, such as those defined by scholarships, funding bodies or semester deadlines. Therefore, it is helpful to become practised at working within time frames.

During the research process you will gather substantial materials that need to be digested, stored and periodically retrieved. This requires effective management skills, including:

- *Begin with accurate and systematic referencing.* Using a computer program such as Endnote to catalogue journal articles, book chapters, reference notes etc. can assist in keeping accurate and retrievable records. Take great care when noting/entering details of your references. It can be very frustrating trying to find the page numbers for a passage you want to quote two years down the track!
- *Manage notes and data files efficiently; don't try to rely on memory.* Researchers have their own approaches to managing information but it is worth starting with carefully labelled files or artefacts stored in such a way that you can readily find them. Regular backing up of data, if you are working on a computer, is essential. Time spent in setting up and complying with a system that works for you will not be time wasted.

- *Write memos.* Throughout the research process, you may have fleeting insights into questions or observations – so-called ‘ah-ha’ moments. Have an easy way of noting these ideas as well as those incidental thoughts or observations you have in relation to literature or data.
- *Write regularly.* It can be tempting to leave writing until the end: the end of reading, the end of the data collection process, the end of the week ... Writing is never premature because organizing your thoughts through writing can help you to focus, clarify and share your progress, allowing for input and refinement.
- *Leave ample time for polishing your research report.* The end of the research process might be marked by a report, a thesis or a manuscript for publication, and each requires time to complete it to a high standard.

As Louise discovered, the most important principle guiding the research process is the old adage that prevention is better than cure. Adopting a proactive approach to the management of your research activities not only ensures you are organized, it also provides you with the necessary breathing space when things don't go to plan. As many health, sport and physical education researchers work with children, schoolteachers or coaches, organizing interview schedules as early as possible can provide the necessary latitude for the inevitable cancellations, miscommunications and opportunities to re-interview. Anthony Leow's experiences during his own doctoral research serve to highlight the need for a proactive approach. Anthony's project explored the uptake of health promotion policies by schools and their teachers, and it was the unexpected changes to interview schedules that were particularly challenging. For example, participants regularly had less time to be interviewed than Anthony had planned for, were unwilling to have interviews digitally recorded, or were absent from their workplace when Anthony arrived after a long-distance drive to interview them.

Anthony devised a three-step contact process when liaising with interviewees. First, at the onset of interview confirmations, he sent an email to thank the interviewee for agreeing to the interview. One week before the interview, he sent a reminder email and asked the interviewee whether it was still OK to go ahead with the interview. Two days before the interview, a courtesy call was made to the interviewee to confirm the timing and place for the interview. In instances when an interviewee was unreachable, a note was left for them to call Anthony back. So far, this method and attention to organization detail have proved effective in managing the interviewees.

Additionally, Louise and Anthony both found that the interview experience itself demands focus and organization. Anthony classified his questions on the interview schedule according to their importance – e.g. ‘must know’, ‘good to know’ and ‘peripheral information’ – and asked the critical questions first in the event that the interviewee was called away before the end of the scheduled interview time. In short, Anthony believes that flexibility is an essential attribute of researchers, who must expect the unexpected and be thoroughly prepared in the event that alternative options are required. This proactive approach extends to the most mundane of tasks, such as those outlined by Doune above, because a lost reference, misplaced interview data or unheeded deadline can compromise the quality and efficiency of your work.

Principle 3: Work ethically

In the widest sense, the subject matter of ethics is the justification of human actions, especially as those actions affect others.

(Schwandt, 2001: 73)

Given the social nature of the research enterprise and, in particular, the likelihood of working with children and young people, it is important to work with your research colleagues and participants in the research process in ethical ways. There are spectacular research horror stories, ranging from the fabrication of data through to experimentation being conducted on humans in the name of science. To enshrine ethical behaviours in research practice, organizations worldwide have created codes of ethics for research (e.g. Australian Association for Research in Education Code of Ethics, 2005). The four principles of the AARE Code are:

- 1 The consequences of a piece of research, including the effects on the participants and the social consequences of its publication and application, must enhance the general welfare.
- 2 Researchers should be aware of the variety of human goods and the variety of views on the good life, and the complex relation of education with these. They should recognize that educational research is an ethical matter, and that its purpose should be the development of human good.
- 3 No risk of significant harm to an individual is permissible unless either that harm is remedied or the person is of age and has given informed consent to the risk. Public benefit, however great, is insufficient justification.
- 4 Respect for the dignity and worth of persons and the welfare of students, research participants and the public generally shall take precedence over the self-interest of researchers, or the interests of employers, clients, colleagues or groups.

While working ethically will be addressed in more detail in Chapter 6, with a focus on working with research participants, here we touch on some broad issues.

- *Working ethically in data collection.* Before you start your data collection, it is likely that you will have to submit an application for ethical clearance. These pro formas are intended to prompt researchers into briefing participants appropriately and managing data collection and storage in such a way that participants come to no harm. However, these applications are usually made early in the research process and your research may need to be cleared again if it changes too much from its original design. Moreover, as the research journey unfolds, the researcher is likely to encounter ethical dilemmas. For example, what do you do if a young person reveals in an interview that they are involved in substance abuse? It is worthwhile taking the time to read a code of ethics so that you have guidance for your research journey.
- *Working ethically in data representation.* One key driver of research is to make an original contribution to knowledge, hence the data and their representation

need to be original (i.e., not plagiarized) and authentic (i.e., not falsified or embellished). Further, and perhaps more complex than this, is the expectation that data will be represented faithfully, and this is not as easy as it sounds. Are the statistics selected to treat the data the most appropriate or are they those that support the hypothesis? Are the excerpts taken from interviews carefully selected in line with what the participants said or have they been chosen to support your prior assumptions? How has your biography shaped your reading of the data?

- *Working ethically with colleagues.* Most universities make it explicit that a research student 'owns' their research work. On the face of it, this sounds like a straightforward statement. Things become more complex, however, when the student researcher joins a research team or the student is working on a project commissioned by an outside agency that is paying for the work to be undertaken. Who then owns the ideas? It may be important to talk these issues through with your advisor and/or your research office so that you are clear about both your rights and your responsibilities. Authorship of publications arising from your research can also become problematic. Again, check ethical guidelines. The AARE guidelines, similar to most, suggest that 'All those and only those who have made substantial creative contributions to a product are entitled to be listed as authors of that product.'

Some of the most challenging aspects of working ethically emerge when researchers engage in work with indigenous, marginalized or at-risk populations. Our colleague Alison Nelson conducted her research on the place and meaning of physical activity and health in the lives of urban Indigenous young people. As a non-Indigenous female researcher, Alison encountered a range of issues, including the challenge of staying connected to the Aboriginal and Torres Strait Islander community affected by her research. Alison was regularly in touch with two or three key people who had links to the community and they enabled her to touch base regularly, ask questions and seek advice without the need for formal meetings. In particular, Alison adopted a multi-pronged approach with at least one person who was involved in the main research site who could help with day-to-day operationally related questions and an Aboriginal academic who could help with the more theoretical issues. As Alison was also employed part-time within her research context, her rich engagement with this community increased her willingness to trust her own reading of situations, particularly in relation to participants' readiness to speak with her. Here a positivist may raise questions about 'bias' and 'validity' of the data analysis process given Alison's investment in data collection and analysis (see, for example, Chapter 8).

A significant challenge for Alison in her research context was that of trying to ensure that the theory and methodology used in her study enabled the participants' voices to ring true, as opposed to constraining them to fit within specific theoretical paradigms. Anti-racist researchers would argue that to collect data and for the researcher to theorize without involvement from the participants are simply another form of colonization (Dei, 2005), and so it was important for Alison to be wary of theorizing the data in abstract ways devoid of their context (Du Gay, Evans and Redman, 2000). This sentiment also underpinned her efforts in both representing

research to participants and the wider community and meeting academic requirements for reporting. Research is reproduced and interpreted by many different audiences and adopting anti-racist research approaches can encourage researchers to seek collaboration with participants in the ways in which they are represented and also to respect the rights of participants to withhold information (Dei, 2005).

In the process of her research, Alison came to the conclusion that while written text was the most pragmatic form of representation for academic requirements, it was not the most suitable for the participants. In order to increase young people's access to the ways in which their stories were being reproduced, a digital story comprising participants' comments, artwork and photographs was provided for each participant so that they could approve or withdraw their contributions. Digital stories also afforded the participants a tangible outcome from their involvement in the research. In their final interview, the young people were asked how they felt about Alison (as a white woman) representing them in research papers. Responses varied from 'I don't really care' to 'I reckon that will be all right' to the opening quote in this chapter that indicated Alison's research was welcomed by her participants, mitigating some of her ethical concerns.

Tina Skinner's ethical dilemmas were of a different nature in her experimental work to investigate the effect of caffeine dose and timing on exercise performance. As she was asking athletes to ingest 6–9 mg kg⁻¹ caffeine (equivalent to the caffeine content in approximately 4–6 cups of espresso coffee) and take up to nine venipuncture blood draws within each testing session, she notes how important it was for her to fully explain the procedures and potential risks of participation to her 'subjects', in addition to highlighting the participants' opportunity to withdraw from the study at any time, without question or prejudice. She was asking athletes to be tested for 5 hours, six times, across a period of 4–6 weeks. Given this demanding testing protocol, Tina was conscious of scheduling sessions to allow minimal disruption to the athletes' work, training and lifestyle commitments—even if this did mean some sessions started at 3 am! Tina was also aware she was asking the athletes to risk infection associated with blood sampling and potential adverse effects of high caffeine doses such as gastrointestinal distress. She therefore understood the importance of adherence to all health and safety guidelines, including documentation and follow-up with all participants regarding potential adverse effects related to her research. Even though appropriate precautions and risk assessments were completed, and despite having had several uneventful blood draws, one of her participants lost consciousness during a blood draw. Tina immediately contacted the first aid officer to attend to the athlete and even though he was cleared by medical services, Tina watchfully waited until the next of kin arrived. Following required protocols, she then completed the injury and incident report forms and followed up with the athlete the next day.

Principle 4: Build a support network

Research can be a lonely journey. While you may have peers who are also taking a similar journey and advisors/supervisors who may be working alongside you, it is important to build some networks of people who can support you in various

ways. Research undertaken on learning communities suggests that people learn best when they are inducted into a particular culture that is welcoming and supports their individual growth (Wenger, 1998). You may need to be proactive in building a support network by using some of the following strategies:

- *Schedule regular communication with your advisors/supervisors.* Advisors for your project or thesis are often very busy and they may need you to manage their involvement. That said, they also have an ethical responsibility to induct beginning researchers into the field. It may be wise to develop a regular pattern of communication and to identify clear goals and targets for meetings. Sending out an agenda prior to a meeting can help you to optimize the meeting time and will ensure your advisors are prepared for the discussions.
- *Talk with other students and build semi-formal groups.* Talking through your ideas with trusted peers is invaluable. Articulating the complex ideas or conundrums in your research often results in the refinement of ideas or even in finding solutions. Both the research journey and the outcomes are likely to be more rewarding if you have someone who can listen to your incidental musings and problems. If there is no tradition for periodic meetings with colleagues to discuss research issues, start a group. Such groups can be helpful for discussing key publications in the field (known as a 'journal club'), understanding a theorist, practising presentations or offering critical perspectives on data analysis and interpretations. These semi-formal gatherings can also be a good place to learn to listen carefully and frame insightful questions.
- *Engage widely within and beyond your field.* Undertaking research is a time of intense learning and you assemble, digest and apply ideas from a range of sources, some of which are unexpected. Take time to learn from a range of sources across the university, the media and/or your professional community. It may be that you devote some time to attending public lectures, building a Facebook discussion or emailing someone (anywhere in the world) who is undertaking similar research. Reaching out usually enriches your knowledge and can generate unexpected support.

Here, one of the most useful strategies to employ is the willingness to pursue a range of mentors and colleagues who may offer varying degrees of input, intimacy and guidance for you and your research. It is important to emphasize the word 'pursue' as the network won't come to you and will be reliant upon your initiative, energy and needs. Some mentors, such as master's or doctoral advisors, will make a very intimate and sustained contribution to your work, while others, such as international leaders in your particular research space, may merely provide you with one golden lead, invitation to a pertinent conference or words of encouragement. Erin Flanagan was an undergraduate student of Louise's who recently returned to conduct her own study on the micro-politics of HPE staff rooms. She found it difficult to create a balance between the independence and freedom of managing her teaching, administrative and research work and her need for structure, guidance and constructive criticism. Erin resolved these tensions by securing additional support from another doctoral advisor who had expertise in the specific methodological and theoretical approaches

she was adopting. As aspiring academics, Louise and Erin both found it useful to have an experienced colleague who became a general mentor. This relationship does not have the burden of supervision responsibilities and so presents different opportunities for career guidance, empathy and insight from previous experiences.

In the initial stages of her research journey, Erin found that much of what was required of her as a doctoral student was established through informal conversations with others, particularly fellow doctoral students. Informal conversations often enabled access to information and support in a non-intrusive or burdening fashion. These informal relationships can serve to increase your sense of connectedness and decrease your sense of isolation, through opportunities to share, empathize and draw insight from others' research experiences. Having been inspired by their work, Louise expanded her network of support through emailing local and international scholars to garner their insights, clarify personal interpretations and/or seek guidance. Every academic she has contacted in relation to her research has responded with a generosity that was both motivational and instructive.

Emma Beckman began building a support network through undertaking an Erasmus Mundus Master's programme in Europe after her undergraduate degree. This international experience fed her interest in undertaking research with paralympic athletes that would maximize participation for all athletes regardless of disability. It also gave her an international network upon which she drew for her subsequent PhD. She learnt early the importance of gaining the support and respect of those working in the field internationally and having the confidence to approach lecturers who worked in her area of interest and to ask questions of them. For example, a simple conversation about biomechanics led to a research trip to the Paralympic Winter Games in Torino, where she was able to assist in data collection with sledge hockey athletes. Back in Australia while completing her PhD, she built on the support network by making links with those researching domestically in her area through attending local and interstate conferences and obtaining accreditation with all of the relevant organizations in her field. Working with community organizations as a volunteer also helped establish links that became vital in her recruitment of research participants.

Principle 5: Disseminate discerningly

When the research's over, don't turn out the lights.

(Willinsky, 2006: 439)

The research process is not complete until you have shared your findings and their implications with others. This process of dissemination is an important aspect of being recognized as a scholar and, it could be argued, is an ethical outcome of the research process. As noted in Chapter 1, the definition of research in the UK within the forthcoming national research assessment exercise includes 'sharing findings' as an integral part of the concept.

Those undertaking research associated with university degrees should be mindful of the increased expectations and accountability that may be associated with their

research project and outcomes. As noted and illustrated in Chapter 1, several countries have ranked research journals according to perceived quality, and individuals and groups of researchers have their work appraised in terms of the quality and quantity of publications (e.g. book chapters, journal articles), grants and research student activity. This surveillance and accountability can add pressure to your experience and those with whom you are working through ‘the system’s’ expectations for timeliness, producing publications for high-ranking journals, generating funds from outside the university and tightly managing budgets. While this context is considered pernicious by some, a wise researcher would be cognisant of the ‘rules of the game’ so that they can make informed choices about their work.

Despite the pressures mentioned above, different projects have messages that should be heard by different audiences (see Chapter 25). Often one project has multiple audiences for its research findings and implications. For example, teachers and coaches may be interested in particular aspects of your project that are different from those messages for principals and different again from messages for education/sport systems or other researchers. Further, different audiences access information in different ways and in different places. Typically, dissemination may occur through the following conventional channels alongside other avenues such as blogs that, to date, do not carry the same academic weight as other output channels:

- *Conferences.* These often attract researchers working in universities, sports organizations and leaders in schools or school systems. Abstracts (summaries of the proposed presentation) are called for several months prior to the conference, are reviewed and then presenters are notified of acceptance or otherwise. Communication of research at a conference may be via an oral presentation as a stand-alone paper, as part of a cluster of papers often called a symposium or as a poster display.
- *Workshops and seminars.* You may have messages suited to more interactive or practice-oriented audiences such as teachers, coaches or parents who may be interested in how they can do things differently. Teachers may attend these seminars as part of their required professional development.
- *Research journals and books.* These avenues are the most challenging forms of dissemination, as most published work passes through a rigorous peer review process and requires several months of communication and refinement. Journals (and book publishers) are ranked using complex esteem measures, and early career researchers need to be informed as to what these are and whether they are relevant to their proposed publication plan.
- *Professional publications.* Teaching and coaching bodies, schooling systems, sports organizations and the like often have print or web-based publications that present short and practical research reports written in a genre that is engaging for their readerships.

It is important to strike an appropriate balance between dissemination through conferences, research and professional publications. For presentations, you need to keep your ideas fresh but, more importantly, for publications, you must avoid

repeating or plagiarizing your own work because it is likely that the publishers own the copyright for what you have written. For those undertaking a longer study such as an MPhil or PhD, it is important to consider what pattern of dissemination will enhance your research experience and curriculum vitae.

If you are planning a career in academia, publishing in academic journals is a non-negotiable expectation. For many universities, this one dimension of dissemination can be the most significant criterion against which the quality and effectiveness of your research are judged. One of our most passionate students in the field of coaching, Joseph Occhino, argues that as a ‘researcher in training’ it is imperative that you actively pursue opportunities to practise journal writing style under the guidance of your advisor(s). Joseph argues that this is a very good way to get your research into the wider academic community (if it is of the right level and quality) and begin to build a name and reputation for yourself as an expert within the field. However, Louise and Joseph both warn that publishing in academic journals is not for the faint-hearted. Multiple rejections, confusing feedback, conflicting journal guidelines and the length of ‘in press’ time all serve to test the most experienced and reputed researchers. Additionally, the specific groups for whom the research has been produced and the stakeholders that you may wish to ‘speak to’ may not have ready access to academic journals. As Joseph recommends, researchers can use other avenues of publishing, such as magazines, blogs, newspapers and professional newsletters to obtain a quicker and more effective communication of findings and implications to those in the field. Nonetheless, it remains important to consider any potential copyright breaches. It is also important not to release raw research findings into a community that may act upon them. This is where the peer review process, although far from perfect, can act to protect the interests of the public and potential users from poor-quality research, which, at worst, could do harm if recommendations from it were to be implemented.

For both Joseph and Louise, conferences are one of the most enjoyable aspects of working in research – and the opportunity to meet and visit with colleagues across the globe is certainly a bonus! Nonetheless, conference attendance must result in tangible outcomes; conferences are expensive to attend in both time and money and, although enjoyable, they are also hard work and often very tiring. Joseph has been fortunate enough to attend conferences in Japan and Belgium, where he had the opportunity to connect with like-minded colleagues and share his interests, ideas and findings, and, as indicated in the opening quote of the chapter, derive direction and a sense of achievement.

Conclusion

This chapter has provided some principles and practices to consider as you go about your research journey, however long it may be. Running through the points made is the importance of asking questions of your research advisors/supervisors, colleagues, participants or even funding agencies, to keep your inquiry on track. Further, if you hit a road block, try to identify what it is as quickly as possible and seek assistance if required. It may be that you need support for simple things, such

as interpreting a theorist or accessing software, through to recruiting participants or overcoming writer's block. Louise and her colleagues have illustrated their successful navigation of the research journey with reflections on managing themselves, their data and their relationships. Each of their stories highlights the individuality of their research experience, although each also suggests the careful planning that typifies most worthwhile journeys.

Key terms

Research management Prior to starting a project, attention should be given to intended outcomes, timelines, resources required, budget, data management, and expectations for supervision and dissemination.

Ethical research Researchers must be vigilant of the effects of research participation and dissemination on the welfare of participants and its contribution to public good.

Support network Regular, formal and informal communication, either face-to-face or remotely, with peers, more experienced researchers, supervisors, content experts etc. can provide varying input, intimacy and guidance that may assist the quality of both the research experience and outcomes.

Research dissemination Research processes and findings may be shared via publication in academic journals, conference presentations or posters, professional newsletters or various electronic media.

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3 Positioning yourself as a researcher

Four dimensions for self-reflection

Juan-Miguel Fernández-Balboa and Nathan Brubaker

In order to more fully understand this reality, we must take into account other dimensions of a broader reality.

(John Archibald Wheeler (1911–2008), North American physicist)¹

Introduction

In this chapter we take a different approach from many others in this book. As a student and, perhaps, future researcher in physical education (PE) and sport, it is important for you to understand that research, far from being a matter of meticulously applying certain methods to finding out the solution(s) to a particular problem, entails many factors that affect not only the processes, purposes and outcomes of research studies but also the researcher him/herself. The researcher's 'position' is one of these factors.

The term 'position' has many interpretations. It can be understood as (a) one's point of view or ideological perspective (e.g. technocratic, critical, neo-liberal, democratic); (b) one's location in the power hierarchy (wherein one can have more or less influence on decision making); or (c) a concrete place in the ongoing developmental process that goes from beginner to master and beyond. There is yet another way of looking at this concept: that of being in different dimensions – i.e., hypothetical self-contained separate realities coexisting with one's own.²

Have you ever looked at a picture in which there is a vertical white figure in the middle that, at first sight, resembles a vase or jar, but when you look again you see that this is just the space between two silhouetted profiles facing one another (see Figure 3.1)?

This is the crux of our question. Both the vase and the faces had been there all the time; yet on looking at the figure for the first time, you may have seen just one of these elements (people seldom see both simultaneously). It could be argued that initially you could see this picture only partially because the rest is in a different 'dimension'; only after you penetrated that other dimension did what was 'missing' appear.

Something similar could be said regarding your position as a researcher. No matter where you are in your development as a researcher (be it as beginner or expert), there are different dimensions into which you can enter depending on your level of consciousness at a particular moment. In this chapter, we will theorize about four such dimensions.